4.1 Introduction

Rates of metal extraction in India increased rapidly after 1980s (Singh et al., 2012). As of 2010, India was one of the five largest sources of metals in the world and accounted for 12.7% of chromium, 32.7% of aluminium, 23% of manganese, 15% of lead, and 20% of iron ore produced in the world (Schaffartzik et al., 2016). Since metallic ores are geographically constricted, certain locations in India provide the bulk of metallic resources (Bhushan et al., 2008). For instance, 99.6% of total metal extracted in 2012-13 was obtained from eleven states (own calculation). Among the different metals, iron ore has consistently been the largest in terms of the total mass extracted worldwide, accounting for close to 90% of the total global metallic ore extraction (Kraussman et al., 2012; Schaffartzik et al., 2016). In India, iron ore accounted for 87% of total metallic extraction as of 2013 (own calculation, data source: IMYB, 2013; see Annexure I).

Overall, India cannot be categorized as a typical resource periphery (Kraemer et al., 2013). However, since India is largely self-dependent in terms of its metallic mineral usage (Singh et al., 2012), and metallic minerals are geographically limited, there are specific regions within India that serve as suppliers of primary commodities. These regions, rich in mineral resources, also happen to coincide with dense forests inhabited by indigenous communities (Bushan et al., 2008) who are likely to suffer from predatory extractivism.

The next section of the chapter presents the data sources and the theoretical framework used in the analysis of the cases of social mobilization against extractivism. The third section discusses the role of extractivism in generating...
environmental injustices. The fourth section explores the trends, patterns and geographical distribution of iron ore extractivism in India. The fifth section provides brief descriptions of 9 major EDCs involving iron ore extraction. Utilizing these cases of social resistance, it examines the nature of environmental injustices at such, existing or potential, iron ore peripheries. The sixth section explores the role of social mobilization and environmental justice struggles in altering patterns of iron ore extractivism in India. The final section concludes the chapter.

4.2 Trends of iron ore extractivism in India

Iron is the largest metallic ore in terms of quantity extracted in India; it is the most important mineral in terms of value and is the metallic mineral exported in the largest quantity from India. Iron ore extraction has expanded consistently (see Fig. 1 a and b) since the 1950s—increasing from 4 MT in 1952 to 136 MT in 2012-13, and peaking at 218 MT in 2009-10 (IMYB, 2013) during the global commodity boom of the 2000s. India is currently one of the largest iron ore producers and exporters in the world. As of 2010, it was the 4th largest in terms of iron ore extraction, and contributed to 11.2% of total global extraction (Schaffartzik et al., 2016).

Figure 4.1: a) Trends of total metallic ore extraction in India (1951-2013); b) Metallic ore extraction in India by major metallic minerals (1951-2013).

The analysis of iron ore extractivism in India indicates that the industry is a) restricted to geographically constrained regions, b) largely controlled by private players, and b) composed of a small number of large-scale mines. Let us see in detail each one of these features. Iron ore extractivism is spatially limited by the availability of ore deposits, and is constricted to 9 states. Out of these, five (Odisha, Chhattisgarh, Jharkhand, Karnataka and Goa) account for over 90% extraction. In 2013-2014, Odisha accounted for close to 50% of the total production in the country, Chhattisgarh for 20%, Jharkhand for 15%, Karnataka for 12%, and all the other ore produced accounted for the remaining 3% (IMYB, 2014). At the district level 65.5% of total iron ore production is accounted for by four districts—Keonjhar (Orissa), Bellary (Karnataka), Singbhum West (Jharkhand) and Dantewada (Chhattisgarh). Based on the grade of ores, these four districts account for about 96-97% of the total 65% Fe grade; and 60-62% of 62-65% Fe grade in the country (Firoz, 2008). Of the 298 reporting mines in 2013-14, 35 belonged to public sector undertakings, accounting for 39% of the total production, whereas the remaining (263) were private sector undertakings, accounting for the remaining 61% (IMBY, 2014). A large amount of production is controlled by a small number of large mines, with 35 mines accounting for 85% of total output. Out of these, 14 public sector mines accounted for 38%, and 15 private sector mines accounted for 47% of the total production (IMYB, 2014).

The iron ore extractivist frontiers in India are regions of complex socio-political, ecological and cultural interactions, primarily because iron ore deposits coincide with dense forests, and Schedule V areas inhabited by the adivasis (indigenous or tribal communities) of Central India (Bushan et al., 2008). The three largest iron ore producing states—Odisha, Chhattisgarh and Jharkhand—have large numbers of

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28 Goa, which is the fifth state did not produce any iron ore in 2013-14 owing to the blanket ban on iron ore mining since 2012 (IMYB, 2013/4).
29 Higher grade ores have larger iron content, thus higher economic benefits per tonnage of ore extracted. Higher grade ores also imply lesser content of overburden or waste generated. Lower grade ores, especially less than 62% Fe content, also have lower productivity in Blast furnaces during steel production. As such higher grade ores are preferable to lower grade ores. Grades of iron ore are typically classified into >65% Fe content, 62-65% Fe content, and < 62% Fe content (see https://www.911metallurgist.com/blog/different-types-of-iron-ore, http://minerals.statedevelopment.sa.gov.au/geoscience/mineral_commodities/iron_ore ).

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adivasi populations, and dense forest covers. Within these states, the iron ore rich districts have predominantly adivasi communities. Adivasi communities often differ from the rest of the population in terms of their cultural and religious connections to local ecosystems, their dependency upon forests for hunting local fauna, gathering forest produce, their socioeconomic conditions, and their ways of living. The socioeconomic dynamics of this marginalized group are particularly significant with respect to iron ore peripheries.

4.3 EDCs against iron ore extractivism in India

The following section presents, in brief, nine cases of social mobilization and resistance movements against iron ore extractivism in India.

4.3.1 Bellary, Karnataka: Bellary has the largest reserves in Karnataka, and accounted for over 60% of the iron ore extracted in the state in 2011. Of the 124 operating mines, 98 are located in forest areas, covering over 9,527 ha of forest land (Shrivastava, 2011). Although mines have been operating since the late 1990s, sharp increase in iron ore prices since 2000s led to a boom in extractivism, which was largely illegal in nature. In 2007, the State Lokayukta appointed a committee to look into allegations of illegal mining. The resultant justice Santosh Hedge Report revealed the extent of illegality, corruption, and plunder of mineral wealth in Bellary. In 2012, a blanket ban on all illegally operating mines was imposed by the Supreme Court of India.

4.3.2 Caurem, Goa: The Goan iron ore mining belt covers area of 700 sq. km, and occurs in the ecologically sensitive Western Ghats (WGEEP, 2011). Extraction increased from 12.1 MT in 1992, to 41.1 MT in 2009, largely illegally. This resulted in a ban on mining in 2012 by orders of the Supreme Court on recommendations of the Justice M.B. Shah commission. In 2013, the Supreme Court ordered e-auctions of

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30 For further details see: Report on the reference made by the Government of Karnataka under Section 7(2-A) of the Karnataka Lokayukta Aat 1984 (PART – II), 2011 (27th July).
31 For further details see: Writ Petition (CIVIL) No. 435 OF 2012. In the Supreme Court of India.
mining dumps and ore extracted prior to the ban (Chakravarty, 2013), transportation of which began in 2015 (Das, 2015). In 2016, the United Tribal Association Alliance in Goa put forth a 12 point charter to the government to address and further prevent environmental injustices borne by tribal communities (Haksar, 2016). This included the demand to allow cooperative mining by *adivasis* (discussions with Rama Velip, Tribal leader, Caurem, 2016).32

4.3.3 Dantewada, Chhattisgarh: The Bailadila Hills of Dantewada district is one of the largest deposits, with the best quality of iron ore in India. NMDC (National Mineral Development Corporation) began operations here in the 1960s, and currently operates over 14 deposits in the area (Kunjam, 2016). Mining operations have affected over 52 villages in the region (Foil Vedanta, 2016). Apart from impacts of pollution, forests hold cultural significance for *adivasis* (Oneindia, 2008), and mining represents a form of desecration of cultural heritage. Despite grievances against existing operations, forest clearance rights were granted for expansion of operations in 2014—increasing extraction by 10 MT/yr over an additional 317 ha (Bharadwaj, 2014). Extractivism has caused violent conflicts in the region resulting in intimidation, harassment, and threat to the lives of villagers both from the ideologically anti-extractivist Naxals and the State’s paramilitary forces (Bhattacharya, 2016).33

4.3.4 Gadchiroli, Madhya Pradesh: Of the estimated 270 MT of iron ore in the state of Maharashtra, Gadchiroli has about 180 MT (Routary, 2016). In 2007, Lloyd Steel received clearances to begin iron ore mining operations in Surajgarh hills of Gadchiroli—a predominantly adivasi district. However, the project has been stalled multiple times since being granted approval owing to protests by villagers, and a strong Naxal presence. The region is currently heavily militarized. In 2013, Naxals shot dead the Vice-President, and two other employees of Lloyd (Deshpande, 2013). Extraction began in March 2016, but was shut down within days, owing to opposition


by local villagers (Aryal, 2016). Social resistance is still active, despite strong State repression, and based around issues of dispossession and displacement, loss of cultural ways of living, and fear of further economic immiseration (Goyal, 2016).34

### 4.3.5 Keonjhar, Odisha:
Keonjhar district is the largest producer of iron ore in the country. The mining belt stretches across a 1000 ha area. At the peak of iron ore extraction, this district provided for close to 21% of the total iron ore mined in India. It is also a heavily tribal-dominated and once a densely forested region. Owing to illegal mining operations, the Supreme Courts, on recommendations of the Justice M.B. Shah Commission, banned operations for almost all of the more than 120 mines operating in the Joda-Badbil-Koiria area of Keonjhar (Justice M. B. Shah Commission, 2013).35 Currently, legal mining operations continue albeit in reduced magnitude.

### 4.3.6 Praksham, Andhra Pradesh:
Praksham has deposits of over 60 MT of low grade iron ore. In 2005, Andhra Pradesh Mineral Development Corporation (APMDC) signed a MOU with Gympex Limited (Chennai) for extraction in Prakasam. The project was granted an area of 1300 ha for mining and a beneficiation plant. Mining was to be conducted over an area of 490 ha spread over the villages of Konijedu and Marlapadu. In 2011, a public hearing conducted by the district authorities for clearances was boycotted by the villagers. Hundreds of villagers raised slogans, and held placards against extractivism. The protest escalated resulting in clashes with the police, in which four protesters were injured, and one suffered critical injuries (Twocircles, 2011). The primary concerns of the villagers included the destruction of the major source of water supply in the region, environmental pollution (air, water and noise), displacement, and dispossession.36

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36 For further details see: Patra, 2014. Mining Project at Marlapadu village, India. [https://ejatlas.org/conflict/mining-project-at-marlapadu-village-india](https://ejatlas.org/conflict/mining-project-at-marlapadu-village-india), in Annexure IV.
4.3.7 **Kanker, Chhattisgarh:** The Rowghat mines, in Kanker district, are the second largest deposit of iron ore in Chhattisgarh with an estimated reserve of 731.93 MT. Of this, SAIL (Steel Authority of India Ltd.) has possession of the largest block—Deposit-F—which contains an estimated 476.45 MT or iron ore (Das, 2016). Deposit-F is spread out over an area of 2029 ha in Rowghat. In 2008, the Supreme Court of India gave the final consent for forest clearance for mining Deposit-F. The mining has faced local opposition, both by villagers (largely *adivasi*) and Naxals. Opposition by the *adivasis* is mainly related to environmental, religious, and livelihood sustenance issues (Sharma, 2015). In 2014, following years of brutal suppression of the local resistance against mining, the construction of support infrastructure was initiated. Eventually in 2015, mining operations began (Kumar, 2016).

4.3.8 **West Singhbhum, Jharkhand:** The Saranda forests in West Singhbhum district are dense forests that stretch over 82,000 ha (Sethi, 2014). As of 2016, 85 companies have been granted permission for mining in these forests (Lambert, 2016). The core area of Saranda is ancestral home to over 36,000 Ho and Munda *adivasis* spread across 56 villages (Deogharial, 2013) and is also to an elephant corridor. In 2012, SAIL was granted permission for expansion of existing mining operations over 273 ha, and and additional 351 ha in 2013 (Chakravartty, 2014). In 2013, Jindal Steel Works (JSW) and Rungta Mines were granted permission for 1500 ha and 100 ha to begin exploration (Shrivastava, 2013). The region also has strong Naxal and paramilitary presence. Anti-mining protests have been organized by *adivasis* for years, but mining proposals continue to be approved (Dungdung, 2013).

4.3.9 **Tiruvannamalai, Tamil Nadu:** In 2005, TIMCO (Tamil Nadu Iron ore Mining Corporation Ltd.)—a joint venture between the Tamil Nadu Industrial Development Corporation (TIDCO) and Jindal Vijayanagar Steel Ltd. (JVSL)—applied for forest clearance of over 325 hectares in the Kavuthimalai Reserved Forest

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in Tiruvannamalai district. The mining venture intended to clear over 200,000 trees to mine approximately 75 MT of low grade (47%) of iron ore from the Kavuthi, and 35 MT from Vediyappan hills (Ramesh, 2014). Owing to social resistance, TIMCO revised the proposal for reduced clearance of 23 ha in 2014. This was followed by the declaration of intention to “not allow even a fistful of soil to be mined” (Ramesh, 2014). In April of 2015, following years of social resistance the Madras High Court denied permission for operations (Pathan, 2015). The final decision is pending under the Supreme Court of India.39

4.4 The ramifications of extractivism: Features of predatory extractivism at iron ore peripheries in India

Using the above mentioned cases of EDCs, some consequences of predatory iron ore extractivism in India are explored below.

4.4.1 Unequal economic gains: Given the scale of operations, which require significant capital and resource inputs, extractive agents are generally socially, economically, or politically powerful actors. Their presence, especially juxtaposed against the local resident adivasi communities, introduces highly asymmetrical power dynamics at extractive frontiers, as has been observed time and again in India. Extractivism has been occasionally found to be linked with corruption, and illegal mining operations, resulting in massive losses to state exchequer. The case of Karnataka shows the large scale corruption, and blatantly illegal operations that can accompany extractivism. The Lokayukta investigation into illegal mining in Karnataka revealed a total 298.6 lakh MT of iron ore transported in excess of permits, resulting in loss to state exchequer to the tune of Rs. 12,228 crore between 2006 and 2010 (Karnataka Lokayukta, 2011). Aside from this, royalties which are expected to make significant contributions to state exchequer are often influenced by agents of extractivism. For instance, despite mandated revision of royalties, they remained at

an abysmally low maximum of Rs. 27 per tonne for lumps, and Rs. 19 per tonne for fines until 2012, resulting in companies earning “super normal profits” in Odisha— which increased from average before tax (PBT) profits of Rs. 139.78/MT in 2001–02 to Rs.3237.64/MT in 2010–11 (Justice M.B. Shah Commission, 2013), leading to large losses to the State exchequer. In Goa estimates suggest that close to 94.5% of the value of mineral wealth was lost to the State between 2004-05 and 2011-12 due to low royalty rates and illegal mining (Basu, 2014, Basu, 2015). Another dimension of the abuse of power is manipulation of public services for corporate interests. In 2011, local Hindi newspaper Dainik Bhaskar carried a report citing that officials of BSP (Bhilai Steel Plant) offered to invest ~50 Cr INR (75 million USD) to set up a local division of the police force for “industrial security”. Although these reports were denied by representatives of the company, allegations were confirmed by anonymous senior local police officials (Sethi, 2011).

4.4.2 Large scale ecological degradation and cost-shifting of environmental externalities: SAIL’s approval for expansion of mining activities in Saranda in 2013 required the destruction of 325 ha of undisturbed Reserved Forest (Ramesh, 2014), and clearance of 40,000 trees, 26,000 of which were observed to have a girth of over 70 cm—an indication of good forest health (Chakravartty, 2014). Saranda supports a large floral and faunal biodiversity, and also serves as an elephant corridor (Priyadarshini, 2008). Apart from forest clearance, massive environmental pollution is generated due to mining which can impact large areas of the region. This has multiple, cascading implications on the daily lives of local residents, resulting in generation of conflicts. A case in point is the various protest rallies organized against intensification of iron ore extractivism in Dantewada. In 2014, a gathering of 2500 adivasis from 55 villages protested the permission for forest clearance for expanding an NDMC mine, citing environmental and health hazards generated by already existing operations. According to them, existing operations had already impacted close to 35,000 ha of land around the mines. The leader of the protest Ramesh Samu stated:

40 A term used by the Justice M. B. Shah Commissions’ First Report on Illegal Mining of Iron and Manganese ores in the state of Odisha.
We will not tolerate this anymore...The mining corporation has fooled us by promising jobs. Our children are dying because of the polluted water. Our field are becoming barren and the cattle are dying too. The mining must stop. (Kaushal, 2014).

4.4.3 Social, Environmental, and Economic immiseration of ecosystem-dependent communities: Extractivism often results in generation of poverties and economic immiseration of local communities at peripheries. This is frequently cited as a major reason for social resistance against extractivism. Local ecosystems serve as sources of livelihood sustenance for villagers in forests, who are either reliant on agriculture, or on collection of NTFPs which is purchased by the Government at MSP in local markets. With destruction of forests, these sources of income are lost. With the associated soil and water contamination, agricultural productivity reduces. Finally, there are various ecosystem services that local ecosystems provides, including maintenance of soil fertility, provision of clean water, and clean air etc., which are heavily disrupted with ecological degradation. The resultant pollution has various other impacts, such as health impacts on local people who are exposed to environmental toxins. These transgressions on lives and livelihoods of people generate resentments which are frequently manifested in the form of social mobilizations.

4.4.4 Establishment of monoproductive economic systems: Extractivism can result in integration of local communities into existing extractivist economies primarily due to two reasons: a) destruction of older socioeconomic systems; and b) quicker profits from the extractivist industry. Local people, depending upon their current socioeconomic conditions, either get employment as daily wage laborers, or make investment in mining-related equipments. Employment as manual labor is often a result of economic immiseration, dispossession and lack of alternative options for livelihood sustenance. The latter generally has to do with quick and easy profits. This has been observed particularly in the cases of Goa and Odisha, where people invested heavily in trucks and other small mining equipment in order to derive profits from mining (Layak, 2012; Bera, 2012). However, integration (for either reason) is often associated with abandonment of agricultural and other occupations, and loss of
associated skills. This can create strong local economic dependencies on extractivism. Owing to the generation of these monoproductive systems, ceasing of mining operations, or movement of the extractive economy to another location, result in sudden loss of income due for local populations (Layak, 2012).

4.4.5 Cultural impacts of ecological degradation: Apart from providing livelihood sustenance, ecosystems provide aesthetic and cultural ecosystem services. This cultural role can be evidenced by the thousands of ‘sacred groves’ spread across India. The cultural value of ecosystems are especially significant for adivasis (Dungdung, 2013). The daily life of adivasis are closely interwoven with forests, and the “forest nurtures their life and the biotic and abiotic components of forest ecology fulfill their socio-economic, bio-social, religio-cultural and psycho-social needs” (Nayak, 2010, p. 203). Iron ore deposits frequently coincide with adivasis regions, and ecosystem degradation is a form of defilement of cultural heritage and represent loss of culture and ways of life (Dungdung, 2013). For instance, Kavuthimalai hills are considered as the abode of Gods (Ramesh, 2014), and hold religious significance for thousands of local villagers who undertake a 1 km parikrama (circumambulating around sacred objects) here every year. In Saranda forests, the core areas are ancestral home to over 36,000 Ho and Mundi adivasis (Deogharial, 2013), who have lived there for centuries and played a key role in maintenance and protection of forests (Bera, 2012). Saranda is closely intertwined with the spiritual and cultural practices of the tribes (Lambert, 2016). For instance, Ho adivasis custom dictates that burials should be conducted under the shade of trees of the Saranda forest; as one local adivasi laments: “I just hope they leave some forests for our graves” (Bera, 2012).

4.4.6 Undermining democracy, and suppression of social resistance by State-corporate collusion: Unconstitutional processes that undermine democracy have been reported in many iron ore extractivist frontiers in India. According the Forest Rights Act (2006) and the Panchayat Extension to Scheduled Areas Act, 1996 (PESA), adivasis need to be consulted for grant of their approval through Gram Sabhas before any land acquisition. However, the process of obtaining
approvals is often manipulated. Adivasi leader Gota from Gadchiroli describes the constant harassment suffered by locals at the hands of police and state paramilitary:

We are monitored by them all the time. They call up the villagers and threaten them. They call young boys to police stations and ask them to clean drains. They ask villagers to support mining. They tell us that it is going to improve our lives; we will get employment. When villagers reason with them about forest rights, they are beaten up by cops (Goyal, 2016, Tehelka).

In Goa, adivasi activist Ravindra Velip, while protesting against illegal ore transportation, was arrested in 2016. While in custody, he was “attacked by at least 4 persons, blindfolded and gagged, and beaten up and kicked mercilessly. He was lifted and thrown down from a height, resulting in multiple fractures to his forearm” (Sawaikar, 2016). Similarly, Rowghat has been plagued with fear and violence since at least 2011. Anti-mining mobilization which had sprung up has been brutally, and systematically squashed using police, and paramilitary force. Forms of intimidation and violence reported by local adivasi residents include arbitrary arrests, tortures, and sexual harassment of women. Of the many such cases, one incidence is that of a prominent leader of anti-extractivist movement—Gawde who was arbitrarily arrested in January 2014, and kept imprisoned without conviction for close to a year before finally being sentenced to a 7 year imprisonment in June 2015 by a local court (Kumar, 2016).

4.4.7 Militarization, rebel groups, and disruption of regular lives of citizens: Owing to extractivism, a situation of violent conflict has emerged at these iron ore frontiers. This includes three major players: a) the State (police and paramilitary), b) self-organized but allegedly State/corporate funded groups (earlier Salwa Judum, and now Vikas Sangharsh Samiti),41 and c) anti-extractivist and pro-

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41 Salwa Judum in Gondi language translates to either “peace campaign” or “purification hunt” depending upon interpretation by different factions of people involved in the conflict. The movement began as a self-organized, people’s movement and was an anti-Naxalite campaign in Dantewada, Chhattisgarh in 2005. This involved arming local tribal youth and the creation of a civil militia funded by the state, and supported by the central government. The movement was eventually banned for human rights violations in 2011 by the Supreme Court of India
adivasi groups (one being Naxals). This has resulted in threat to the lives of villagers both from Naxals, State police and paramilitary (Bhattacharya, 2016; Sakal Times, 2010). In Dantewada, a series of bomb blasts took place in 2010 apparently triggered by the Naxals in the region which resulted in the death of 150 people—including paramilitary, Naxals, and villagers (Sakal Times, 2010). Another Naxal attack in 2010 resulted in the death of 76 CRPF (Central Reserve Security Force) personnel (DNA, 2015), resulting in further militarization of the region. In Gadchidoli, a local youth, Raju Sedamake, was killed by the Naxals for persuading villagers to agree to mining operations (Ghanekar, 2015). Villagers face harassment at the hands of the forces even if they are vocal about their anti-mining stance, and are commonly branded ‘naxalites’ by local police and arrested, detained, tortured and even killed. In May of 2016, a local youth was captured by the paramilitary (called the C60) and beaten in front of the entire village for two hours during which, “the C60 managed to break two sticks on him... (he) lost consciousness twice...they beat his wife when she protested” (Iqbal, 2016, The Wire). Adivasi leader Gota recounts another incident on Martys’ Week (organized by the Naxals) when, “close to 250 people were detained for eight days across various police stations of Etapalli tehsil” (Goyal, 2016, Tehelka). In 2016, Naxals released a pamphlet appealing to civil society and citing close to 191 cases of police brutality between January and June of 2016 (Iqbal, 2016; Routary, 2016). The government responded by proposing the Maharashtra Protection of Internal Security Act (Bill), 2016 (MPISA)—which was withdrawn within days of public circulation, due to heavy criticism. The objective of the new law can be gauged by Section 14 (6)—which states: “Any Police Officer may use such force as may be necessary, in order to stop the commission of any offence under this Act, within his view” (Naved, 2016).

(Asian Centre for Human Rights, 2006). As of 2015, a new movement, called the Vikas Sangharsh Samiti, similar to the Salwa Judum and led by the son of the late Mahendra Kumar (who led the Slawa Judum and was murdered by Naxalites in 2013) has emerged (Bharadwaj, 2015).
4.5 Role of social resistances in altering patterns of extractivism

Social mobilizations against extractivism offer a powerful tool, and often the only one available to already affected, or potentially impacted citizens. The environmental injustices—current or potential—onto local citizens are commonly opposed through the utilization of, or at least an attempt to utilize, their rights to prevent dispossession, displacements, and/or economic immiseration. Despite constitutional arrangements for the protection of citizens, even getting the attention of unwillingness often requires mobilization. Social mobilization is frequently self-organized at the grassroots level, but often involves external actors. Two major external actors that play a role in the impact that social mobilizations have had are National Advocacy Networks (NANs)42 and the judiciary. Resistance movements can be assisted in visibility and outreach through the involvement of NANs. Although not in all cases, social resistances have been successful time and again in preventing extractivism in India.

India has a long history of social mobilization against extractive industries under a democratic system. The Chipko movement against extractive logging in the state of Uttarakhand, the Narmada Bachao Andolan (NBA) against a large-scale hydro project on the Narmada river, the anti-POSCO (Pohang Iron and Steel Company) movement against displacement and dispossession for a steel plant in Odisha, the Niyamgiri Bachao Andolan against bauxite mining in Odisha, and the lake Chilka protests against extractive shrimp farming in Odisha are all a testimony to the culture of anti-extractivist resistance. Although not all movements have been successful in obtaining justice to protesters, many cases of resistances in India have resulted in either directly halting patterns of extractivism, or in the setup of legislations that provide rights to local communities in order to prevent environmental injustices. These include a 15 year ban on timber logging as a result of the Chipko Andolan, the 1997 Judgment for the prevention of shrimp farming in lake Chilika, and the Justice

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42 NANs or National Advocacy Networks or, “NANs consist of national activists, NGOs, community organizations, research organizations and independent media groups that are engaged in national-level advocacy on behalf of the numerous local struggles in remote parts of the country” (Kraemer et al, 2013, p. 5).
M.B. Shah Commission for the prevention of illegal iron ore mining. Moreover, various constitutional rights granted to indigenous peoples have been set in place in order to protect their rights over territory against extractive industries, such as the designation of Schedule V and VI\textsuperscript{43} areas, FRA (2006)—which grants indigenous people the first rights to forests historically occupied them, and PESA (1996)—which constitutionally mandates obtaining approval of adivasis, through Gram sabhas for any industry activity in Scheduled areas.

Analysis of the above mentioned cases of resistances indicates that democratic conditions have a noticeably significant role in the success or failure of social mobilization in altering patterns of extractivism. Strong presence of an armed rebellion against extractivism, which is built around the unconstitutional dispossession of people, is one manifestation of the failures of implementing the principles of the Constitution. Out of the 9 cases analyzed, there were five cases (Andhra Pradesh, Goa, Odisha, Karnataka and Tamil Nadu) where social resistance has been successful in altering patterns of extractivism thanks to the implementation of democratic conditions and direct action by the judiciary. In the remaining four cases (Jharkhand, two cases in Chhattisgarh, and Madhya Pradesh), where social resistance has not been successful till date, the major players that have been involved are the State paramilitary, the Naxals, and the adivasis—indicating violence and repression as key factors in the prevention of bringing environmental justice to local people. It is noteworthy that environmental injustices with regard to iron ore extractivism have been largely due to the inability of the government to implement already existing policies—these failures have been at the a) preventive phase; b) regulation of mining; and c) in the redistribution of benefits of extractivism. As such, in many major iron ore producing states (Odisha, Karnataka and Goa), iron ore extractivism was indefinitely suspended by a Supreme Court verdict in 2012, until transparency is institutionalized, and agents of extractivism can be held appropriately accountable for the environmental injustices. A few major, direct and

\textsuperscript{43} Schedule VI (applicable to the northeastern states) and VI (applicable to the rest of India) of the Indian Constitution provide for a substantial degree of autonomy in self-governance in districts where adivasis are in majority (Guha, 2007).
indirect, outcomes of social mobilization against iron ore extractivism in India have been:

4.5.1 **Drawing attention towards institutional failures, illegal operations, and environmental injustices of the government:** In Goa, the social mobilization consisted of a broad range of actors including researchers, citizens, NGOs, activists, lawyers, *adivasi* communities, and journalists among others. The combined efforts of these groups were able to introduce the extent of illegal extractivism within the state into public discourse, and eventually to bring to the attention of the state and central governments.

4.5.2 **Setting up of an independent expert panel and Centrally Empowered Committee to study the local impacts of extractivism:** As a result of the extent of illegal iron ore mining, and hence the lack of official data and statistics on the loss to public exchequer, prior to the imposition of the 2012 ban, the Supreme Court appointed a Centrally Empowered Committee. The CECs engaged with local communities, activists, NGOs, and other relevant stakeholder to document grievances, and to determine the extent of mining irregularities in iron ore mining belts of the different states. This enabled the exposure of the nature of illegal extractivism, the role of different actors, the names of companies conducting illegal operations, the estimated quantities of illegal extraction, the presence of mines within forests, the impacts on local wildlife, details on mafia etc. These can all be accessed on the reports of the Centrally Empowered Committees in Goa, Karnataka and Odisha. These reports were instrumental in enabling the Supreme Court to take an informed decision with regard to iron ore operations in these states.

4.5.3 **Ceasing extractivist operation of defaulting corporations as in Odisha, Karnataka and Goa:** Based upon the finding of the reports of the Centrally Empowered Committees, which was substantially informed by local activists, researchers, journalists, lawyers, local NGOs etc., the Supreme Court, in 2012, imposed: a) a temporary blanket ban on iron ore mining operations in the state of Goa, b) banned operation of a large number of mines in Odisha, including prominent players such as Essel Mining and Industries Limited, belonging to the Aditya Birla group; c) banning of mining and export of iron ore from Bellary in
Karnataka, the arrest of politicians, and one of the largest mining barons and in the region—the Reddy brothers, and resulting in the eventual resignation of the Chief Minister of the state—Mr Yeddyurappa (Thomas, 2014).

4.5.4 Institutionalization of transparency as in the case of the I3MS\textsuperscript{44} system in Odisha: In order to institutionalize transparency, and to enhance the system of monitoring mining and transportation in Odisha, and to increase efficiency of information access across different stakeholders, the Department of Steel & Mines along with the IIT, Bhubaneshvar has created an e-Governance platform called the Integrated Mines and Minerals Management System (I3MS). The I3MS provides real time information on royalties, dead rent, seizure, mineral extraction, and mineral dispatch and other information regarding the mining sector within the state.

4.5.5 Steps towards capping resource extraction based on biophysical and infrastructural capacities as in Goa: Based upon the ecological impacts of mining, and the carrying capacity of the state infrastructure, the Supreme Court recommended capping annual extraction of iron ore, other than from existing sumps, in Goa at 20 MT. However, this mining is required to be permitted following set up of adequate mechanisms for strict monitoring, and following the rules of the MMDR Act (Civil writ Petition, 2012).

4.5.6 Mandating the establishment of District Mineral Foundations to manage redistribution of economic benefits of extractivism: As per guidelines of amendments to the MMDR Act in 2015, state governments are now required to set up statutory bodies called District Mineral Foundation (DMF). All mine lease holders are required to contribute a fraction of royalty, not exceeding one-third of the royalty, to the DMF as per rates prescribed by Central Government. The objective of the DMF would exclusively be the funding of welfare activities for people in mining affected regions of districts (MMDR Act (1957) (2015)). As can be observed from the case of the Keonjhar DMF,\textsuperscript{45} this enables citizens from access to the activities and initiatives undertaken by under the DMF. In Goa, the Goenchi Mati movement

\textsuperscript{45} See http://orissaminerals.gov.in/dmf/utilization-district-report.html.

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has been continually engaged with the state authorities to design a mechanism to ensure efficient utilization of DMF funds.46

4.5.7 Proposal for cooperative mining by adivasis as in Goa: The adivasi communities of Goa have put forth a recommendation with the state government for cooperative mining by the adivasi communities residing in the iron ore mining belt of Goa. The proposal has not yet been accepted by the State government yet, which has resulted in agitations by the adivasi communities that continue till date (TOI, 2016; Haksar, 2016).

4.5.8 Raising awareness among adivasi communities regarding their constitutional rights: As a result of social resistance movements, there has been a general trend of increasing awareness among adivasi communities regarding important constitutional rights, such as PESA and FRA. Various lawyers, and lawyers groups’ are active in mining affected regions who often provide free services to adivasi communities, activists, and protesters. For instance, JagLAG (Jagdalpur Legal Aid Group) in Chhattisgarh is involved in helping adivasis defending false criminal charges (Bearak, 2015), Goa Foundation has been active in raising awareness regarding the DMF,47 and individual lawyers such as John Fernandes in Quepem, Goa, and Adv. Lalsu Soma Nogoti in Gadchiroli, Chhattisgarh have been continually involved in raising awareness and in representing adivasis who have been arrested or detained by the police as a result of their anti-mining stance or involvement in protests.

4.6. Conclusion

Iron ore extractivism in India can be observed to have features of predatory extractivism. It has resulted in instances of abuse of power, militarization and violence, subverting constitutional rights, undemocratic means of acquiring consent, loss of revenue to State exchequer and human rights violations against citizens. The presence of an armed conflict is one indication of the consequences that predatory

46 See http://goafoundation.org/gmpf/.
47 See http://goenchimati.org/.
extractivism can have. This is not conducive to a functioning democracy, socio-economic sustainability, and for maintenance of cultural diversity.

Social mobilization has been a powerful tool in bringing cases of environmental injustice to the government and the public. It has sometimes delayed, if not halted, the expansion of the extractive frontiers. From the cases analyzed, it can be observed that mobilization has been more successful in new extractive frontiers, as compared to cases of intensification of existing operations. Resistance against predatory extractivism, and the issues that it brings to light show that justification of extractivism for national interest, local development, and improvement of human development indicators does not hold.

Whereas access to minerals and energy is important for social progress, new and different mechanisms of accessing and distributing the mineral wealth of the country need to be explored. Some of these are already being implemented, such as the Supreme Court mandated Permanent Fund. However, a deeper understanding of the mechanisms that generate predatory extractivism, specifically in the Indian context, is essential to develop alternative mechanisms for managing resource appropriation and distribution which will be discussed in chapter 8 of this thesis.