THE POLITICAL ECOLOGY OF ENVIRONMENTAL MOVEMENTS IN INDIA: A CASE STUDY OF ANTI-POSCO MOVEMENT IN JAGATSINGHPUR DISTRICT, ODISHA

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DECLARATION

I, BALAKRISHNAN P, hereby declare that the dissertation entitled '**The Political Ecology of Environmental Movements in India: A Case Study of Anti-POSCO Movement in Jagatsinghpur District, Odisha**', for the degree of **Master of Philosophy** is my bonafide work and may be placed before the examiners for evaluation.

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CERTIFICATE

It is hereby recommended that the dissertation may be placed before the examiners for evaluation.

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Balakrishnan P

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Chapter 1

Introduction

1.1 Introduction

'Environmentalism', generally considered to be an acronym of a 'bio-centric' perspective vis-à-vis the prevailing 'anthropocentrism' that the scientific revolution and the industrial capitalism is associated with. Preservation of nature has an intrinsic worth, quite apart from any benefits it may convey to future human generations. The preservation of the "unspoilt" wilderness is celebrated as a commitment of the humanity to their 'mother' Earth. It even resulted in the emergence of a radical movement in the developed world, "the Earth First", based on the principles of deep ecology to spread the messages of the conservation of environment on political line. Thus the post-1970 became the fertile grounds for the (deep ecology) environmentalist discourses to flourish. The centuries-long struggles by the people of the third world for their rights over the local environment and resources became shadowed by the "first world's" burden to teach the principles of environmentalism to the south. The historical movements of the global south, on the question of local control over natural resources, such as the Santhal rebellion, Kurichia-Kurumba revolt, the Naxalbari revolt and the Bastar Movements, etc., have almost never been considered a part of the mainstream environmental discourses, rather have been treated as the "local insurgencies" and "internal security threats".

The reluctance among the scholars to consider these "livelihood struggles" in the realms of the environmental movements is rooted in the Cartesian binary logic of understanding the human-environment relationship. This notion of human-environment relationship has identified the environmental movement as a movement primarily to 'conserve and protect' nature from the attack by the "greed of humans". Even though the greed of man to accumulate profit, an intrinsic feature of capitalism, has been identified as the core concerns of the sustainability of environment, these discourses are inadequate in addressing the question of political and distributive issues of nature. Such purity of

"green discourses" has been questioned by scholars from the Marxist and political economy tradition, because, for them, the conservation of natural capital was something, which cannot be separated from the key distributional questions (Redclift, 2006).

This understanding that "the availability and accessibility of good environment is not only an ecological factor but is conditioned by the political decisions made locally and globally" lead to the development of a new approach in the environmental discourses known as political ecology. The political ecology approach is a radical extension of the approaches of political economy and cultural studies. It tries to critically understand the synthetic relationship between human society and the natural world and thus involves a broader vision of the bio-environmental relationship. Thus for a political ecologist, the environment ranges from 'the very large cultural through intensely political (resource endowment) to fairly significant natural environment' (Chaudhary, 2006). The political ecology approach identified the environmental movements as a series of struggles and conflicts of various geographical scales that highlight the issues of livelihood and ecological security in the development debate (Prasad, 2004). Thus, the political ecology approach has tried to keep the question of social justice and equity at the center of ecological discourses. The third world political ecology approach as a somewhat radical version has tried to bring about the question of unequal exchange under the capitalist world system. Thus it counters the dominant global environmentalism by pointing out that 'the third World's heavy indebtedness to the rich countries is more than offset by the ecological debt owed by the rich countries to the poor' (Simms 2005 as quotes in Padel and Das, 2010). Accordingly the environmental movements of the third world are characterized as a resistance against the colonial and neoliberal attempts to "incorporate the third-world people's and environments into a first world-dominated global system of capitalist production in a process in which millions of livelihoods were transformed often for the worse" (Bryant, 1998).

Historically looking, the very genesis of environmental movements in India dates back to the colonial periods as a contestation with the colonial onslaught to the local ecology. The processes of contestation over the local ecology have continued in the post-colonial period as well, as the political decolonization did not fulfill the ecological de-colonization

processes. This contestation further intensified in the post-1990's with the unfurling of the neoliberal global order into the (de)colonized third world. As it is no longer necessary to transform a stagnant peasant agriculture to create the surpluses for capitalist industrialization in poor countries, the contemporary land grabs represented a renewed attempts of an ascendant finance capital to control the land and natural resources of the global South (Patnnaik, 2011). Thus, the global land grab becomes the central cause of the third world's ecological movement today. Though the processes of land grab was not a new phenomenon, the land grab/acquisition was there even under the post-colonial development state's regime as well. But as noted by Levien "whereas the developmentalist regime of dispossession for state-led projects of productive industrial transformation had significant legitimacy in the Nehruvian era, as people were asked to sacrifice for the greater good of "the nation," the neoliberal regime of dispossession, in which the state has become a mere land broker for increasingly real estate-driven private capital, is proving much less persuasive" (2013: 361). Hence, the processes of land dispossession became a field of intensive political debate and a theme for everyday resistance by the people of the "developing" and "under-developed" south. These currents of popular contestation over the land were guided by a commonsensical understanding that, "if land grabbing under colonialism was tragedy, it repeats now as farce" (McMichael, 2012: 681).

1.2 Statement of the Problem

When the global capitalism is moving from colonies to cultivable lands, the third world ecology is increasingly becoming a battlefield between the international/national capital and the indigenous communities/the locals. It is in this context that, the present study aims to look at the spatial organization of such localized resistances, as a manifestation of the issues of regional development, through the lenses of a vibrant ongoing movement by the people of the 'Dhinkia Charidesh ' against the proposed POSCO project, the 'largest FDI in India. This study attempts to characterize the ongoing (Anti-POSCO) movement as an environmental movement by its very 'nature' of being a resistance against dispossession. The theoretical basis of characterizing the anti-dispossession movements as the environmental movements has been drawn from the analytical framework of

political ecology thesis of the 'environmental identity and social movement', which "tries to look at how the political and social struggles are linked to basic issues of livelihood and environmental protection" (Robbins, 2004; p. 15). The study intends to critically look at how far the environmental movements are being initiated by consolidating an environmental identity vis-à-vis the processes of 'accumulation by dispossession', with the strong ideological elements against the threats of massive and sudden 'production (or change) of nature' under the capitalist ecological regimes (Smith, 1984). The entry point of our analysis is to locate the environmental movements as a collective action by the 'place based actors' against the 'non-place based actors', like the State or the Capital, and thus incorporates the question of ecology and equity in the regional analytical framework.

There were lot of such localized resistances across the country in general and in Odisha in particular, over the years. Their localized nature is sometimes celebrated as the 'localization strategies' of the subalterns (see Moore, 1998; Escobar, 2001) while generally being critiqued on the prospects of the potential victory those 'localization strategies' are having with especially in the neoliberal global context (see Harvey, 2003). The recent trends of the emergence of unified movements like the National Alliance of People's Movements[1], without dismantling the place character of these individual movements urge us to go beyond the existing theoretical extremism, towards an arena which give immense scope for the convergence of both of these frameworks to get a holistic understanding of the issue under question. Thus, these movements go beyond the realms of the local resistance to question the very paradigm of development by putting ecology and equity at the center, which are the basic tenants of (sustainable) development. In this context, it is very significant to strengthen the theoretical framework to understand the engagement of such local resistances to the extra local questions. In the existing theoretical arena, the scholars like Scott (1986, 1990, 2009) has tried to 'fill up those gaps left by the (macro) approaches of Marxists and even those of Dahrendorf and

[1] The National Alliance of People's Movements (NAPM) is an alliance of progressive people's organisations and movements, who while retaining their autonomous identities, are working together to bring the struggle for primacy of rights of communities over natural resources, conservation and governance, decentralised democratic development and towards a just, sustainable and egalitarian society in the true spirit of globalism". It was started as a process in 1992 as a reaction of the civil society to the Ayodhya incident and globalization spree. It has took a definite shape in 1996 after a long national tour of 15 states by its initial senior activists (for more details see http://napm-india.org/).

Eric Wolf, by showing how class consciousness and conflict are actually generated at initio and how they are perceived by the actors themselves'. But these theoretical frameworks are somewhere inadequate in bringing the question of space in the organization of those resistances. Thus the present study, with its all limitations, tries to reinvent them with the question of space and scale.

By going beyond the questions of how the consciousness for the resistance are created at the locale, we try to understand the role of socio-political idioms in determining the structure and organization of these movements, both spatially and temporally. Thus the relevance of the present study will be to develop an analytical framework, rooted in strong empirical findings, to understand the environmentalism of the global south in general and India in particular. Such a framework will take our discourses on ecology from the 'romantic persuasion of nature' and from a more abstract notions like 'environmentalism of the poor' to a more functionalist understanding, which could unearth the dynamics of relationship between the state, capital and the local context in 'politicizing' the third world's ecologies.

1.3 Overview of Literature

The mainstream ecological discourses in India are revolving around the confrontation between the 'concerns' for development and that for nature/environment. These 'concerns' are highly polarized into two spectrum of understandings in which one is purely 'technocratic' (scientific) while the other fall into the strands of 'deep ecology' point of view. Whereas the technocratic-scientific approach, what otherwise called as the 'Green Capitalism' argument, rests its faith in the panacea of market and technology in finding the solution or at least to give adequate signals about the issue (see Friedman, 2008; Giddens, 2008); the deep ecologists, on the other hand, sometimes even fall into the Malthusian traps, and argue for a conservationist approach towards the nature and go to the extent of a romanticized notion of 'go back to the nature' (see Carson, 1987). Though both of these 'dominant' discourses have brought the question of 'sustainable development' into the policy framework, did not pay any attention to the political and distributive issues of nature (or natural resources) and its impacts on the organization of social relations and the livelihood status. For both of these approaches, the environmental

movements are ‘conservationist movement’ envisioned to protect the environment from the domination of human beings. Whereas the technocratic approach criticizes such movements as ‘ecoterrorism’, the deep ecologists romanticize such movements based on a post-materialist understanding.

Vandana Shiva with her two seminal works has tried to further radicalize the deep ecology point of view from a third world feminist perspective (see Shiva, 1988; Mies and Shiva, 1993). For her environmental movements appears to be a political struggle by the women of the third world against the modern Western Patriarchy, which is being imposed in the name of science and development. According to her ‘the violence to nature is something intrinsic to the dominant developmental model, and it is also associated with violence to women as they are depended on nature for drawing their sustenance’ (Shiva, 1988). Thus, she identifies a unity and association between the women/ femininity and nature or what she calls ‘Prakriti, and it forms the basis of her thesis of eco-feminism. This often explicit equivalence between women and nature, which Shiva usually employs deserve severe criticism, as it makes a sense that all women are by definition conservationist, life-enhancing, and equity-seeking. Moving away from such a conservationist argument as put forth by Shiva, Agarwal has tried to make it more comprehensive, so as to encompass both the question of gender and class together. Thus according to her it is “the women of poor, rural households who are most adversely affected and who have participated actively in ecology movements” (Agarwal, 1992). The alternative approach suggested by the (feminist) environmentalism, for her, should be transformational, where development, redistribution, and ecology link in mutually regenerative ways. It questions the political economy of the conceptualization of gender relations, and relations between people and the non-human world and their concretization in terms of the distribution of property, power, and knowledge, and in the formulation of development policies and programs (Agarwal, 1992: 1997).

The “critical environmentalist” like Ramachandra Guha has further radicalized the discourses on Indian environmentalism by characterizing it as the ‘environmentalism of the poor’ (Guha and Martinez-Alier, 1998; Guha, 2000; Martinez-Alier, 2002). Thus according to him the environmentalism in India “manifest with a far greater emphasis on

equity and the integration of ecological concern with livelihood and work" (Guha, 1989 a). The scholars from the critical environment school, thus, asserted that, "the conservation of natural capital cannot be separated from some key distributional questions" (Redclift, 2006) and has brought the question of 'justice' into the center of environmental debates. It has to be noted that though the 'critical environmentalists' generally agree upon the epistemological question of the character of the environmental movements in India as the 'contests between two versions of economy- 'the political economy of profit' and 'moral economy of need'' (Baviskar, 1995 as quoted in Rout, 2009), but they show a high degree of differences among themselves with respect to their ontological position in looking at these movements.

Harvey (1996) and Smith (1984) in their best intellectual capacity has tried to give a theoretical framework to understand the environmental question under the capitalist world regime, by placing space at the core. With their strong roots in the Marxists intellectual traditions, they tried to develop 'the geography of politics and the politics of geography' (in the words of Smith, 1984) to understand the geography of the political economy of the capitalism. With an urge to address the political question of 'how the geographical configuration of the landscape contributes to the survival of capitalism', they theorized the processes of production of nature and space under capitalism. Thus for Smith, 'uneven development is not an outcome of the capitalist development rather is a necessary condition of capitalism'. By taking the intellectual inspiration from Harvey and Smith, Moore (2011) even went to a level further to characterize the capitalism itself as the "world ecology". Though the attempts to bring the space into the focus of the analysis has been appreciated, this kind of 'Marxist reductionism' by Smith is being critiqued by many scholars for its inadequacy in looking at the production of nature and the geography of unevenness under socialism (D M Smith, 1986). Thus he goes to argue that "the experience of socialism has to be brought into a rigorous relationship with the emerging theory of uneven development under capitalism", and which is what seriously missing in both Harvey and Smith's frameworks. Though both liberates the concepts of space and nature from the 'bourgeois ideologies' of 'external' and 'universal container', due to their methodological orthodoxy they do fall into the level of reducing the conception and function of space and nature to mere Marxist principles (Sack, 1987).

Though Harvey (1996) has attempted to address the ‘difficulty of turning what Raymond Williams has referred to as `militant particularism' of localized protest into a radical politics with global ambition’ (as observed by Smith, 1997), the lack of the empirical insights from the case studies confine his arguments into a mere abstraction without much conviction. But Wolf (1969) moves out of such orthodoxies and based on a detailed case study of about six revolutions and rebellions of the twentieth century, he pointed out that “the tension which gave rise to them all had their roots in the past”, not in terms of abstract categories such as tradition versus modernity “but in terms of concrete historical experience which lives on in the present and continues to determine its shape and meaning”. He makes it further clear:

“in all our six cases this historical experience constitutes, in turn, the precipitate in the present of a great overriding cultural phenomenon, the worldwide spread and diffusion of a particular cultural system, that of North Atlantic capitalism. This cultural system- with its distinctive economics- possesses its own distinctive history of development with in a distinctive geographical area” (Wolf, 1969: 276).

Thus for Wolf the origin of this movements rests at the people’s dissatisfaction about the capitalist system of social and economic organization and the degree of alienation, as Marx argued, that they are facing from such a system over the years. But he strongly disagrees with the Marxists orthodoxy that ‘the peasant without outside leadership cannot make revolution’ (as one can see in Hobsbawm, 1959). And he argued that,

“the peasant rise to redress wrong; but the inequities against which they rebel are but in turn, parochial manifestations of great social dislocations. Thus rebellion issues easily into revolution, massive movements to transform the social structure as a whole. The battle field becomes the society itself, and when the war is over the society will have changed and the peasantry with it” (1969: 301).

Thus for Wolf, the peasant rebellions begins as an anarchist reaction against the “major social dislocations”, which they face while encountering the “North Atlantic capitalism”, but this movements turns to become a revolutionary struggle with the further politicization and militarization, where the vanguard parties or the external actor or the

intelligentsia has a greater role. In India, the ‘middle-class intellectuals’ have been considered as the vanguards of such uprisings for ‘leading the local people to articulate their ideology and organize vibrant protests’ (Rout, 2009).

Baviskar (1995) is very critical of this vanguard of Indian environmentalism for 'appropriating' a specific struggle waged by a tribal community in a generalized battle of environmentalism both in a theoretical and practical sense. Thus she critiqued the NBA (Narmada Bachao Andolan) and the Urban Environmental intellectuals for the “neglect of history”, that the “people have always fought against outside oppression, on their own terms. Their history of resistance long precedes the history of development” (Baviskar, 1995: 241). Thus according to her, both the Adivasis and the patidars/upper caste Hindus of the plains (the two constituents of the NBA) have been appropriated by an urban middle class environmentalists' movement, though neither of them present ‘role-models for the ideology promoted by the NBA as part of its critique of the state's development policies’.

With the empirical evidence from the Chipko movement of the Uttarakhand Himalaya, Guha (1989 b) further validates these arguments by clearly stating the ‘dual characteristics’ of people’s movement; “in private it is a peasant resistance” against their alienation and the coming in of commercial forestry, but “in public it is an ecological movement” against the ecological changes that the commercialization has brought about. The historical experience from the success of this movement make him to (strongly) conclude that this popular uprising has an agency in itself rather getting injected from outside (Guha, 1989 b). But for Harvey (1996) even such inference by Guha is falling into the traps of the ‘default environmentalism’ of the locals, which views ‘the indigenous groups were and continued to be somehow “closer to nature” than we are’.

Thus from a broader perspective it can be understood that, the third world environmentalism is a resistance (and continued to be) against the colonial and neoliberal attempts to “incorporate the third-world peoples and environments into a first world-dominated global system of capitalist production in a process in which millions of livelihoods were transformed often for the worse” (Bryant, 1998). Levien (2013) characterizes the India’s proliferating land wars of the contemporary periods as “a

consequence of a neoliberal regime of dispossession that lacks the ideological legitimacy of its predecessor". Though "the ultimate political direction of these movements is varied and their ability to articulate compelling and viable alternatives remains uncertain", for Levien, after all these movements are the 'intervention of the peasants in history' shaped by the processes of 'accumulation by dispossession' (Levien, 2013).

Mishra (2011) makes it more comprehensive by stating that though the state power is becoming an essential element of this processes as the national and the State governments are competing among themselves to attract the foreign and domestic capital through "liberal concession", the "local economic and political processes such as peasant differentiation, agrarian distress, seasonal food and employment insecurity, social and spatial concentration of poverty, capture of the local state by a rentier elite, remain significant in explaining the specific dynamics of land grabbing (in contemporary Orissa)" (Mishra, 2011). Thus for him, the "global land grabbing as a process needs to be understood in relation to the dynamics of capitalist transition in local contexts", where the local capitalist acquires land by using state apparatus while the "overriding logic of global capitalism serves as a context in which some claims over land are privileged over others".

It is from this terrain of debates, focused on the 'nature' of environmental movements with respect to the question of their scale vis-à-vis the internal dynamics, we are going to look at one of the vibrant movement of the contemporary periods. Thus, this study proposes to locate the ongoing Anti-POSCO movement in Odisha's Jagatsinghpur district as (such) an 'environmental movement' by its very 'nature' as a movement against dispossession. Thus the central questions that this study tries to address are:

1.4 Research Questions:

1. How does the anti-POSCO movement fit into the historical terrain of environmental movements in India?
2. How far the regional experiences of the people's incorporation into the mainstream developmental paradigm equipped a terrain for the popular resistance like the anti-POSCO Movement?

3. How has the resistance of the people against the POSCO project evolved as a movement over a period of time and what are the factors responsible for it? And how it has been spatially organized?

1.5 Objectives and Methodology

Sl. No	Objectives	Methodology
1.	To locate the ongoing anti-POSCO movement in the backdrop of the history of environmental movements in India	With the help of **secondary sources/literature,** we will try to trace out the history of the environmental movements in India and in the state of Odisha and mapping them with respect to the major resources under question and the nature of the State; scale of the movement and dominant ideologies; and the nature of dispossession vis-à-vis the nature of the movement. Subsequently superimposing this map of environmental movements on the maps depicting the forest cover and agricultural productivity of India, so as to characterize the environmental movements and then to contextualize the Anti POSCO movement in this framework.
2.	To Characterizes the region of Odisha with respect to the people's interaction with the local environment and the regional experiences of the people's incorporation into the mainstream developmental paradigm.	This will be done by empirically looking at the changes in the land-use pattern in the State to analyze the land dependence of the local/regional economy and to characterize the nature of developmental paradigms at the grounds. The employment situation across various sectors of economy vis-à-vis their share in the economic growth of the region would be looked at to understand the importance of the primary sectors. This would be contrasted with the land-use pattern to characterize the nature of regional incorporation in the larger developmental narratives. This will enable us to contextualize the ongoing anti-POSCO movement in the

		backdrop of the contentions in the inability of the 'de'-colonization and neoliberal strategies in meeting the 'popular expectations' of the region and thus centering labour in the environmental discourses.
3.	To trace the historical evolution of the anti-POSCO movement over time and the way it has been spatially organized.	Through the empirical evidence drawn from the **field survey and the analysis of newspaper reports** and other relevant documents, the historical course of this movement will be traced. Based on the field explorations at various location related to the project, The spatial dimension in the organization of the movement and their internal dynamics.

1.6 Data Base

In order to make our theoretical arguments more concrete and get greater conviction, it has to be footed in empirical evidences. Thus the present research work is necessarily an empirical one, based on the data drawn from a primary field survey.

- Primary survey: For the study of this nature there are hardly any secondary source that can be relied on, and therefore a primary field survey was undertaken. The primary field survey covered three Grama Panchayaths of of Erasama block, KujangTahsil of Jagatsinghpur Districts in Odisha, where the people's movements against the POSCO project is highly vibrant, and a brief visit to Badhabhuin village, on the foot of Khandadhar Hills in the Sundergarh District of Odisha, where the mining project for the POSCO is being proposed. The plant project is going to affect around 8 villages of three Gram Panchayats namely Dhinkia, Gobindpur (Dhinkia Gram Punchayat), Nuagan, Jatadhar (Nuagaon Gram Punchayat), Noliasahi, Bhunyapal, Polanga and Bayanalkandha (Gadakujang Gram Punchayat); Dhinkia, Gobindpur and Patana villages are acting as the epicenters of the people's movement. The survey has also covered the areas like Transit camp, Badagobapur, Erasama, Jagatsinghpur, where those people have

moved from the Patana Hamlet of Dhinkia village are being rehabilitated by POSCO.

- Documents of the State and the Central government, various other organizations involved in the movement.
- Newspaper reports from the National News Paper such as The Hindu, Times of India, The Indian Express, etc.
- Secondary data sources like NSSO Employment and Unemployment Survey 50th and 68th Round has been used to understand the employment situation of the region. The Census of India 2011; Land use statistics by Directorate of Economics and Statistics, Ministry of Agriculture; GDP from National Accounts Statistics, CSO, and GSDP data from Economic Survey of Odisha 2013-14 by the Government of Odisha; Forest cover data from the India State of Forest Report by the Ministry of Environment and Forestry, district wise agricultural productivity statistics from secondary literature by Bhalla G.S and G. Singh (2012). Economic Liberalization and Indian Agriculture: A District-Level Study. New Delhi: Sage Publications; and various other government publication has been used wherever necessary to substantiate the argument.

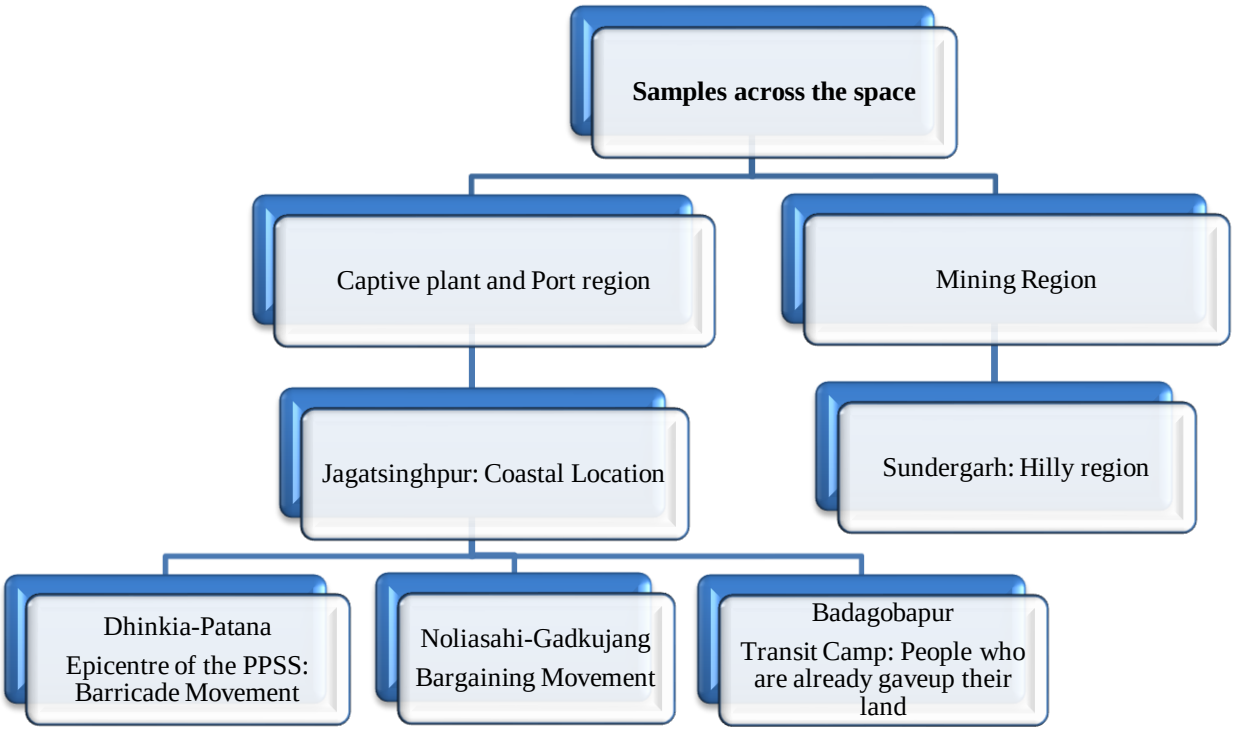
1.6.1 Methods of Field Survey

The method of semi-structured in-depth interview has been resorted to collect the data from the field. In-depth interviewing involves the repeated face to face encounters between the researcher and informants. The interview schedule used for the purpose consists of both the open ended and close ended questions, with respect to the nature of the information sought. One can challenge this method on the ground that the quality of data under interview methods is depends upon the quality of the interaction and quality of interviewer. It was ensured in this case that the same interviewer conducted all the interviews to maintain parity across the respondents.

1.6.1.A. Sampling Design

The samples for the study are drawn through the technique of snowball sampling[2]. The snowball sampling involves the identification of one person who qualifies to participate in the survey, and then ask him or her to recommend several other people who have the knowledge/traits we are looking for, and participant list can grow from there. This use of snowballing is a type of purposive sampling and it is thus a non-probability sampling method. One of the major challenge involved here is that this method would hardly lead to representative samples, but for this study in order to meet the requirements of representation, we have chosen the samples from different locations which are variably related to the phenomenon under study. This will enable us to bring the spatial dimensions of the phenomenon under question into the prominence. Fig 1 (A) shows the design of the sampling across the space:

Figure 1 (A): Sampling Design



1.7 Analytical Framework of Political Ecology

[2] As the present study involves a theoretical engagement with the discourses on environmental movements in India, by drawing arguments from strong empirical evidence, we have resorted for a deductive methodology in the study. In order to make the empirical evidences more systematic, the techniques of sampling has been used to choose the subject for analysis (for more detailed discussion of sampling in qualitative research see Marshal, 1996).

The political ecology framework has been evolved as a reaction against the dominant 'apolitical' (ecology) interpretation of ecological processes and patterns with certain 'implicit political goals'. The political ecology approach, thus, has tried to go beyond the ecological processes and patterns with an understanding that it is not just physical properties and processes make the things as they see, . Ecology has been understood beyond something as given, to something as a political project all together. This study understands the changes in nature whereby the agency of human beings are neither destructors nor constructors of nature as argued in the dominant discourses, but is being considered as 'producer of nature' along with all other condition (Smith, 1984). Nevertheless the theoretical framework of political ecology is drawn from a very understanding that 'environmental changes and ecological conditions are the products of a political process, and as an academic discipline it goes to understand this process in its complexities of scales' (Robbins, 2004).

The political ecology as a theoretical paradigm look at the 'Green discourses' from a critical point of view, let me say from a 'Red angle', which involves three fundamentally linked assumptions while approaching any research problem. Accordingly the Political ecologists: "accept the idea that the costs and benefits associated with environmental changes are for the most part distributed among actors unequally… [which inevitably] reinforces or reduces existing social and economic inequalities… [which holds] political implications in terms of the altered power of actors in relation to other actors" (Bryant and Bailey 1997, pp. 28-9, as quoted in Robbins, 2004, pp. 11). In spite of its 'chaotic nature' as its proponents themselves committed, its research agenda can be broadly attributed into four theses as noted by Robbins (2004, pp. 14-15):

1. The degradation and marginalization thesis: It tries to explain the environmental changes with regard to two principle question "why" and "how"? Thus, it put the questions like land degradation in its larger political and economic context.
2. The environmental conflict thesis tries to look at the question of environmental access and thus argue that the environmental conflicts are part of larger gendered, classed, and raced struggles and vice versa.

3. The conservation and control thesis addresses the political economy of conservation consensus and the question of exclusion involved in it.
4. The environmental identity and social movement thesis tries to look at how the political and social struggles are linked to basic issues of livelihood and environmental protection.

The scope of present study is restricted to the fourth thesis of political ecology, which enables us to look at the emergence of an environmental identity to resist the appropriation of local ecologies by the powerful state and the capital in the neoliberal ages. In order to understand such movements and their genesis and implication in a neoliberal global order, one needs to move beyond a mere romance of the local communities, that one can see in the 'moral economy' framework of Scott (1976, 1986) and the 'subaltern postcolonial' framework of Ranajit Guha (see Chakrabarty, 2005; Chibber, 2013) towards strong political ecology framework critically rooted in the radical political economy tradition. Therefore it would be passionate if one could compile the Subalternists' frameworks of micro-politics with the Smith's framework of 'production of nature', and thus to locate the popular resistance against the alienation from the production of nature in the historical geography of capitalist accumulation.

1.7.1 Towards a Theoretical Framework: Understanding the 'Anti-dispossession'/Environmental Movements in Neo-liberal India

The environmentalism in India or the "environmentalism of the poor" (Guha, 1988), as it is widely acknowledged, is more of a [class] struggle over subsistence rights. These movements are anti-dispossession struggles in their very genesis and content. The peasantry/the rural folk forms the base of these movements and are originated as a reaction against the 'innumerable forms of dispossession of private and common wealth', what Harvey (2003) has termed, the processes of "accumulation by dispossession'. From the classical Marxian understanding the accumulation by dispossession was something peculiar to the primary stages of capitalist transition, and therefore it was the primitive accumulation for Marx (2007). But the neoliberal global order is experienced with the continuation of this processes to serve the everlasting need for accumulation. Thus what we have been witnessing is a co-existence of both the 'accumulation by dispossession'

and the 'accumulation by expansion'. The terrains of popular resistance is also very complex with two set of movement one targeting the accumulation by expansion under the banner of trade union movement, while the other questioning the accumulation by dispossession without any unified platform so far. According to Levien:

> "In many parts of the world, labor struggles have been overshadowed by social movements, insurgencies, and resistances that do not originate from the proletariat-strictly speaking-and that are fighting not exploitation but innumerable forms of dispossession of private and common wealth: what Harvey has called "accumulation by dispossession. Rural land has become a major locus of such dispossession in many developing countries, bringing the state and metropolitan capitalists into direct confrontation with rural agriculturalists" (2013; 352).

Thus it is the processes of accumulation by dispossession which shape the movement not the exploitation of the surplus value as the case with the labour union movement, which makes this movements something beyond the frameworks of conventional class struggles. As an explanatory to this Levien continue to argue that:

> "Dispossession indiscriminately expropriates those with any interest in the immovable assets of a particular geographic space. It consequently creates political struggles that are inherently cross-class, but that take their specific shape from local class structures. While the process of labor exploitation produces classes, dispossession cuts across already formed ones. Thus, without understating the internal diversity of labor on multiple axes, anti-dispossession movements arguably contain more divergent and more contradictory class positions than labor unions, whose participants by definition share some similar relationship to the means of production. There are few differences among workers that would approximate that between a large landlord and his tenant, or a capitalist farmer and the semi-proletarianized farmer-laborer who works for him, all of whom may be on the same side of a dispossession struggle. This unavoidably cross-class character of anti-dispossession movements is what accounts for, in Harvey's words, their "inchoate" and "contradictory" appearance… it creates challenges to forging anti-dispossession movements within particular localities and in building alliances across them" (2013: 370).

But that doesn't mean that these movements do not engage in class struggle, rather Levien argued that as a matter of prioritizing the immediately threatening class antagonisms based on the dispossession of land (between agriculturalists as a whole and capitalist firms), the people usually de-emphasize ongoing class antagonisms based on exploitation (within the agrarian class structure) for the time being. Thus it is because of

the very nature of the processes of accumulation by dispossession, which refracted in different localities through different agrarian social structures and political histories, and it creates movements with different goals. Where the local landscape cannot be conceived as a static backdrop or stage for historical struggles, rather as an agent which can produces locality and identity through a complex cultural politics of place (Moore, 1993; 1998). Thus this politics of place make the anti-dispossession resistance as a distinct 'class struggle', or what otherwise called 'a politics of class, but not on behalf of a class' (Offe, 1987 as quoted in Scott. A, 1990: 139). The class consciousness and identity for the agents towards a collective action, at the local level, against the dispossession has been attributed by the agent's association with the place (Moore, 1993, 1998; Levien, 2013). Thus the environmental movements of the Third World in general and the anti-dispossession movements in particular has to be understood as the place based class struggles, which involves the conflict between the 'place based actors' like the peasants, tenets etc., on one hand and the 'non-place based actors', like the State, MNCs, etc., on the other.

For Levien the kind of politics created by the processes of land dispossession is not only distinct from labor politics, but also from various other forms of peasant politics that have been otherwise theorized in the social sciences over the years (2013). But for him it is the nature of dispossession itself shapes the character of anti-dispossession movements with respect to their: 1) targets; 2) strategy and tactics; 3) political organization; 4) social composition; 5) goals; and 6) ideologies, and other factors such as the socio-economic structure of the locality and the popular historical narratives of the place are secondary to it. Such an understanding is somewhat reductionist in nature. It is true that the dispossession as a distinct form of production of nature may provoke for a collective defiance as these massive and sudden changes decisively destroy nearly all the routines of daily life and threaten the livelihood of much of the population. But the place oriented framework of political ecology enable us to see the differences in the ways of popular reactions against the dispossessions are being manifested over time. The organization of movements like barricade versus the bargaining movements are not merely controlled by the nature of the dispossession alone, rather it is being structured by the local dynamism evolved through an interaction between the local context, the state and the capital.

It is true that the massive and sudden change that dispossession epitomizes make these movements against such ‘enclosure’ more explosive and rapid in nature. Though the mechanism of compensation and overwhelming support for the projects can be used to subvert the peasant resistance and to insist them for a class compromise, it is the “structural significance” of land as a resources to the region's political economy has a significant role in deciding the extend of contestations (Spronk and Webber, 2007). Thus, Land with its cultural significance and its mainly ‘zero-sum nature', the dispossession presents the unwilling farmer with a singular opportunity to save his or her land.

Thus a framework looking at the anti-dispossession movement should be comprehensive enough to analyze the processes and nature of dispossession along with the socio-economic structure of the people and the politics of place vis-à-vis the structural significance of resource involved. Because ‘when accumulation by dispossession becomes refracted in different localities through various agrarian social structures and political histories, it creates movements with different goals’ (Levien, 2013: 375). Thus it is not just whether the ‘militant particularism’ is a challenge in forging more universalistic political programs as argued by Harvey (2003) rather it is more important to understand the historical location of the people and place in the geography of capitalist accumulation processes. It has to be noted that while these micro-politics and their historical sedimentations in a particular locality is highly localized, they are not incarcerated in place, sealed off from an outside beyond. There are always certain kind of translocal linkages across the place, which underscore the "accumulated history of a place, with that history itself imagined as the product of layer upon layer of different sets of linkages, both local and to the wider world" (Massey, 1994 b: 156). Thus the struggles that were specifically localized were never simply local, always connected to the cultural formation and political legacies of anticolonial situation/resistance, perception of nationalism, and the contested legitimacy of the postcolonial state’ (adapted from Moore, 1998: 369).

Thus the analytical framework for the political ecology of environmental movement of the neoliberal Third World should tries to capture the processes of the formation of an

environmental identity vis-à-vis the processes of accumulation by dispossession, an engagement of the neoliberal capitalism in the "post"-colonial third world. The anti-dispossession movements are the contemporary forms of environmental movements in India with the high ideological elements against the threat of massive and sudden change/production of nature, by the processes of accumulation by dispossession. The politics against this dispossession regime cannot always be looked through the lenses of the traditional class war as a "frontal attack" while it is becoming more of "war of position" over time (Gramsci, 2007). Because the criterion of social movement's success may not be the total social transformation as such, rather would be its ability in integrating the issue and groups into the larger polity and discourses (Scott. A,1990).

The present study, thus, borrow its analytical framework from the "environmental identity and social movement thesis" of the Political Ecology, to look at the emergence of an environmental identity vis-à-vis the appropriation of local ecologies by the powerful state and the capital in the neoliberal ages through the processes of accumulation by dispossession. This environmental identity is not a universal phenomenon as the class identity constructed by the processes of accumulation by expansion, rather it is highly place specific and actor oriented. Where the environmental identity and the agency for a social movement among the place based actors like the local peasantry are attributed by their interaction with the local environment on hand and the interaction with the non-place based actors like the state and the capital on the other.

In a remarkable study of Adduci (2009) looking at the Chilka Lake movement in Odisha, we can see the emergence of a unity among the place based actor, the local traditional fisher folks, against the commercial shrimp cultivation. That unity and consciousness against the new production regime got undermined latter with the penetration of the agents of the state and capital in the local terrains. In the present study also we can see such verities of organization across the space with respect to their approach towards the upcoming new production regime. Therefore we resort to approach the political ecology from a place based perspective as it sophisticate the analysis not merely seeing the resistance as a 'spatial practice', rather being structured by the interaction between the local context and the place based actors like the peasantry on one hand and non-place

based actors like the state and the capital on the other. Thus there is an element of scale involved in it, where the contexts and the resistance are specific to the terrain of local, while the processes are structured by the larger dynamics of capital. Because it is the overriding logic of global capitalism creates the context in which some claims over land are privileged over others and thus furnishing a terrain for resistance in the local. Therefore it would be highly significant to look at the localized resistance with respect to their horizontal and vertical spatial organization and strategies involved in, and their potential in countering the trans-local challenges.

The proposition that we put forth from this analytical framework for the further analysis can be summarized as follows. Thus we propose that the production of nature by the capitalist global order, involves the extraction/accumulation by extra-economic means, attributes certain identities to actors at the locale. At initio, these identity is largely of being 'displaced' or 'de-peasantised', but the future direction to which it proceeds and the potential for the genesis of a social movement is fundamentally decided by the local political conditions structured by the interplay of the local context, the state and capital.

Thus the present study uses this theoretical understanding to look at the ongoing anti-POSCO movement as an epitome of the environmental movements of the neoliberal India. And thus I will try to locate the verities of resistances by the people of 'Dhinkia Charidesh' in the terrain of capitalist production of nature and space while tracing the popular movement with respect to their: 1) targets; 2) strategy and tactics; 3) political organization; 4) social composition; 5) goals; 6) ideologies; and 7) spatial organization.

1.8 Organization of the Study

The study has been divided into five chapters:

The second chapter analyses the historical geography of environmental movements in India during the post-colonial period. It critically analyses the environmentalism in India over years under two dominant phases with respect to their ideological underpinnings and nature of resources involved. We further proceed to find out the typologies of these resistances with respect to the resources over which they have been fought (land water forest etc.), nature of activity due to which it was taken over or proposed to be so

(infrastructure, mining activities, industry, real estate, economic complexes like SEZs etc.), nature of resistances (barrier or negotiation).

The third chapter tries to characterize the region, Odisha, in the dominant developmental narratives of India. By empirically looking at the regional experiences of the growth trajectories with respect to the land use dynamics and the employment situation we contextualize the scope for the emergence of an environmental movement like anti-POSCO movement in the political terrains of Odisha.

In the fourth chapter, the Anti-POSCO movement has been explored as a case study, by tracing the historical evolution of this movement and the various factors responsible for it. Based on the empirical evidence drawn from the field survey the chapter tries to exposes the spatial organization of the movement.

The last chapter has been devoted to sum up the major results and the arguments of the entire study and thus to re-define the environmental movements of India beyond the prevailing framework of 'environmentalism of the poor', thus to place it in the geography of capitalist accumulation.

Chapter 2

Environmental Movement in India: A Historical-Geography Perspective

"…the environment in South Asia needs to be understood as a contested space, a site of conflict and confrontation- but also a place of fight and evasion- between competing economic activities and between the social groups dependent upon them." (Arnold and Guha, 1995: 15-16)

2.1 Introduction

The 'popular movements' of the 'third world', including those of India, have challenged the dominant world view, that consider the nature and human livelihoods, to be a "factor" in the working of capital, at best, and as impediments to "development", at the worst. Thus, these movements have brought some fundamental questions like 'the real costs of development, the directions of growth and the values of modern science and technology' into the mainstream academic and policy discourses. The "environment-ness" of these popular movements had been a matter for debate in the public discourses, thus some of the movements were negated the status of 'environmental movements' while some got renowned well (Prasad, 2005). A historical engagement with the popular resistance over

the question of natural resources has to go beyond the questions of 'what is an environmental movement' to analytically look at 'who decides what is an environmental problem' and thus the environmental movement (Andharia and Sengupta, 1998). It is the hegemony of knowledge system that decides which one a 'legitimate' environmental movement is and which is not. This dominant trends in the international academia to characterize the post-1970's history with some 'newness'. This 'newness' syndrome in the academic discourses has largely been attributed by the emergence of popular environmental movements in our 'serious scholarly discourses', and thus the emergence of the 'new social movement' in our academic vocabulary.

This academic business of characterizing these movement as something 'new' has to be looked at from a very skeptical perspective, as this characterizing can serve certain political and ideological projects of 'ahistoricizing' the academic discourses by detaching the historicity of human struggles from a historical terrain of resistance against capitalism, colonialism, patriarchy, caste system etc., and thus branding these struggles and movement as something "new". Thus the struggles of the peasants against the colonial exploitations, the resistance of the tenants against the landlords, the struggles of the industrial workers for better working conditions and minimum wages have to be put into those old boxes, since they are not 'environmental movement' as the question they raised were not 'environmental problems' per se. Though the well referred Brundtland Report of 1987, the 'Magna Carta' of modern environmentalism, has clearly stated that 'poverty, resource depletion, and environmental stress arises from disparities in economic and political power', the political and academic historiographies were very much reluctant in appreciating the trade union movement or the industrial working class resistances, or even the peasant's resistances, with this legitimate attribute of "environmentalism". Thus, they were trying to keep the question of environment and sustainability away from the key distributional questions these movements were talking about. Thus the movements for better housing by the urban slum dwellers cannot be a legitimate environmental movement, rather it can be placed as something 'antithetical' to the environmentalism, as their demand involve the 'destruction of nature' when the new buildings are being constructed. The epistemological basis of such an understanding is rooted in a binary division of human and nature, thus counterposing one to other. This

methodological reductionism has largely affected the chances for further radicalizing both these movement and keeping them partisan in nature. So even Harvey can get confused to take a position between whether to support the protesting auto-workers of the Oxford Rover plant, or should stand for the closer of plant to adjust the automobile production in the context of over capacity world-wide and thus being sensitive to the ecological sustainability (1996). This methodological rigidities and lack of dialectical engagement with the issue has reduced our archives of the environmental movements into a few selected struggles of the post-1970's period.

It is from this very limited historical terrain of Indian environmentalism; this chapter attempts to review the status of the environmental movement in India with respect to their historical-geography dimensions. The chapter begins with an effort to define the environmental movement in India beyond the existing theoretical abstractions of 'environmentalism of the poor', by empirically characterizing the 'environment-ness' of these movements. Then the following section makes a critical engagement with the typology of the environmental movement in India. A typology based on movement categories provides a pointer to the diversity of organizations, issues and ideology that contribute to environmental movement in the country. The final section looks at the ideological embedded-ness of these movements as it decides their future courses. The effort is to characterize the environmental movement in India with respect to their underlying ecological and social concerns, and political convictions.

2.2 Defining the Environmental Movements

The possibility of having a universal definition of the environmental movement has been contradicted and questioned by the scholars over time. As the environmentalism encompasses the ideological underpinnings across a vivid material and political contexts, ranging from the slogans of 'earth first' and 'unspoilt wilderness' by the radical Western environmentalism, to the life and livelihood concerns of the global south, which are very much opposite in their epistemological understanding itself and are still being united by an umbrella of environmentalism. The environmental movement is, thus 'an umbrella term used to describe a series of struggles and conflicts at different geographical levels that highlight issues of livelihood and ecological security in the developmental debate'

(Prasad, 2005: 11). Thus 'broadly speaking, the theme of the human-nature relationship is central to environmental movement' (Shah, 2004). According to Guha and Gadgil, the environmental movements are 'organized social activity consciously directed towards promoting sustainable use of natural resources, halting environmental degradation or bringing about environmental restoration' (1998: 455). They have identified 'a wide diversity of environmental movement involving members of one or more of three categories of omnivores, ecosystem people and ecological refugees' (1995: 98). As per their methodology, the 'omnivores' represent the class of industrialists, and they are concerned with the expansion of their control over nature for enhancing the profit. In this attempt to dominate the nature it is not only the nature but also the people who are depended on it for their everyday bread and butter, the ecosystem people, are also turns to become their enemies. This processes of conflict between the profit maximizing 'omnivores' on one hand and the survival seeking ecosystem people on the other, results in the social production of ecological refugees, as the powerless ecosystem people mostly loses this battle with former.

The abstraction of the people into three broad categories in their general relation to nature somehow involves an oversimplification of the fact and it in a way hides the larger power dynamics involved in the processes. It is not merely the control over nature that lies at the core of the conflict, rather the question of production and reproduction of nature itself plays the role. The production of nature is different from the notion of control, and the latter involves change in the state of nature. The production process is quite deliberate, and its immediate goal is nothing but the profit. This is being reckoned in terms of exchange-value not use-value, as one may characterize for the industrial capitalism in general. Thus, the real question involved in the environmentalism of the global south would be of twofold: 'how we produce' and 'who controls this production of nature'. Therefore, the environmental movements have to be seen from a more broad perspective as a struggle for 'social control over the production of nature' (Smith, 1984).

2.2.1 Historical Roots of Environmental Movement in India

The environmental movement in India has emerged as a response to a wide spectrum of struggles and conflicts over the use of natural resources and the issues of social justice or

human rights (Andharia and Sengupta, 1998). The historical geneses of the environmental conflicts are nothing but the confrontation of various 'modes of resource use' and those confrontations are very much inevitable to the history of humankind. India as a landmass of larger diversities; encompasses 'the Stone-Age hunter-gatherers of the Andamans and white-collar babus of Delhi, nomadic shepherds of Himachal Pradesh and pavement dwellers of Calcutta, artisanal fisherfolk of Tamil Nadu and purse seine operators of Goa, shifting cultivators of Mizoram and sugar barons of Maharashtra, textile mill owners of Coimbatore and software exporters of Bangalore, fuelwood head loaders of Kumaon and engineers drilling the Bombay High for offshore oil' (Gadgil and Guha, 1995: 3); is inherently prone to such conflicts. Thus, there have been a lot of such conflicts from the very historical pasts onwards. These movements were historically being located in those areas where different modes of resource use are in competition and contradiction.

It was during the colonial regimes under the Britishers, these movement got transformed into a larger movement with strong ideological base, shaped by a consciousness of 'being exploited' and thus being appreciated in the 'nationalists' discourses as anti-colonial resistances (Gadgil and Guha, 1992, 1995; Rangarajan and Sivaramakrishnan, 2011). It was because of the fact that, the very root of the colonialists' expansion was nothing but to find an adequate source of raw material for the starving industries in the homelands. Thus, the ecology of the new world was perceived as the zones for such exploitations to cater the appetites of the emerging Industrial Western Europe. The political economy of this resource colonialism is very well portrayed in the words of Gadgil and Guha:

> "The men presiding over the British Empire perched on chairs of Burma teak at tables of African mahagony, consuming Australian beef washed down with French and Italian wines. Their women were decked in Canadian furs and clothes of Egyptian cotton, dyed with Indian indigo, glittering with diamonds from South Africa and gold from Peru" (Gadgil and Guha, 1995: 9).

The political rule intended at the ecological and economic exploitation of the colonies were executed through a bureaucratic state system, which developed its policies to facilitate this processes. The land and forests became a commodity, something unheard of in the history of the subcontinent. This new mechanism of resource governance

unleashed by the colonizers increasingly involved the alienation of the natives from their traditional rights over the resources, and which enabled the sucking out of the surplus to their 'motherland'. The forests region of the subcontinent was the initial zones of conflicts, as the woods were the primary target of the colonialists for their starving industries at the homeland and for making the railway sleepers for further smoothening the penetration of exploitation into the remote areas. Where the gathering and settled cultivation and the industrial modes of resource use confronted with each other with their opposing perceptions of resource uses. The so-called Adivasi movements like the Santhal rebellion, Kurichia-Kurumba Revolt, The Munds Uprising, the Jharkhand movement, etc. are some of these movements, which got bit prominence in the mainstream historical narratives. The origin of these movements was nothing but the manifestation of the discontent of the local communities against the imperial masters' grant project of colonizing the natural resource wealth of the region. Since they are highly dependent on these resources for their everyday life and livelihood, the indigenous people of these localities were forced to take arms to fight against the plunder of their resources and consequent alienation, and thus to defend their lives and livelihoods.

It was from this terrain of alienation and contestation, the post-colonial political-ecology of India got subsequently emerged. It has to be remarkably noted that, the conditions of ecological history of India have maintained a historical continuity to the colonial ecological regimes, as the people are still forced to struggle against their democratic government to protect their basic rights to survive in their natural habitat with dignity and security. As stated by Gadgil and Guha, "the process of the intensification of resource use in independent India thus became the change of a bureaucratic apparatus inherited from the British" (1995: 15). Thus, the political independence has no way automatically attributed into an end to the prevailing ecological and resource colonialism. This has manifested in the historical continuity of these struggles like the revival of Jharkhand Movement, led by the tribal community of the southern Bihar against those experiences of alienation of the 'natives' from accessing their forests resources. The slogans like 'Sal means Jharkhand, Sagwan (Teak) means Bihar, captures this link between the economic and ecological exploitation of the area', where the colonial forest department is replaced by the 'democratic' Bihar state and its Forest department in the post-colonial era (Gadgil

and Guha, 1992: 221, the emphasis is mine). This is clearly visible across the length and breadth of the country over time, from the Chipko Movement of the Uttarakhand Himalayas in the north to the Koodamkulam Anti-Nuclear Movement of the Tamil Nadu coast in the south and from the anti-Lower Siang Dam Movement of Arunachal Pradesh in the East to the Kaladera anti-Coca Cola Movement of Rajasthan in the west. All these movements were nothing but the people's struggle for their very existence and survival in their habitat.

A close examination of these movement shows that, most of them are geographically concentrated in the tribal belts, stretching along the central India and the north-eastern part, as this regions represent the major trough of natural resources of the country. Most of these encroachments to the natural resources and the rural livelihoods were initiated by the national dream to become a 'developed welfare democratic republic', at the soonest. In order to build the 'modern temples' of Indian development, it was necessary that somebody has to bear the cost, since there is no free lunch in this world these costs got strategically 'displaced' into the 'jungles'. That is what one can see in the words of Jawaharlal Nehru, the first and the then prime minister of India, itself while addressing the villagers who were to be displaced by the Hirakud dam in 1948; "if you are to suffer, you should suffer in the interest of the country" (Roy, 1999). The 'ecological question' of India is, thus, historically rooted and geographically concentrated. It is not only confined to the tribal resistance of the forested terrains but also the right based movement like the peasant revolts across the country.

2.2.2 A Search for Ecology in 'Environmental Movement'

The environmental movements in the 'global south' or India are fundamentally different from the environmentalism of the 'north' with respect to their methodological understanding and ideological underpinnings. According to Guha, the radical environmentalism in the east tends to pay a greater emphasis on equity and social justice, on the grounds that in the absence of social regeneration environmental regeneration has very little chance of succeeding. Whereas the full stomach environmentalism of the West is highly concerned of the 'unspoilt' wilderness and scientific conservations (1989). Thus, the Indian variety of environmentalism is profoundly embedded in its unique

capacities of integrating the ecological concerns with the question of lives and livelihood options (Guha, 1989; Gadgil and Guha 1995, 1998). This framework has an epistemology rooted in a different understanding of human-nature relationship, which goes beyond the Cartesian binary logic of keeping the human in one box and nature to the other.

At their best scholarly efforts, Ramachandra Guha (1989) and Amita Baviskar (1995) have tried to expose these dual faces of Indian environmentalism. According to them, in public these movements may appear to be an environmental movement, but in private it is a peasant or tribal resistance. Thus, the Indian environmentalism is essentially an 'environmentalism of the poor', which is focused on the question of equity. One may ask why should we bother calling these movements as environmental movements, though they are legitimate in their private identity itself, as the livelihood resistance. The very root of these livelihood movements is the 'production of nature' in a particular manner that alienates a larger section of powerless population by concentrating the surplus values into the few powerful hands. Thus, one cannot delineate and restrict the ecological dimensions from that of social or economic, as 'all social projects are ecological projects and vice versa' (Harvey, 1996). This containment of the ecological dimensions of the popular movements of the global south by some methodological reductionism was intended to hide the ecological question of the social and economic relations of productions prevailing under the colonial and the post-colonial eras that these movements were challenging. It is not that these movements are irrelevant if they were not debated on their ecological merits, rather if one has tried to bring about their ecological dimensions into the public discourses, the kind of debates might be entirely different than what we have had over the years on it. But unfortunately, "the agrarian history of British India (and the remnants followed it) has focused almost exclusively on the social relations around land and conflicts over distribution of its produce to the neglect of the ecological context of agriculture- for example, fishing, forests, grazing land and irrigation- and of state intervention in these spheres" (Guha and Gadgil, 1989: 142, as quoted in Shah, 2004: 250).

Therefore, it is proposed here, that an empirical look at the ecological dimension of the environmental movement in India is in place by superimposing the map of environmental

movements on those of the forest cover and the agricultural productivity. This will enable us to further concretize our arguments of how far the ecological projects are social and political in nature and vice versa. Thus, I proceed with a preliminary hypothesis that the regions/districts reported with environmental movement in India widely coincide with the zone of ecological significance like the districts with the huge forest cover and high agricultural productivity. Along with cartographical methods, we use statistical techniques of T-test for validating the reslts further.

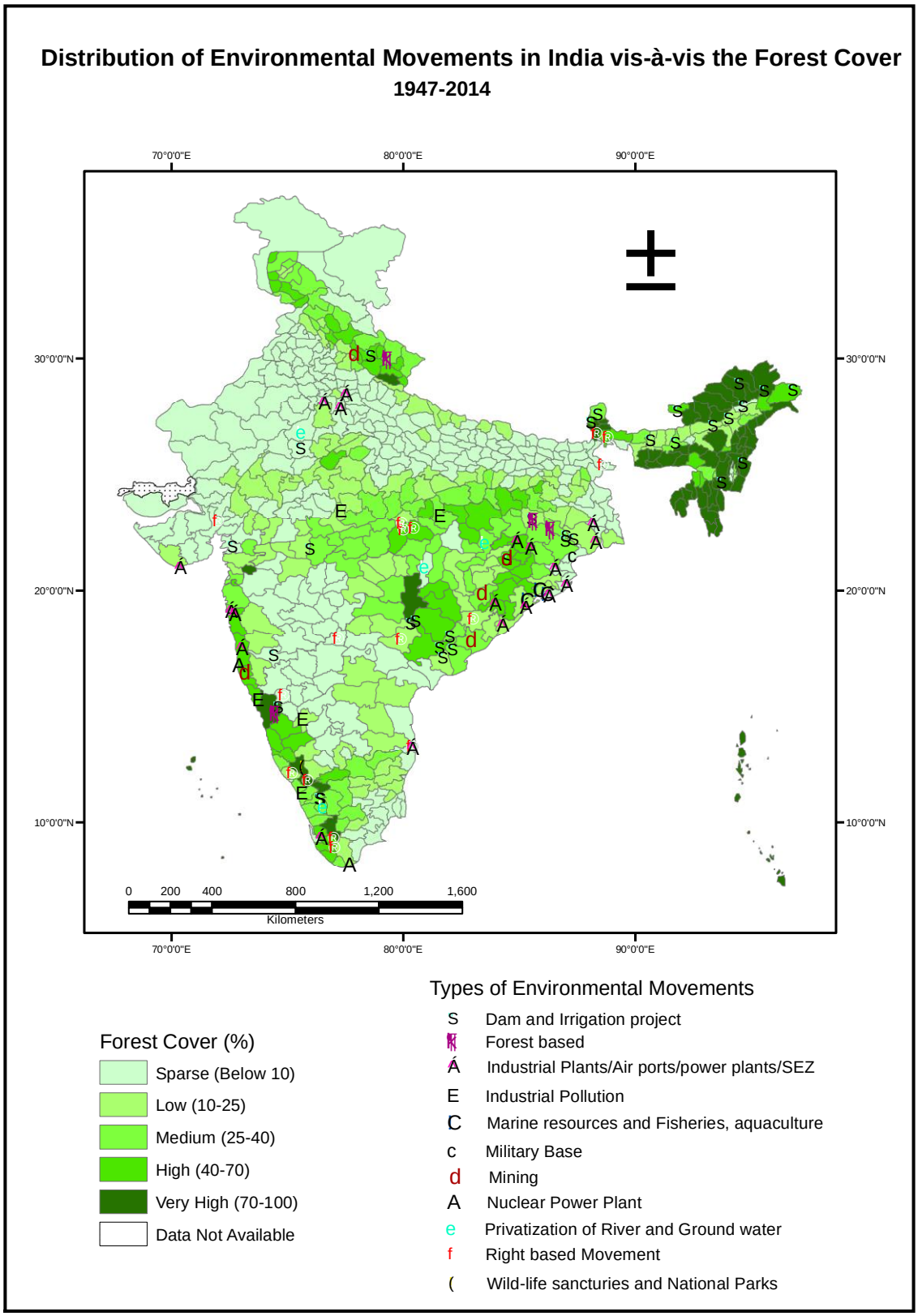
To test the statistical significance of this hypothesis, we have carried out a 'T-Test' statistics. The results show that, in the case of forest cover, the t-statistic is 3.89 which is significant at 5 % level of significance[3]. The corresponding two-tailed p-value is 0.00017, which is less than 0.05. Thus, we can empirically conclude that the mean forest cover in the districts experiencing environmental movements is significantly higher than those without them. The same is clearly visible from fig 2.1, which reveals that the incidence of the environmental movements are over time happened in the regions with high forest cover. Therefore, it can be argued that though the so-called 'environmental movements' are largely livelihood struggles as argued in the literature, but terming them so is even statistically justified. In other words, these movements are nested in similar regions, with forest as the primary environmental resource base. Therefore characterizing these movements as the environmental movement is in a way inevitable as the fundamental question enveloped in the livelihood concerns are essentially ecological in nature.

On the other hand, there is no significant mean difference in the level of agricultural activity of districts experiencing social movements and ones without them. In other words, the environmental movements are not necessary distributed in the districts with high agricultural productivity. The basic premise of carrying out such an exercise was to indirectly evaluate the importance of agricultural land dispossessions. However fig 2.2 reveals a somewhat different picture. It can be easily from the map that an insignificant

[3] The T-Test is a statistical tool designed to compare means of same variable between two groups. In our example, we resort this technique to compare the mean forest cover between the group of districts with the incidences of the environmental movement and the group of districts without the incidences of the environmental movement.

statistical result is attributable to the low incidences of environmental movements in the agriculturally productive regions like Tamil Nadu and Punjab.

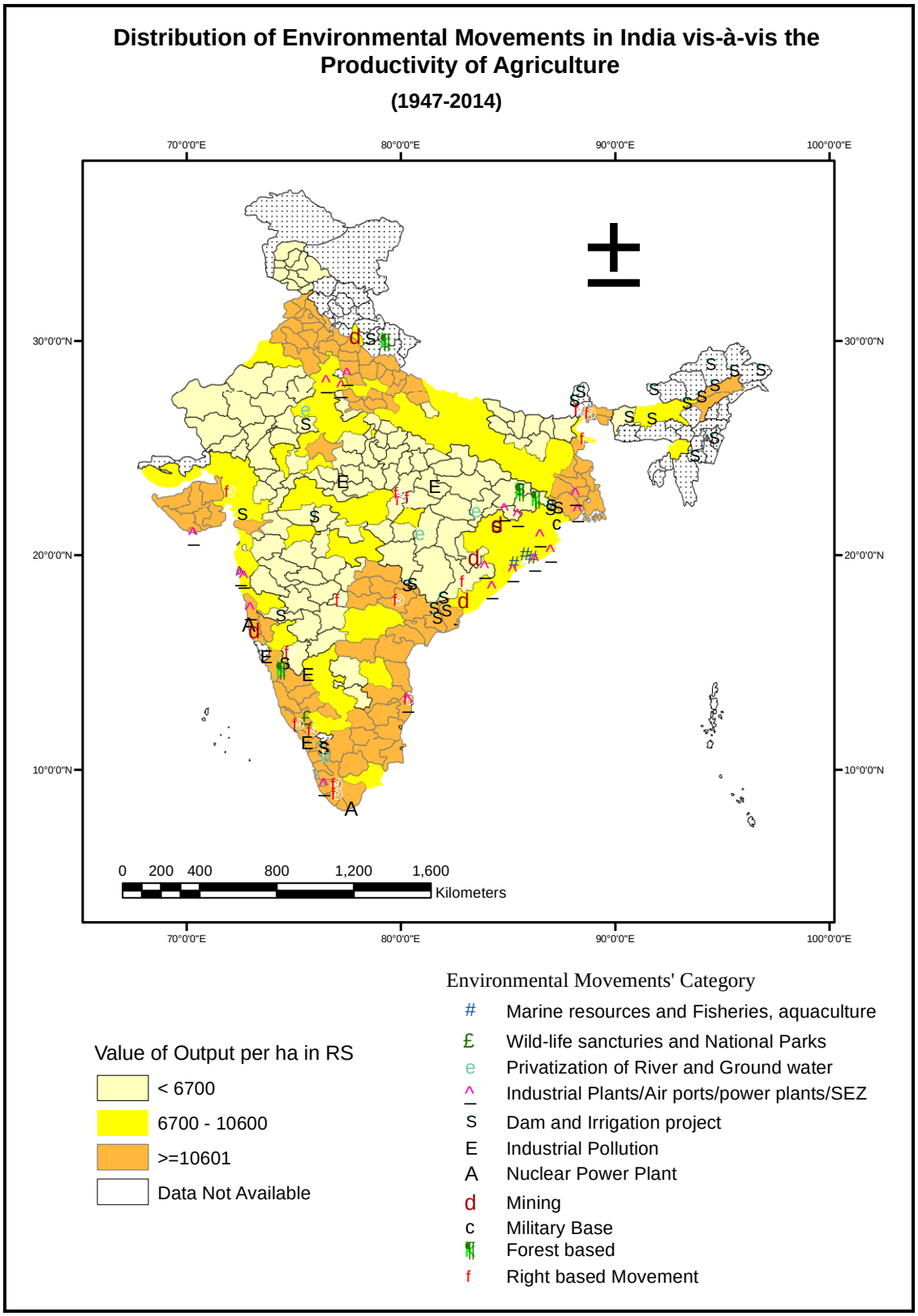
Map. 2.1: Distribution of Environmental Movements in India vis-à-vis the Forest



Source: Forest cover data from India State of Forest Report 2009, Ministry of Environment and Forestry, Government of India, and the environmental movements are traced from the secondary literatures mentioned in the bibliography.

Note: The popular movements around the natural resources during the period 1947-2014 has been mapped against the forest cover is for the year 2009.

Map 2.2: Distribution of Environmental Movements in India vis-à-vis the Productivity of Agriculture



Source: Agricultural Productivity data from Bhall, G.S and G. Singh (2012). *Economic Liberalization and Indian Agriculture: A District-Level Study.* New Delhi: Sage Publications.

Note: The popular movements around the natural resources during the period 1947-2014 has been mapped against the agricultural productivity data for the year 2005-08.

The historical geography of the distribution of environmental movements, thus suggests that, these movements are not simply arisen out of conflicts between the 'omnivores', who have gained disproportionately from economic development, and the 'ecosystem people', as it was generally argued. Rather it was essentially against the production of nature in a particular way, which involves the resource fluxes biased against this powerless ecosystem people and which is fundamentally detrimental to the sustainability of the environment in the long run. Thus, the underlying currents of these movements were the thirst of the 'ecological proletariat' to attain the social control over the production of nature in the natural resource-rich regions of the subcontinent.

The geographies of environmentalism may contradict with the new traditionalists' arguments that these movement were charged from a mere contention of the modernity vis-à-vis the 'environmentally prudent' historicity of the 'east', because here the question is more material in nature, which is against the alienation of the people from the agriculturally rich tracts of the subcontinent. The geographical examination suggests that many of these movements have been fought in those regions which are productive in agriculture. It substantiates the argument that, what the society is looking for may not necessarily be a gigantic industry rather for a system to make the living possible. Therefore one cannot simply characterize these movements as social actions intended at defending the 'traditionalism', rather has to be materialistic in methodology to understand the way these movements are posing certain fundamental questions to the very paradigm of development.

2.3 Typology of Environmental Movements in India

The Indian environmental movements are characterized by diversities in their nature, methodology, and ideological underpinnings. Therefore, a taxonomic study of these movements is an extremely challenging task. The scholars like Gadgil and Guha (1995 and 1998), Sethi (1993), Andharia and Sengupta (1998) have made some remarkable attempts in this regards. Gadgil and Guha (1995) have tried to look at these movements in terms of their material, political and ideological contexts and expressions. According to them, "the material context is provided by the wide-ranging shortages of, threats to and struggles over natural resources" (Gadgil and Guha 1995: 99). Thus for them "the

political expression of Indian environmentalism has been the organization by social action groups of the victims of environmental degradation" (Ibid.). These movements have been further inspired and legitimized by various strands ideologies. Thus, they have discerned few major strands of the environmental movement in the ecological history of India as follows (Gadgil and Guha (1995: 98-112).

1. The first, focused on the conservation of nature on aesthetic/recreational/scientific grounds, and which mostly attract the urban actors.
2. The second strand also focuses on the conservation of nature, but, on the basis of cultural or religious traditions.
3. The third strand confines to a technological perspective focusing on the efficiency of resource use.
4. The fourth one is the dominant strand in the Indian environmentalism, for them, as it focus on the question of equity. 'These have largely arisen out of conflicts between omnivores who have gained disproportionately from economic development and ecosystem people whose livelihoods have been seriously undermined through a combination of resource fluxes biased against them and a growing degradation of the environment'. They characterize this strand as the 'environmentalism of the poor', to distinguish them from the 'full stomach' environmentalism of the advanced capitalist societies.

Based on the ideology involved the 'environmentalism of the poor' is further divided into four subgroups, as follows:

a) The Crusading Gandhians, emphasizes the moral imperative of checking overuse and doing justice to the poor.

b) Ecological Marxists concerned with the radical transformation of the unjust social order and thus creating an economically just society with social and ecological harmony.

c) Proponents of appropriate technology are bothered about the practical demonstration of the socio-technical alternatives to currently existing centralizing and environmentally degrading technologies.

d) Scientific Conservation and Wilderness enthusiasts are, basically, the naturalists, and are concerned with the efficiency and management and the protection of animals, forests, biological diversities, etc. respectively.

The environmental movements in India cannot be strictly classified on the basis of their ideological underpinnings, as they simultaneously involve two or more ideological stands at a time. Thus, this framework is less useful in understanding the typology of Indian environmentalism. In the Chipko movement itself, Guha (1989) has identified the involvement of three ideological strands at a time, such as the appropriate technologists under the leadership of Chandi Prasad Bhatt, the crusading Gandhians with Sunderlal Bahuguna and the ecological Marxists with the Uttarakhand Sangh Vahini across different spatial locations. Thus, this framework is not useful in developing a typology for having a comprehensive understanding of the environmental movement in the country with respect to their organization, underlying issues and ideologies.

In a remarkable attempt, Sethi (1993) has tried to develop a typology of environmental movements in India based on the use and control of natural resources. In this schema, the environmental movements in India are categorized into three types of struggles over natural resources. The first consists of those struggles operating in the domain of political economy concerned with the entitlement of different social groups to resources. The early popular movements in India like the Telangana, Tebhaga and Naxalbari rebellion and the contemporary movement at Narayanpatna and Chengara can be incorporated into this category. Second includes those movements directed towards seeking technological innovations and a change in the policy framework, related to the pattern of environmental resource use, within the existing socio-economic contexts. The third strand raises the ecological issues of development and thus seek to alter the very classification of both man and nature relationship. All these struggles are clustered around various natural resources such as land, water, forests and air. Thus, she identifies five categories of environmental movements: forest-based, land use based, those against big dams like the Narmada Bachao Andolan, against pollutions created by industries like Save Chaliyar River Movement in Kerala, and against overexploitation of marine resources (e. g. Chilka Lake movement).

This topology of Sethi, based on natural resource-based struggles was critiqued by Andharia and Sengupta (1998), as it leaves out a number of activity-groups of the environmental movements in India as untouched. And thus they have tried to develop a more comprehensive framework to understand the typology of the environmental movement in India by incorporating all its vividness. Though their framework as being temporally confined into the state-led developmentalist regime of pre-1990's, it is one of the remarkable frameworks that one can use for a systematic analysis of Indian environmentalism. In the following section, we would try to adapt this framework in a way to incorporate the spatial and temporal dimension in it, so as to look at the dynamics of environmentalism in the subcontinent over the years.

Table. 2.1: Categories of Environmental Movement by Issues, with Examples

Sl. No	Categories	Issue	Some Examples	Time	Locational Characteristics
1.	Forests based	Right to access to forests resources, commercialization of forest	Chipko, Appiko, all other tribal movement over the country like Jharkhand Movement etc.	Pre-1990's	Forested tribal belts of the sub-continent
2.	Marine Resources and fisheries, aquaculture	Ban on trawling, preventing commercialization of shrimp and prawn culture; protection of marine resources; Implementation of coastal zone regultions.	National Fisherman's Forum working for traditional fisherfolk in Kerala; Chilka Bachao Andolan (Odisha)	Post 1990's	Coastal belts of the country.
		Stricter pollution control measures, compensation; prevention of reckless	Zahirili Gas Morcha in Bhopal, Save Chaliyar		

3.	Industrial pollution	expansion of industries without considering design, locational factors and livelihood issues of local population.	river Movement in Kerala, Movement against Harihar Polyfibre factory in Karnataka	Both in the pre and post 1990's	Industrial belts of the country, especially in the urban areas.
4.	Development Project				
	a. Dams and Irrigation Projects	Protection of tropical forests; ecological balance; destructive development; rehabilitation and resettlement of the displaced	Anti-Hirakud dam movt. Silent Valley Movement by KSSP; Narmada Bachao Andolan; Anti-Tehri Movement, Anti-Polavaram Dam Movement in Telengana, Save Mon Region Federation of Arunachal Pradesh	Both during the pre and post1990's but became well noticeable in post 1990's	Central Indian regions, Western and Eastern Ghats, the North-eastern and Western Himalayan regions.
	b. Nuclear Power Plant	Nuclear radiation; ecological balance; rehabilitation and resettlement, high costs.	Jaitapur Anti-nuclear Movement, Koodamkulam Anti-Nuclear Movement	Post-1990's	Coastal Zones.
	c. Mining	Depletion of natural resources; land degradation; ecological imbalances; forced displacement	Save Doon valley movement, No Mining-No Vedanta Movement of Odisha; Land Struggles at Sindhudurg in Maharashtra	Highly concentrated during the post-1990's	Chottanagpur region.
	d. Industrial Plants/Air	Realignment; Rehabilitation and	Kashipur movement against the Utkal Alumina project, Anti-POSCO Movt in Odisha; Nandigram-Singur	More frequent in	Mineral rich eastern regions and the urban

	ports/power plants/SEZ	resettlement of the displaced; ecological balance	Movement, Corridor Virodhi Sangharsh Samiti in Maharashtra	the post-1990's	neighborhoods.
	e. Military bases	Ecological balance; Rehabilitation and resettlement, and safety.	People's movement against the missile test range in Baliapal and at Netrahat, Bihar		
5.	Water based	Privatization of water; alienation of the locals from the access to water resources, contamination and over exploitation of ground water	Save Kelo river and Save Seonath Movement, Chhattisgarh; Anti-Coca Cola Movement at Plachhimada (Kerala) and Kaladera (Rajasthan)	Post-1990's	
6.	Wild-life, sanctuaries, national parks	Displacement, Rehabilitation and resettlement, loss of livelihood.	Enter the Forest Movement of Karnataka; Sharmik Mukti Andolan in Sanjay Gandhi National Park, Bombay		
7.	Tourism	Displacement, Cultural change, social ills	Himachal Bachao Andolan, Bailancho Saad, Goa		
8.	Right based movement	Social redistribution of resources; alienation of traditional rights	Telengana, Tebhaga and Naxelbari Movement; Maldhari Land Struggle, Gujarat; Chengara and Aripppa land struggles, Kerala	Revived in the post-1990's	
9.	Advocacy groups/individual campaigns, Citizen's	Policy inputs, stricter measures for protected areas; lobbying,	Society for Clean City; Centre for Science and Environment (CSE),		

	Action Groups	research, training and documentation on wild life, conservation education, community based environmental management. Publications on environmental problems; Intellectual support to grassroots movement on environmental issues.	Delhi; Save the Western Ghats Movement; National Alliance of People's Movement
10.	Appropriate technology/organic farming	International debates; Sustainable development, eco-friendly models of development; Low costs, environmental-friendly housing and technology	Navdanya Movement; People's Science Institute, Dehradun; Lauri Baker's Housing experiments.

Source: Adapted from Andharia, J and C. Sengupta, (1998). The Environmental Movement: Global Issues and the Indian Reality. *The Indian Journal of Social Work*, 59 (1): 249-31.

It can be inferred from the table (table 2.1) that the forest-based struggles were highly concentrated in the periods till 1980's. The major issues behind these movements were the large scale commercial exploitation of the forests and thus the alienation of the tribals and other traditional dwellers from accessing it. These struggles were the manifestation of the popular protests over the dominant policy regime, which sees the forest and the natural resources as the commodity for economic advancements. This very understanding of forests as a source of revenue has been inherited from the colonial histories, and it continued to remain in the policy framework of the post-colonial period as well. The colonial Forests Departments were replaced by the Independent Forests Departments, but

the process of alienation and exploitation continued even afterward. The local communities were forced to fight this continuing injustice, which resulted in the movements of Jharkhand, Chipko, etc. The forest-based movement thus had a great spread, involvement and impact on Indian environmentalism as these struggles led to a paradigmatic shift in the discourse on the commodification of natural resources.

"This shift in discourse is best epitomized by the slogans that the different struggles threw up. In Chipko, the cry was 'what do the forest bears? Soil, water and pure air!' as against the dominant notion, 'what do forest bear? Profit on resin and timber!' Similarly, the Jharkhand struggles highlighted the differences between sal (a tree species that gave the forest communities leaves for fodder, nuts and fuelwood) and sagwan (teak)." (Sethi, 1993: 129)

The technological innovations have somewhat reduced the frequency of onslaught on the forests as a resource; thus the forest-based struggles were not dominant struggles experienced since 1990's. Other sets of struggles, basically the water-based movement, dominated the scene that radicalized the question of commodification and privatization of the natural resources in post-1990 periods. The save Seonath and Keol river movement were the local protest against the structural alienation, and thus questioned the prevailing patterns of use and access to the natural resource. The fundamental question was about the very nature of the 'democratic' state, which even went to the level of privatizing the resources like river for the purpose of industrialization and 'progress'. The save Keol river movement of Chhattisgarh even witnessed the martyrdom of a women fighter for this end. The anti-Coca-Cola movement at Plachimad in the Palakkad district of Kerala and Kaldera in Rajasthan were against the resource colonialism of the MNCs and the indiscriminate exploitation of the groundwater resources.

Thus, the corporatization and commercialization of natural resources are the major thrust of the environmental movement of the post-liberal eras. The movement against the over-exploitation of the marine resources by trawling in shallow waters and the opening up of the Chilka Lake for the commercial shrimp cultivation by the TATAs resulted in wide-spread discontentment and strong resistances in this period.

The country has also witnessed the popular protests against the Industrial pollution. It was the unfortunate Bhopal tragedy of 1984, the largest industrial disaster in the history of India that has opened up new debates in the Indian environmental discourses relating to the adverse sides of the modern industries, science and technology. The continuing agony of the survivors of this historical tragedy also exposes the nature and role of the state in this whole discourses. The anti-nuclear movement of Jaitapur and Koodamkulam are largely influenced by the conditions of the people of Bhopal and the question of the sharing of the liability of the disasters. There are a lot of anti-industrial pollution movement in the country over time, and most of them were concentrated in the urban areas in particular.

The environmental activism around the development project is another example of a broad-based environmental movement with larger coverage and impact (Andharia and Sengupta, 1998). Dams, power project, railway projects, mining and the industrial plants and the current Special Economic Zones (SEZ) were the developmental projects that received stiff opposition from the local communities and the environmentalists. These are primarily anti-dispossession struggles of a very direct nature which resulted from large scale taking over private properties of multitude. Levien (2013) has identified two distinct phases in this struggles vis-à-vis the changes in the nature of state and dispossession; the environmental movement/anti-dispossession movement of the 'developmentalist regime' characterized by the dominant role played by the agency of state albeit the 'neoliberal regime', where the state became a broker for the acquisition processes. According to Levien, the frequency of these resistances has been raised under the neoliberal regimes as the processes of dispossession lost it legitimacy as it wasn't any more driven by the 'national' interests.

The dam-related agitations are geographically confined to the Western and North-eastern Himalayas, the Western Ghats, and the East Indian uplands. Though the anti-dam resistances got prominence in the national and international environmental discourses with the popular resistance against the multi-crore Narmada Valley Project, 'the Silent Valley movement in Kerala has been the harbinger in the environmental uprisings against the large dams in the country' (Andharia and Sengupta, 1998). In these multiplicities of

anti-dam movement, the Silent Valley movement 'was unique because building a dam in this uninhabited area would not involve displacement of people, and thus was fought primarily on environmental grounds' (Sethi, 1993: 132 as quoted in Andharia and Sengupta, 1998: 432). Nevertheless, it has to be noted here that, the questions raised by the anti-dam movement were not just about the rehabilitation of the oustees, but was also about the very model of the development, 'whose interests are served through such projects and the accountability of the state and multilateral agencies such as the World Bank towards human rights and environmental issues in the host countries' (Andharia and Sengupta, 1998: 433).

The mining and quarrying had witnessed the protests against the pollution and ecological balances as the case with the Doon Valley agitations, or against the displacement caused by the large-scale mining projects as the case like Gandharman and Niyamgiri movement in the State of Odisha. The popular movement against the dispossession for the industrial projects and SEZ are the dominant variety of environmental movement of the contemporary ages. Though there were a large number of such movements in the history of the subcontinent, these movements got prominence in the national and international developmental discourses with the popular resistances at Nandigram and Singur. Though there was a politics behind its sensationalism, but in the nutshell it has questioned the current paradigm of development, and thus played a significant role in bringing up some humanitarian face to the land acquisition processes, with the passage of the 'Land Acquisition, Rehabilitation and Resettlement Act, 2014 (though it is under threat at the moment). Most of these resistances were led by the peasants have raised serious question like 'is the capital oriented industrialization is the legitimate road to development that India should pursue, as against the agrarian-based labour-intensive industrialization the people demands'. The investment zones of Maharashtra, Odisha, Tamil Nadu, Andhra Pradesh and the urban fringes of Delhi, Bombay etc., were the major centers of those resistances.

The neoliberal ages witnessed the emergence of another set of movement, primarily the right based movement, which were otherwise not there in the discourse of the environmental movement. The fundamental question these movements raised was the

necessity of the social distribution of resources. Though the Telangana, Tebhaga and Naxalbari movement of the 1940's and 1960's have raised the historical significance of addressing these issues in a post-colonial developmental imaginations, and the failure of the democratic state in addressing the question of 'entitlements' has resulted in the re-emergence of these movements from the different corners of the country. The Chengara and Muthanga struggles by the Dalits and Adivasis of Kerala, the Maldhari land struggles by the traditional nomadic communities of Gujarat are some examples of these resistances.

The environmentalism of the state led wilderness and the 'conservative measure' such as wildlife sanctuaries and national parks have also resulted in the resistances from the local tribals as happened in the case of 'Enter the Forest Movement' of Mysore and Kodagu forests regions of Karnataka. These movements exposed the scientific versus the popular conceptions of the conservation and management. The issue of tourism and its environmental consequences has also given rise to the popular movement like Himachal Bachao Andolan (Andharia and Sengupta, 1998).

As observed by Andharia and Sengupta, one of the non-excludable parts of the Indian environmentalism is the emerging advocacy groups with a proclaimed objective of giving an intellectual backing to the ecological resistances. Most of these endeavors were emerged in the neoliberal ages as a part of the environmental awakening of the middle class's non-party political consciousness. 'At one level, they provide intellectual, theoretical and demonstrative stimuli to the environmental movement through their contributions to the discourse on development and ecology and by demonstrating small eco-friendly models of development in specific areas. At another level, they actively participate in lobbying and judicial litigation on issues of concern' (Andharia and Sengupta, 1998: 434).

The typological profile of the environmental movement in India indicates that most of these movements are largely localized, issue specific and restricted to relatively small areas. But it has to be noted that the emergence of a feeling to have a national and international platform for such resistances has resulted in the formation of the National Alliance of People's Movement (NAPM). There are also instances of solidarity

movements in different horizontal spatial locations, like the movement in solidarity with the ongoing anti-POSCO movement in various parts of the world including Seoul, the national capital of South Korea, the home country of POSCO Company. There are also instances of these localized protests having moved into different spaces of vertical order as part of the intensification of resistance, from the district to the state to the national capitals, even to the international players such as World Bank as the case of Narmada Bachao Andolan.

The other important point that has to be noted from the historical terrain of the environmental movement in India is that the 'range of issues raised by these movements varies from cost-benefit analysis of environmental impact to a discourse on alternative development based on distributive justice and human rights' (Andharia and Sengupta, 1998). Levien (2013) has developed a framework to categorize these movements based on these specificities in their approach as the 'bargaining' and 'barricade' movement. The bargaining movement consists of those who are fighting for higher compensation and most of the resistance in the peripheries of expanding cities are of this nature while the barricade movement involves those who refuse to give their land at any price, and thus they 'cannot be brought into a class compromise on the terrain of commodification' (p. 160).

'The different ideological orientations, methodologies and a wide variety of actors involved indicates the amorphous nature of Indian environmental movement' (Andharia and Sengupta, 1998: 434). With all these inherent characters, the environmental movement in India has able to pose a serious challenge to the dominant imaginations of the governmental and economic policy formulations by exposing the fact that the undefined, endless growth assumptions are impossible to attain in the long run and are destructive in the short run. Thus, the widely shared objective of the Indian environmentalism can be of an attainment of a sustainable economy of high environmental quality and social justice.

2.4 Ideologies of Environmental Movement in India

Any discussions about the social movement, be it the "old" trade union movement or the "new" environmental movement becomes meaningless without getting into their ideological underpinnings. An ideology is 'a system of idea that gives legitimacy to an existing or proposed system of relationships, and correspondingly supports an action programme to sustain or subvert the prevailing system' (Gore, 1993: as quoted in Andharia and Sengupta, 1998). Ideology, thus provides inspiration and legitimacy to a social movement and also direct the value framework of the movement. According to Gore, ideologies are action driven, and this 'action element related to ideology is what we call a social movement' (Gore, 1993 as quoted in Andharia and Sengupta, 1998). It can be noted from the stated definitions of 'ideology and social movement that both contain change-resisting or change-promoting elements'. The direction of change resistance or change-promotion within a movement become problematic then (Andharia and Sengupta, 1998: 435).

'Ideologies of Indian environmentalism are essentially characterized by free-floating eclectic brands of multifarious, often conflicting groups' (Andharia and Sengupta, 1998: 435). The crusading Gandhians, the ecological Marxists, the proponents of appropriate technology, the Scientific Conservationists, the Wilderness Enthusiasts (Gadgil and Guha, 1995 and 1998), the ideology of conservation and the perspective of indigenous ecological management (Baviskar, 1995) and eco-feminism (Mies and Shiva, 1993), are the known ideologies of the environmental movement in India. The critical engagement with the environmental movement in India suggests that these ideologies are sometimes overlapped in a single movement itself. For example, in the case of Chipko movement, the three distinct ideologies of: crusading Gandhism through Sunderlal Bahuguna, appropriate technology with Chandi Prasad Bhatt and the ecological Marxism by the Uttarakhand Sangh Vahini got mingled together over time in the same movement itself, against the onslaught of commercial forestry on the traditional forests rights of the hill peasantry (Guha, 1989). It also has to be noted that this environmentalism after a particular moment got transformed into a regional separatist movement asking for a

separate statehood as the case with the Uttarakhand region. The classical case of Jharkhand and Chhattisgarh state formation is very much validating this argument.

Table 2.2: Ideological Preferences of the Various Strands of the Indian Environmental Movement

	Crusading Gandhians	**Ecological Marxists**	**Appropriate Technologists**	**Scientific Conservation**	**Wilderness Enthusiasts**
Polity	Highly decentralized democracy, 'village republics'	Dictatorship of the proletariat	Decentralized democracy, with women, low-caste participation	No firm view	No firm view
Decision Making	Highly dispersed power of decision making	Centralized planning	Decentralized planning	Centralized planning	Strongly centralized administration
Society	No firm view	Economically equitable, but centralized political power	Economic and political equity	No firm view	No firm view
Economy	Mixed economy	State occupying 'commanding heights'	Mixed economy	Mixed economy	No firm view
Scale of economic enterprises	Predominantly small, village level	Predominantly large	Focus on small, complemented by large	No firm view	No firm view
Appetite for consumption	Limited through moral choice	Limited only on grounds of equity	Limited on grounds of both equity and ecology	Unlimited	Unlimited
Linkages to global economy	Weak	Weak	Weak	Weak	No firm view
Rate of technological change	Exceedingly low	High	Moderate	No firm view	No firm view

Commitment to military expenditure	Very weak	Strong	Weak	No firm view	No firm view

Source: Gadgil, M and R. Guha (1995). *Ecology and Equity: The use and abuse of nature in contemporary India*. New Delhi: Penguin Books, p. 111.

'The presence of different ideological positions within an environmental movement suggests that ideologies are often used more as strategies than as ideologies per se' as argued by Andharia and Sengupta, (1998: 436). This has either happened through the changes in temporal phases or the leadership of the movement as the case with the Chipko movement. With all these ideological differences and conflicts, the common elements of the Indian environmental movements are the concern for an 'alternative vision of development'. It is intellectually rooted in the material realities of the 'issues of moral economy versus market economy and the vested versus public interest in the use of natural resources' (Andharia and Sengupta, 1998).

It can also be noted that the major ideological strands (particularly the Gandhian and Marxist ones) of the environmental movement in India are not exclusively linked to the environmentalism alone. Thus this environmental movement in India under a non-party political formations has been characterized as 'a new social expression rooted in old ideologies' and critiqued for its non-radical approach and inadequacy in making a 'frontal attack' of the capitalist world system. The new trends like the emergence of National Alliance of People's Movement to link the similar resistance across the country suggest that the criticism about these movement regarding their ideological inadequacy in questioning the capitalist global order and highly scattered and localized adjustment-based nature is mere reductionist and does not serve any purpose. The environmental movement are not just for the sake of environment but also for raising the question of distribution of resources and the livelihood options which are being highly threatened by the unfurling system of 'capitalism as a world ecology' (Moore, 2011). Thus, environmentalism in India is essentially a class struggle but not by a class in itself but by a class for itself, against the dominant processes of accumulation by dispossession and the production of nature. The action elements of the ideologies are largely issue-based,

but they do involve a serious battle with the systems and structures of environmental degradation, which is neoliberal capitalism at the present moment. The characterization of this struggles as mere reformists is a result of the methodological rigidity, because the environmental movements in India are still in the process of making and at the moment these movements have fundamentally taken the form of 'positional war' as against of being a 'frontal war' in a Gramscian sense.

2.5 Conclusion

The Indian environmentalism has been cherished in a two extreme ways by the scholarship over time. In the mainstream discourses involved an acute negation of the ecological context of the agrarian question by fundamentally focusing on the social relation. This framework in a way reinstated the dualism between the man and environment and both in an opposing boxes of enmity to each other. But, the historical geography of environmental movements in India suggests that, the popular movement of the post-colonial India around the use of natural resource has to be seen in continuum with the similar movement of the colonial periods, as both were against the processes of alienation and cornering of surplus. This mere critique of colonialism in constructing such an environmental history, which links the ecological degradation to the India's colonial political history and of post-independence' development' policies, rather than linking it with the question of local environments is very much of a dangerous stand as the rejection of the ecology from the historical discourses. Because this sorts of discourses will end up in the appropriation of these struggles by vested interests such as Swadeshi Jagaran Manch [affiliated with Rashtriya Swayamsevak Sangh (RSS)] as happened to the Uttarakhand movement. Thus, these celebrated environmentalism of new traditionalism were also in a way containing the kind of question these movements have been raising over years and thus putting up the whole discourses into some boxes like the "developmentalist" versus "anti-developmentalist", and the "anti-environmentalists" versus "environmentalists". That has ended up in constructing a commonsensical notion that development is necessarily antithetical to the environment. From this terrain, we have to go one step further to acknowledge that these movements certainly represent challenges to modernity, but it is not by any absolute rejection of modern ideas in favor

of local tradition as generally being argued, rather by demanding an alteration of the nature of modern post-colonial Indian state, its role in using natural resources, as well as regnant notions of citizenship, democracy and development.

Thus we argue that the environmentalism of the south of course can be an "environmentalism of the poor", as Guha (1989) would like to characterize it, since the local communities may not be 'environmentalist by default' as argued by Baviskar (1995 or 2008). Nevertheless, the question, that these movements have been raising is environmental in nature, that may not be as sophisticated as about the 'first world's ecological indebtedness to the Third World' (Padel and Das, 2010), but the very understanding that they are going to be alienated from their natural environment through this dominant mechanism of production of nature. As the locals' subjugation with the processes of accumulation by dispossession was the very trigger of these movements, they got highly localized in their organization with respect to their regional experiences. But the real question posed by them was about the whole processes of production of nature under the capitalist global regime. Thus we argue that the environmental dimensions of these movements are not anybody's benevolent attribution, rather the fundamental question enveloped in the livelihood concerns posed by this movement are essentially ecological in nature, and thus the environmental concerns are the underlying currents of these movements.

The anti-POSCO movement as a resistance, of this sort, against the ongoing processes of accumulation by dispossession and its inherent dynamisms of 'cornering of benefits' and 'passing on the costs', fit well into the historical geography of Indian environmentalism. A detailed case study of this movement, thus, enables us to further explore the political ecology of the genesis and the organization of environmental movements in India. In order to have a critical appreciation this movement, one need to look at the human-nature interaction at least in a regional scale. Therefore, in the following chapter we would try to characterize the region of Odisha with respect to its human-nature interaction in the larger narratives of the trajectories of neoliberal growth regime, to provide a background for understanding the environmental movements like the anti-POSCO movement.

Chapter 3

Deconstructing the Trajectories of 'Development': The Odisha Experience

3.1 Introduction

The historical course of political ecology of environmental movements in India, as it appeared in the last chapter, suggests that the 'environment-ness' of environmental movements in the subcontinent could not be treated as something that one can simply consider as 'taken for granted'. Though one can be critical about the systematic neglect of the elements of 'environmental question' from the mainstream historiographies in India[4], the obsession with the 'environmentalisation' of popular resistances of the subcontinent would also don't lead us anywhere. Utmost such a romanticism in methodology, treating the Tribals or the traditional village dwellers as the 'environmentalist by default' and the attempts to explore the connections between the womanhood and nature-hood as one can see in Vandana Shiva and all, in a way helps in hiding a lot rather exposing the issues at the core. Such methodological reductionism would lead us into a perception of the 'local' communities as static and inward-looking, a tendency very much akin to the neopopulist writing on social mobilisations in the 'South'. As Emma Mawdsley, in her attempt to deconstruct the Chipko movement, rightly put it:

"This image (of viewing local communities as static and inward-looking) underpins notions of 'traditional villagers', whose livelihoods are intimately dependent on the local environment, and whose life worlds are constructed and given meaning only through their immediate surroundings. But this offers a very partial understanding of people's lives in the hills, and does not reflect their familiarity and engagement with a whole series of supra-local influences. The transition from the Chipko protests to the regional

[4] Accordingly "the agrarian history of British India (and the remnants followed it) has focused almost exclusively on the social relations around land and conflicts over distribution of its produce to the neglect of the ecological context of agriculture- for example, fishing, forests, grazing land and irrigation- and of state intervention in these spheres." (Guha and Gadgil, 1989: 142, as quoted in Shah, 2004: 250)

mobilisation underlines the fact that it is misguided to rely on the sparse and reductionist accounts of 'the local' as set forward in much neopopulist theory in understanding the diverse livelihood strategies, identity formations and outlooks of the vast majority of hill men and women" (Emma, 1998: 12).

She, thus, argues that it would be an injustice to the vast majority of people who have taken a part in the Chipko movement, if we carry the notion that they all want to return to some 'idealised traditional past', that is unlikely ever to have existed even. Therefore it has to be stated that such a reductionist approach embedded with ecological 'romanticism', constraints the scope of our discourses in to an unproductive debates like 'ecology versus development', 'biocentrism versus anthropocentricism', and further lead one to take a refugee in a kind of cynicism even. Thus such reductionist methodologies cannot help us in understanding how the celebrated 'environmentalistic' landscapes of Uttarakhand Himalayas, per se, got evolved into a terrain of regional movement underlined by the frustrations of historical experiences of economic backwardness.

Therefore it has to be acknowledged that it was such a negation, of the economic and material organization, involved in those methodologies of dominant environmentalists, confined the celebrated Chipko movement as merely a 'conservationist movement', making the local supporters of the movement to be worried about the 'unfinished mission' of it. This contempt towards the mainstream approaches' vulnerabilities of falling into the image traps of certain leaders or the regional traditions rather than critically engaging with the core issues raised by those 'unquiet woods' and farms can be clearly observable in the words of Gayatri Devi, a local activist who had taken part in the original struggle of Chipko, as reported by Mitra:

> "We got nothing from Chipko. Even our hakhakooks (traditional rights and customs) to forest produce, have been taken away from us… Earlier, we could fight the contractors, but now the sarkar and the Van Nigam are the biggest contractors. How can we fight them?" (Mitra, 1993).

That made the folks of Chipko to initiate another movement asking for their traditional right to access the forest resources and bargaining for necessary infrastructural

arrangements in the village (see Mitra, 1993). Therefore we argue for a regressive political ecology framework for making a holistic understanding of the politicized environment of India that the neopopulist theorists are otherwise unable to offer. Such a framework involves a thirst to look at the material base of these movements, where the 'environmental concern was not lacking, but a sound environment was seen as a *functional requirement for a sound local economy*' (Emma, 1998: 12). Therefore here we opt such a framework in order to contextualize the genesis and the spatial organization of a contemporary popular uprising around the ecologies in India.

Thus we reinforce the political ecology argument that, the environmentalism (in India) cannot be separated from the economic and material dynamics of the local community under question. And therefore, the popular movements around third world ecologies have to be looked at from the vantage point of regional structures where these movements are anchored. Such an approach will enable us in arriving at a comprehensive understanding of the Indian environmentalism vis-à-vis the economic-political and social subjugation of the region and its community by the dominant forces of global political-economy structure mediated by the state apparatus.

This chapter attempt to address our second research question, 'how do the character of the region with respect to its people's interaction with the environment and the trajectories of development got manifested in the genesis of environmental movements like anti-POSCO Movement?' Thus we involves an empirical critique of the region's incorporation into the post-colonial political economy structures of India, and try to historicize its lineage in the colonial past, to locate the rational for the genesis of popular movements like (anti) POSCO Movement.

The changes in land-use pattern has been taken as an entry point to analyze the land dependence of the local/regional economy and to characterize the nature of developmental paradigms at the grounds, and then we will move to look at the employment situation across various sectors of economy vis-à-vis their share in economic growth of the region, and then critically looking the argument of 'jobless growth' in the neoliberal experience of the region. This will enable us to contextualize the ongoing anti-POSCO movement in the backdrop of the contentions in the inability of the 'de'-

colonization and neoliberal strategies in meeting the 'popular expectations' of the region and thus centering labour in the environmental discourses. Thus, it can be argued that the environmental movements of Odisha is a manifestation of the region's economic subjugation that has been going on ever since the history from the notorious Maratha rule to the British period which in different forms continues in the post-colonial eras as well. The core questions addressed in this chapter are:

- Has there been any trade-off in terms of changes in the agricultural land-use pattern over time and are the State's patterns markedly different from the all India patterns? Is the nature of change therein reflective of a structural transformation?
- Has the outflow of agricultural land, if any, been compensated in terms of changes in employment options?
- Are the employment avenues available in the non-agricultural sector in tandem with the growth performance of the sectors in the regional economic profile?

The chapter, thus intends to lay out an economic backdrop to contextualize the ongoing resistance of people against the processes of industrialization.

3.2 The Changes in Land-use pattern

Land use changes are highly varied over time and space and it is very much location-specific as well. The macro patterns of inflows and outflows of land-use categories over time enable us to draw inferences about the larger processes that drive these changes. Though, the population dynamics and poverty has been generally considered as the prime drivers of land-use changes, the scholarly work shows us that neither of these two factors plays any significant role in the recent years, rather it is the economic opportunities, mediated through institutional mechanisms, that could explain these changes in a better way. Thus the changes in land use pattern can be useful to capture the way by which the nation states respond to 'development' (private) investments, both domestic and foreign, in the recent years (Sen, 2015). A comparative analysis of the employment dynamics and growth trajectories with respect to the land use pattern will enable us to understand how the people are incorporated into this dominant developmental paradigm.

The empirical evidence shows that the area under non-agricultural uses (AUNA) even today occupies only about 8% of the total reporting area of the country, where as the secondary and tertiary sector contribute more than 80% to its gross domestic product (GDP). Therefore, before getting into the details of the land-use dynamics one needs to acknowledge the very fact that the primary sector continues to be the major land-intensive activity despite of their decreasing share in GDP. So one cannot depend entirely on the land-use data to make a wider perception about the developmental trajectories and thus to characterize the region based on the underlying resource dependence there. Rather, the land-use pattern statistics has to be used to initiate a discourse around the developmental paradigm under question.

From the land-use statistics available from the Directorate of Economics, Ministry of Agriculture, on can see the macro-scenario. It is clearly visible from the data that there is a raise in the share of area under non-agricultural uses (AUNA) during the last one decade, and at the all India level it has been increased about 1.11%, while for Odisha it was about 2.61 during 2000-01 to 2010-11 [see table 3 (A)]. There is a remarkable regional/spatial trade-off in the State of Odisha itself, the Coastal region registering a higher change of about 3.39%, while the Northern and Southern regions registered a change of about 2.32% and 2.13% respectively. The district of Jagatsinghpur, the place where the anti POSCO (plant) movement is located, falls in the coastal region registered a higher growth rate of about 14.23% during this year, and most of this increase has been recorded in the latter periods of the decade. While the Sundergarh and Keonjhar district of western Odisha, known as the mining district of Odisha, has registered a growth of 9.84% and 1.21% respectively.

Further analysis shows that, there was a net outflow from the cultivable land and it appears to be at a marginal rate, but in absolute terms of extent of land involved, it is substantial and it can be noticeable across all the levels under our consideration. It has to be noted here that the state of Odisha has registered a decline in both Stock of Agricultural Land (SAL=NAS+CF+FOCF+CWL) and Area under Plough (AUP= NSA+CF), but the rate of decline for AUP was higher than the decline in SAL. This trend indicates a greater net-outflow from productive agricultural land compared to unutilized

or under-utilized agricultural land, a tendency one can notice across all the three regions of the state as well. Area under Barren and Un-culturable Land has also registered an increase during this period and this shows the existing inefficiencies in the utilization of land resources in the State. All the three NSSO regions in the State has followed this macro trend. For the district of Jagatsinghpur, both the area under SAL and AUP declined during this time, but the rate of decline in SAL is greater than that of AUP, somewhat similar to the all India trend. Unlike the macro trend for the State, the district also recorded a decline in the area under Underutilized agricultural land, and thus it has to be inferred that most of the increase in the area under the non-agricultural uses has been drawn from this underutilized agricultural lands, which is something desirable from a livelihood perspective. But that doesn't mean that, all is well for the area under plough, and which is also declining over time, though at a marginal rate

Table 3. 1: Annual Rate of Growth* of Selected Land-Use Categories

Annual Rates of Growth* of Selected Land-use Categories						
REGION	Jagatsinghpur	Coastal	Southern	Northern	Odisha	India
Area Under Non-Agricultural Uses	14.23	3.39	2.13	2.32	2.61	1.11
Barren and Un-Culturable Land	14.10	3.01	5.04	-3.15	2.37	-0.25
Under Utilized Agri. Land (CWL+FOCF)	-3.32	5.78	1.16	14.19	6.40	-0.35
Area Under Plough (NSA+CF)	-0.72	-1.01	-0.68	-1.79	-1.14	-0.02
Stock of Agricultural Land (NAS+CF+FOCF+CWL)	-1.21	-0.80	-0.53	-0.26	-0.50	-0.07
Permanent Pastures and Other Grazing Lands	4.29	4.44	0.60	1.87	1.54	-0.34
Forests	0.22	0.00	0.00	0.00	0.00	0.02

Source: Calculated from Land use statistics by Directorate of Economics and Statistics, Ministry of Agriculture.

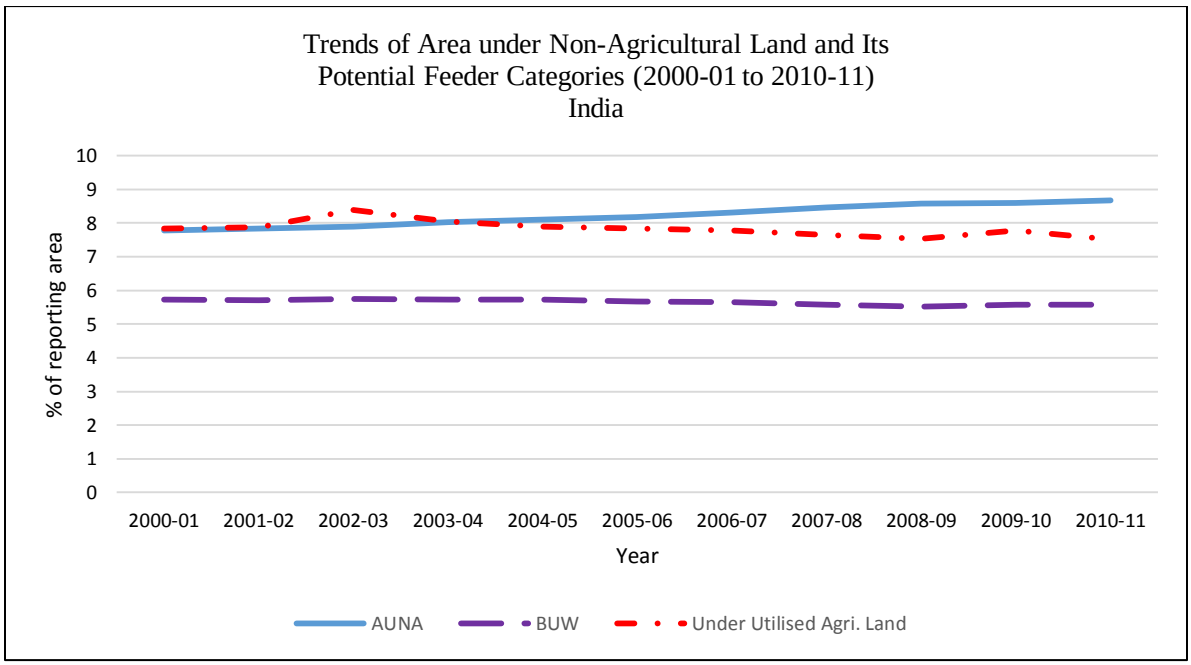
Note: * Decadal averages of year to year growth rates.

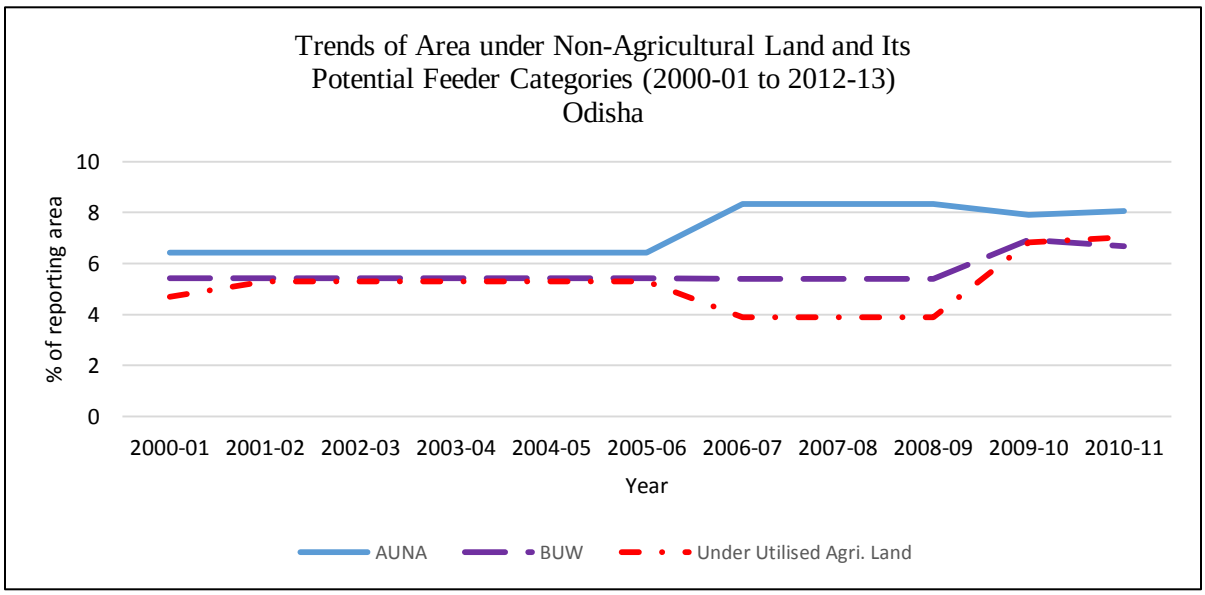
The following graphs [see Fig. 3 (i. a) and 3. (i. b)] capture the trends of area under non-agricultural activities vis-à-vis their potential feeder categories. At all India level the AUNA has been registering an increase for last several years, which has begun in the 1980's, where as in the case of Odisha from the available data for the last on decade (2001-2011) one can notice that such a steady trend is noticeable only after the middle of the decade. In Odisha's case, underutilized agricultural land was the major feeder of AUNA, while at the all India level it was largely was an effect of barren and uncultivable waste land in the initial years.

The outflow from agricultural land can be generally explained by the process of urbanization[5] and the transition of the economy from an agricultural based to that of a non-agricultural based, and it is a dominant model of trajectory of development as per the classic Lewis 'Dual Sector Model'. Thus it is widely accepted that in the course of time, such a trend is not only a matter of inevitability, but also one of desirability. Therefore one need to critically look at this model of sectorial transition by contrasting it with the sectorial composition of gross state domestic product (GSDP) and the distribution of employment especially in the non-agricultural sectors. Such an approach will enable us to deconstruct the developmental paradigm, which India was following, from the empirical experiences from the margins.

[5] It has to be noted that the state of Odisha records a declining trend in the rate of urbanization over time, the percentage decadal growth of urban population was 29.78 during 1991-2001 and which has declined into 26.80 percent during 2001-2011. It is lesser than the national average of 31.80 percent.

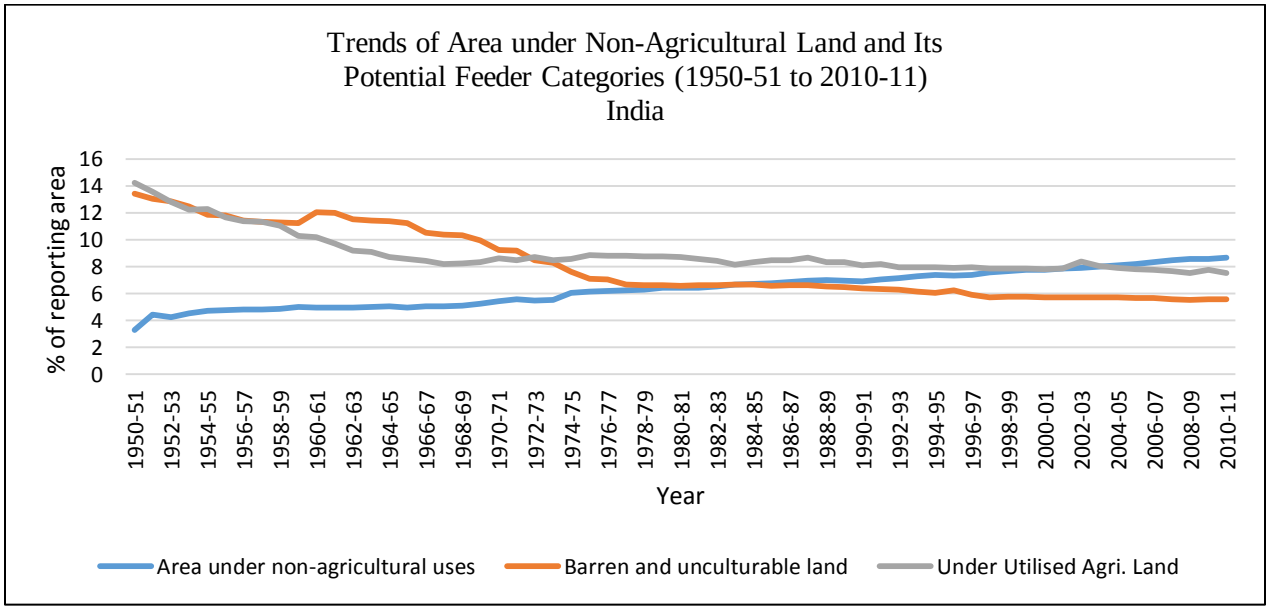
Fig. 3. 1. a: Trends of Area under Non-Agricultural Land and Its Potential Feeder Categories (2000-01 to 2010-11)





Source: Land use statistics by Directorate of Economics and Statistics, Ministry of Agriculture, Government of India.

Fig. 3. 1 (b) Trends of Area under Non-Agricultural Land and Its Potential Feeder Categories: India (1950-51 to 2010-11)

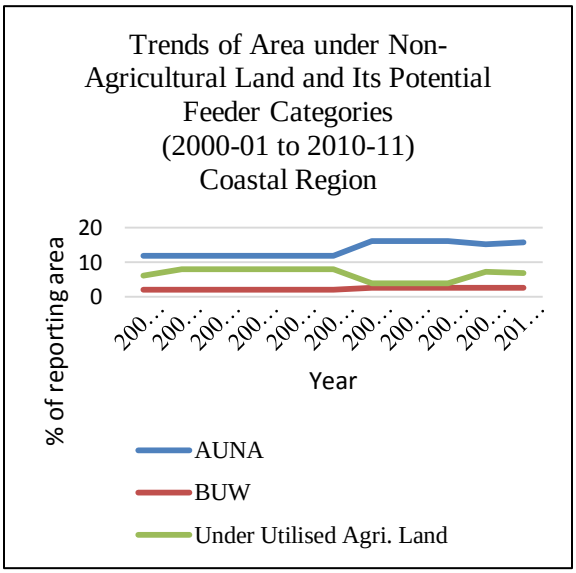


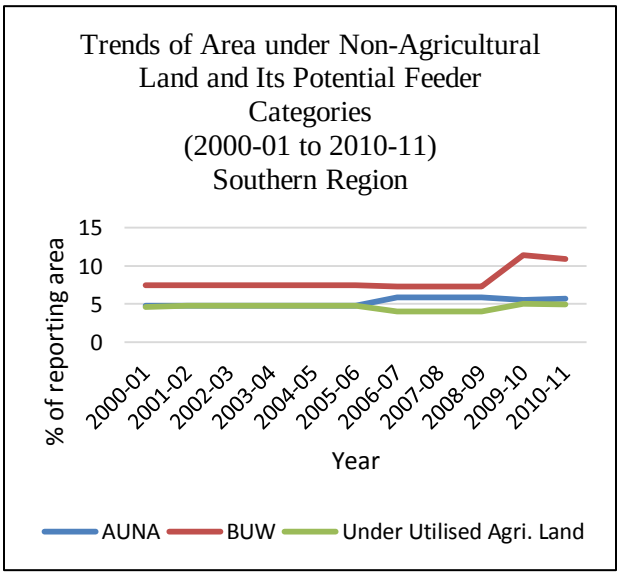
Source: Land use statistics by Directorate of Economics and Statistics, Ministry of Agriculture, Government of India.

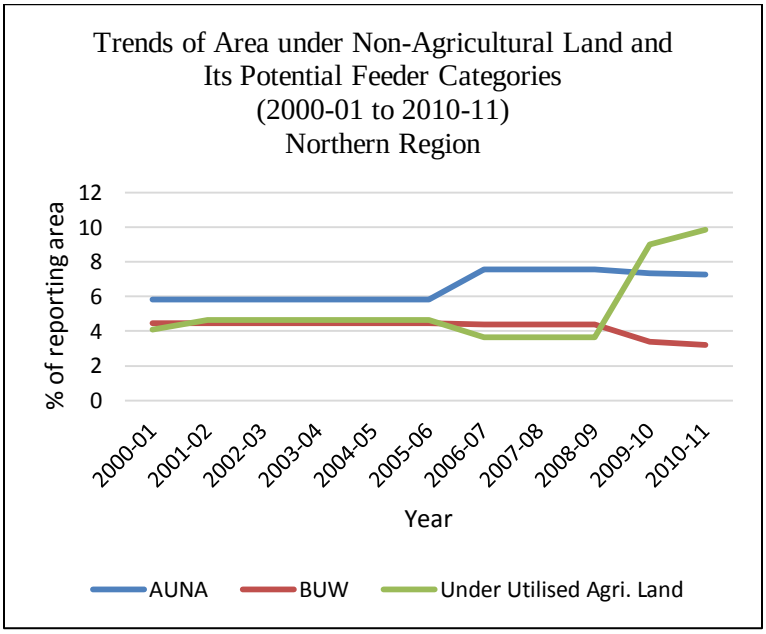
A detailed analysis of changes in land use pattern in Odisha shows a specific regional pattern across three NSSO regions [see fig. 3 (ii)]. The AUNA is relatively higher in the Coastal region as compared to the Northern and Southern Region. It is also noticeable that across all these region there is a rise in the area under non-agricultural uses for the last one decade, especially after 2005-06. The rate of increase in the area under AUNA is higher for the Coastal region, which is about 3.39% for the whole decade [see table. 3 (A)]. It can be discernable from the graph that the major feeder of AUNA was the area under the category of underutilized agricultural land (i.e. cultivable wasteland+fallow other than current fallow). Such a trend is true for other regions as well, and it is desirable from a livelihood perspective as it involves an 'efficient' utilization of underutilized area.

But a more nuanced analytical level, we have to look at this trend from a more comprehensive perspective so as to include the factors responsible such a trend and also how far it is effective in making a transformation in employment structure of the region.

Fig. 3. 2 Trends of Area under Non-Agricultural Land and Its Potential Feeder Categories across various regions of Odisha (2000-01 to 2010-11)







Source: Land use statistics by Directorate of Economics and Statistics, Ministry of Agriculture, Government of India.

3.3 Structural Transition in Economic Growth and Employment Scenario: In search of Odisha's Trajectories of 'Development'

Once we accept the dominant model of development, mainstream perspective on development, that the economic development involves the structural transition in favor of non-agricultural activities, we do expect a transition in the land-use pattern in favour of non-agricultural activities as a necessary condition, though not sufficient, to proceed it[6]. Since most of the non-agricultural activities may not be that much land-intensive as the primary/agricultural sector is, the shift in land-use pattern may be marginal as we have observed in the case of Odisha for the last decade (2000-01 to 2010-11). This structural transition will always involve an alienation of labourers from the means of production from a classical point of understanding. And in order to complete this linear transition of 'economic progress', the free labour created has to be absorbed into the emerging industrial/non-agricultural sector over the time. Thus change in the land-use pattern should be followed by a parallel shift in the composition of employment pattern and economic growth. This section, therefore, intends to look at the dynamics of these processes of absorption of the workforce across different sectors of economy. It thus helps us in deconstructing the prevailing model of development and thereby testing the validity of the thesis of 'jobless growth' as argued in the existing literature, in the case of a regional economy like Odisha (Papola, 2013).

The analysis of NSS data for the distribution of employment across different industrial categories show us that, the percentage share of agriculture and allied activities in providing employment has decreased over time for both India and the State of Odisha[7]. It

[6] According to T K Oommen it is a perception that even the alternative perspectives of development also carry sometimes, of course with a different passion (see Oommen, 2004)

[7] The NSSO 50th round (1993-94) and 68th round (2011-12) has been used for the purpose of comparison.

is a general tendency that one can even see across all the three regions of Odisha. Nevertheless, the agricultural sector still constitutes a major share of employment. Both in India and Odisha, even today, more than 50% of the total work force are engaged in agricultural sector. At all India level, the percentage of people engaged in agricultural activities has been declined from 64.88% in 1993-93 to 48.90% in 2011-12, while the share of agriculture in GDP has registered a dramatic decline during the same period, from 28.24% to 14.37%. The case of Odisha is highly remarkable, as its 55.71% of the work force are still depended on agriculture, and it was around 74.44% in 1993-94. While the share of agriculture in state's domestic product made a sharp fall from 48.86% to 19.40% during this period.

Table 3. 2: Percentage Distribution of Employment and GDP across Different Industrial Categories

Percentage Distribution of Employment and GDP across Different Industrial Categories									
No	Industry	India				Odisha			
		GDP at factor cost at constant (2004-05) prices		Employment		GSDP at factor cost at constant (2004-05) prices		Employment	
		1993-94	**2011-12**	**1993-94**	**2011-12**	**1993-94**	**2011-12**	**1993-94**	**2011-12**
1	**Agriculture, hunting, forestry & fishing**	28.24	14.37	64.88	48.90	48.86	19.40	74.44	55.71
2	Mining & quarrying	3.26	2.11	0.72	0.54	2.80	3.70	1.18	0.55
3	Manufacturing	14.59	16.28	10.42	12.60	2.62	5.16	7.44	9.75
4	Electricity, gas & water supply	2.23	1.92	0.37	0.52	7.57	3.08	0.29	0.41
5	Construction	6.64	7.91	3.14	10.60	14.04	11.54	2.10	12.00
	Secondary Sector	26.73	28.22	14.66	24.26	27.03	23.48	11.01	22.70
6	Trade, hotels & restaurant	12.60	16.13	7.40	9.32	10.55	17.24	5.61	8.16
7	Transport, storage & communication	5.45	10.59	2.77	6.47	4.10	11.06	1.65	5.34
8	Financing, Insurance, Real estate & Business services	13.24	18.02	0.93	1.10	11.40	13.70	0.26	0.62

9	Community, social & personal services	13.47	12.68	9.36	9.95	11.95	15.11	7.02	7.48
	Tertiary Sector	44.76	57.42	20.46	26.84	38.00	57.12	14.55	21.59
	GDP at factor cost/Total	100	100	100	100	100	100	100	100

Source: Calculated from the NSS data on employment and unemployment (50^{th} round for 1993-94 and 68^{th} rounds for 2011-12); GDP from National Accounts Statistics, CSO; and GSDP data from Economic Survey of Odisha 2013-14.

It can also be discerned that most of the non-agricultural sectors, except mining and quarrying, has registered a rise in the share of employment during this time. In Odisha's case though the mining and quarrying sectors contribution to the total GSDP of the state has increased over the time, though marginally, but the percentage share of employment has registered a fall. Construction sector is the major sector providing employment, and its share has increased from 2.10% in 1993-94 to 12% in 2011-12 for Odisha and 3.14 to 10.60% at all India level. Interestingly at all India level the manufacturing sector employs about 12.60% of the work force, while it is only 9.75% for Odisha [See table 3 (B)].

At a regional level the trend is more or less similar [see table 3 (C)]. In all the three regions the agricultural sector continues to be the major source of employment, though it is showing a tendency of declining. The manufacturing sector is comparatively better in the Northern region, as it record about 15.10% of the total employment in 2011-12. The construction sector is the dominant sector after agriculture in the Southern region, while the tertiary sectorial activities like trade, hotel and restaurants is significant at the Coastal region. In all the three regions, especially at the Northern region, the major mining region of the State, the share of mining sector in total employment is showing a declining tendency over the years.

Table 3. 3: Percentage Distribution of Employment across Industrial Categories

Percentage Distribution of Employment across Industrial Categories						
Industrial Categories	**1993-94**			**2011-12**		
	Coastal	Southern	Northern	Coastal	Southern	Northern
Agriculture, Hunting Forestry & Fishing	71.86	81.66	72.84	49.79	62.00	55.09
Mining & Quarrying	0.69	0.56	2.00	0.04	0.45	1.13
Manufacturing	5.83	5.24	10.27	8.61	5.50	15.10
Electricity, Gas & Water	0.17	0.30	0.41	0.63	0.27	0.33
Construction	1.55	3.66	1.75	10.85	16.10	8.98
Trade, Hotel & Restaurants	7.72	4.27	4.32	12.17	5.90	6.56
Transport, Storage & Communication	2.14	0.66	1.74	7.14	3.40	5.55
Financing, Insurance, Real Estate and Bu	0.33	0.06	0.30	0.90	0.31	0.65
Community, Social and Personal Services	9.72	3.59	6.36	9.88	6.06	6.60
Total	100	100	100	100	100	100

Source: Own estimates based on 50th and 68th rounds of NSS data on employment and unemployment.

The analysis will not be comprehensive enough, unless we compare the rate of change in employment in various sector vis-à-vis the sectorial composition of GSDP growth rate for

the State. Such a comparison will enable us to understand how far this change in employment situation is proportional to the sector's share in the aggregate economic growth performance of the State. Thus in the following section we turn to look at the employment elasticity of growth across various sectors over the post reform period.

Employment elasticity is a measure of the percentage change in employment associated with a 1 percentage point change in economic growth. It, thus, enable us to summarize the employment intensity of growth. The fundamental premises of our argument is employment would acts as a link between economic growth and poverty reduction and thus indicate the very nature of economic growth. The following tables show that the aggregate employment elasticity of growth is very poor for both India and Odisha during the post-reform period. While for India a ten percent growth is needed to raise the employment about 1.9%, for Odisha the same amount of growth will generate a rise of 2% in employment. It has to be noted that, the employment elasticity is in the negative zone for both agriculture and, mining and quarrying sector for the case of both India and Odisha [table 3 (D)]. The negative employment elasticity of the mining sector is very much concerning at least for the case of Odisha, as it is the major destination of most of the recent investment in the state[8].

The negative elasticity of the agricultural sector, as one could notice in the case of Odisha, is something 'desirable' from a classical point of understanding as it may indicate the movement of people out of agriculture to other sectors in search for 'productive and gainful employment'. Accordingly the manufacturing sector is supposed to the desirable destination for such a transition, but the employment elasticity of the sector vis-à-vis the trajectories of growth is very disappointing. The employment elasticity of manufacturing sector of Odisha's is even lesser than that of the all India level, i.e., a ten percent growth is necessary to make a 3 percentage raise of employment at the all India level, while it is only 2 percent for Odisha. For both India and Odisha, it is the construction sector which is comparatively highly employment elastic. Notably,

[8] See http://www.orissalinks.com/orissagrowth/archives/5574; http://www.thehindubusinessline.com/economy/odisha-displaces-gujarat-as-indias-most-attractive-state-for-investment/article5415001.ece.

Odisha's employment elasticity in the construction sector is much higher than the all India level.

Thus it has to be noted here that the kind of economic growth that the state has been witnessing in the recent years are not contributing into the generation of substantial amount of new employment in the productive sectors like manufacturing, rather what we are witnessing is the trajectories of 'jobless growth'. Therefore one has to be very skeptical about the nature of industrial transformation is undergoing in the country, which seems to be highly unsustainable for a longer duration in its current forms (Bhaduri, 2007; Bhaduri and Patkar, 2009). Such a tendency was seldom desirable for the structural transition in the economy. All the existing models of industrial transition and the capitalist development, be it the case of Britain, America, Japan or Korea and Taiwan, do not match with this India/Odisha's experience, rather which question the very sustainability of this kind of growth performance (Byres, 1986).

Table 3. 4: Employment Elasticity with respect to GDP 1993-94 to 2011-12*

Employment Elasticity with respect to GDP 1993-94-2011-12							
No	**Industry**	**India**			**Odisha**		
		GDP growth (CAGR)	Employment Growth (CAGR)	**Employment Elasticity**	GDP growth (CAGR)	Employment Growth (CAGR)	**Employment Elasticity**
1	Agriculture, Hunting Forestry & Fishing	3.12	-0.25	-0.08	0.69	-0.45	-0.66
2	Mining & Quarrying	4.46	-0.31	-0.07	7.36	-3.08	-0.42
3	Manufacturing	7.48	2.37	0.32	9.59	2.66	0.28
4	Electricity, Gas & Water supply	6.03	3.13	0.52	2.96	4.73	0.63
5	Construction	7.85	8.07	1.03	10.84	0.83	13.13
	Secondary Sector	7.18	4.12	0.57	5.04	5.18	1.03

6	Trade, Hotels & Restaurant	8.25	2.60	0.31	8.54	3.24	0.38
7	Transport, Storage & Communication	10.57	6.02	0.57	11.34	7.67	0.68
8	Financing, Insurance, Real Estate and Business Services	8.59	2.25	0.26	6.84	5.97	0.87
9	Community, Social and Personal Services	6.54	1.66	0.25	7.12	1.51	0.21
	Tertiary Sector	8.26	2.82	0.34	8.08	3.35	0.41
	GDP at factor cost/Total	6.88	1.32	0.19	5.82	1.16	0.20

Source: Own estimates based on 50th and 68th rounds of NSS data on employment and unemployment and National Accounts Statistics, CSO, various years and GSDP data from Economic Survey of Odisha 2013-14.

Note: * Adjusted to Census Population.

3.4 Rich land and Poor people?

In the previous section we have looked at the effectiveness of the growth trajectories in generating the employment opportunities for the people with a theoretical understanding that, employment act as a link between economic growth and poverty reduction serves as a significant variable in the attainment of inclusive growth and sustainable development (Misra and Suresh, 2014). It has been noticed from the preceding discussion that the kind of growth path followed by the country in general and Odisha in particular for the last few decades were not able to generate effective employment as one could expect and thus it act as a hurdle in the so called transition from 'farm to factory'. For the case of Odisha, though it was the mining sector which attracts most of the recent developmental investments, the sector is registering a negative growth rate in terms of employment over time. Therefore it would be better to look at the other end of the story in term of poverty scenario in the State of Odisha vis-à-vis the national level and the other investment prone States. This will enable us to deconstruct the growth trajectories in a much more detailed manner with respect to their abilities to link the human agency with capital and thus in

ensuring the benefits of production to the human beings and thus critically testing the thesis of 'rich land and poor people' in the context of Odisha.

The following table [table 3 (E)] show the incidence of poverty across the major States of India from 1993-94 onwards. It can be noticed from the table that the head count ratio of poverty has been declining over the time since 1993-94 onwards for all most all States. In few States like Andhra Pradesh and Chhattisgarh the head count ratio of poverty for the rural area have registered a marginal increase during this period. Whereas for the States like Haryana, Uttarakhand, West Bengal, Bihar, Jammu and Kashmir, Jharkhand and Uttar Pradesh the HCR registered an increase in the urban areas. Odisha recorded a fall in the HCR for this period both in the rural and urban areas, respectively from 49.8% to 36.34% and 40.64% to 29.1%. But still Odisha ranks second from the bottom, next after Chhattisgarh, in terms of incidence of poverty both at rural and aggregate level. Therefore it has to be noted that though the kind of growth trajectories the State has been following might be able to bring down the magnitude of HCR, but still it continued to be above the national average.

Table 3. 5: Poverty Incidence (HCRs) by Sector for the Selected States of India 1993-94 to 2009-10.

Poverty Incidence (HCRs) by Sector for the Selected States of India									
State	1993-94			2004-05			2009-10		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Himachal Pradesh	30.33	9.26	28.55	10.53	3.19	9.83	1.56	7.88	2.1
Kerala	25.38	24.31	25.12	13.2	19.99	14.8	2.02	11.43	4.47
J & K	18.22	5.12	13.32	4.27	7.4	5.06	4.4	7.12	5.04
Punjab	11.48	10.89	11.31	9.02	6.29	8.14	3.21	8.77	5.16
Uttarakhand	24.83	17.85	23.4	40.65	36.5	39.68	4.03	24.69	9.31
Haryana	27.99	16.47	25.02	13.25	14.48	13.57	9.35	18.02	11.94
Gujarat	22.23	28.28	24.2	18.89	13.31	16.96	13.14	10.13	11.99

Tamil Nadu	32.97	39.96	35.43	22.99	22.46	22.79	12.75	14.6	13.57
Rajasthan	26.38	31.03	27.45	18.32	32.31	21.44	12.46	19.03	14.05
Andhra Pradesh	15.96	38.8	21.92	10.47	27.36	14.79	17.13	16.46	16.94
Assam	45.21	7.93	41.41	22.11	3.65	20.41	17.93	12.29	17.35
Maharashtra	38.14	34.93	36.95	29.57	32.1	30.59	17.74	17.63	17.69
West Bengal	41.18	22.95	36.94	28.36	13.5	24.73	15.95	23.9	17.87
Karnataka	30.04	39.72	32.8	20.67	32.61	24.34	25.07	19.66	23.18
Uttar Pradesh	43.09	35.64	41.63	33.3	30.13	32.68	27.44	37.69	29.5
Jharkhand	62.17	26.51	55.29	46.15	20.25	41.98	30.67	31.84	30.91
Madhya Pradesh	39.24	48.97	41.74	36.79	42.72	38.18	33.67	27.36	32.13
Bihar	56.49	40.75	54.98	42.54	36.26	41.96	34.38	42.64	35.22
Odisha	49.78	40.64	48.62	46.93	44.72	46.63	36.34	29.1	35.3
Chhattisgarh	44.4	44.24	44.37	40.77	42.18	40.99	48.32	28.19	44.74
India	36.87	32.77	35.85	28.03	25.81	27.47	21.89	20.76	21.58

Source: Thorat, S and Dubey, A (2013). *How Inclusive has Growth Been During 1993/94-2009/10? Part-II: State-Level Analysis*. UNDP.

The picture will become clearer if we can look at the level of average monthly per capita consumption expenditure (MPCE) of the State vis-à-vis the national level and across other States. The average MPCE has recorded an increase in all the sectors under consideration across most of the States, though the States of Andhra Pradesh and Karnataka recorded a very marginal increase in the rural MPCE [see table 3 (F)]. For Odisha, the rural MPCE registered an increase of about 16.78% during 1993-94 to 2009-10, while the urban MPCE of about 45.01% and making an aggregate change of about 24.45% for the entire period. Though it is comparable to the other poor income states like Bihar, UP, Jharkhand, Chhattisgarh and MP, it is still much below the national average.

Table 3. 6: Level and Change in Average Monthly Per-Capita Expenditure by Sector for the Selected States

Level and Change in Average Monthly Per Capita Expenditure by Sector for the Selected States												
State	1993-94			2004-05			2009-10			% age Change 1993/94 - 2009/10		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
A P	465.1	672.5	519.2	525.7	858.2	610.7	466.3	1097	643.5	0.26	63.12	23.94
Gujarat	477.4	725	557.9	537.2	977.6	689.1	565.8	1182.6	800.4	18.52	63.12	43.47
Haryana	595.2	771.2	640.6	754.8	951.5	807.2	825	977.9	870.8	38.61	26.80	35.94
H P	551.2	1237.5	609.1	743.8	1157.8	783	1058.7	1338	1082.8	92.07	8.12	77.77
KA	446.3	716	523.3	485.6	881.2	607.4	448.3	1065.4	663.7	0.45	48.80	26.83
Kerala	600	839.7	658.7	882.8	1100.9	934	1341.8	1692.2	1432.9	123.63	101.52	117.53
MH	444.6	871.1	603.5	499.5	930.7	673.3	549.9	1359.3	887.1	23.68	56.04	46.99
Punjab	673.7	782.4	705.1	748.3	1104.2	862.8	879.1	1061.1	943	30.49	35.62	33.74
T N	458.8	702.5	544.7	526.5	938	684.8	556.8	1034.9	769.7	21.36	47.32	41.31
UK	484.4	734.8	535.9	595.9	842.7	653.6	821.5	778.6	810.6	69.59	5.96	51.26
W B	442.2	783.9	521.7	514.2	1023.4	638.8	570.6	870.9	643.3	29.04	11.10	23.31
R J	513.9	704.5	557.7	542.7	802.6	600.6	578.7	974	674.7	12.61	38.25	20.98
CH	366.1	623.1	411.	403.	836.3	470	392.4	816.7	468.1	7.18	31.07	13.78

			4	8								
Odisha	367	638.7	401.6	396.6	678	435.1	428.6	926.2	499.8	16.78	45.01	24.45
Assam	406.4	742.6	440.7	512	961.7	553.6	582.3	803.1	604.9	43.28	8.15	37.26
Bihar	345	497.8	359.7	392.2	605.2	411.8	435.4	540.5	446.1	26.20	8.58	24.02
J & K	571	895.7	692.4	744.9	812	761.8	770.9	953.3	813.5	35.01	6.43	17.49
JH	337.2	653.1	398.2	399.8	860.3	474	468	687.9	512.2	38.79	5.33	28.63
M P	423	619.9	473.8	417	763.4	498.1	453.1	887.6	558.8	7.12	43.18	17.94
U P	430.8	626.8	469.2	490.5	738.3	539.2	500.5	675.7	535.7	16.18	7.80	14.17
India	447.7	743.6	521.3	511.2	895.6	608.6	554.6	1029.9	683.2	23.88	38.50	31.06

Source: Thorat, S and Dubey, A (2013). *How Inclusive has Growth Been During 1993/94-2009/10? Part-II: State-Level Analysis*. UNDP.

The following table [Table 3 (G)] further substantiates the relative position of Odisha vis-à-vis the national MPCE average. The ratio between Odisha's rural MPCE and that of National average MPCE was 0.820 in 1993-94, while it further declined into 0.773 by 2009-10. It was happening when most of the low income states excluding Chhattisgarh registered an increase in this proportion. But interestingly some of the high income states like AP and Karnataka has followed this trend along with Odisha.

Table 3. 7: Average Monthly Per Capita Expenditure by Sector for the Selected States as a Ratio of the National Average

Average Monthly Per Capita Expenditure by Sector for the Selected State as a Ratio of the National Average			
	1993-94	**2004-05**	**2009-10**

State	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Andhra Pradesh	1.039	0.904	0.996	1.028	0.958	1.003	0.841	1.065	0.942
Gujarat	1.066	0.975	1.070	1.051	1.092	1.132	1.020	1.148	1.172
Haryana	1.329	1.037	1.229	1.477	1.062	1.326	1.488	0.950	1.275
Himachal Pradesh	1.231	1.664	1.168	1.455	1.293	1.287	1.909	1.299	1.585
Karnataka	0.997	0.963	1.004	0.950	0.984	0.998	0.808	1.034	0.971
Kerala	1.340	1.129	1.264	1.727	1.229	1.535	2.419	1.643	2.097
Maharashtra	0.993	1.171	1.158	0.977	1.039	1.106	0.992	1.320	1.298
Punjab	1.505	1.052	1.353	1.464	1.233	1.418	1.585	1.030	1.380
Tamil Nadu	1.025	0.945	1.045	1.030	1.047	1.125	1.004	1.005	1.127
Uttarakhand	1.082	0.988	1.028	1.166	0.941	1.074	1.481	0.756	1.186
West Bengal	0.988	1.054	1.001	1.006	1.143	1.050	1.029	0.846	0.942
Rajasthan	1.148	0.947	1.070	1.062	0.896	0.987	1.043	0.946	0.988
Chhattisgarh	0.818	0.838	0.789	0.790	0.934	0.772	0.708	0.793	0.685
Odisha	0.820	0.859	0.770	0.776	0.757	0.715	0.773	0.899	0.732
Assam	0.908	0.999	0.845	1.002	1.074	0.910	1.050	0.780	0.885
Bihar	0.771	0.669	0.690	0.767	0.676	0.677	0.785	0.525	0.653
Jammu & Kashmir	1.275	1.205	1.328	1.457	0.907	1.252	1.390	0.926	1.191
Jharkhand	0.753	0.878	0.764	0.782	0.961	0.779	0.844	0.668	0.750
Madhya Pradesh	0.945	0.834	0.909	0.816	0.852	0.818	0.817	0.862	0.818
Uttar Pradesh	0.962	0.843	0.900	0.960	0.824	0.886	0.902	0.656	0.784

Source: Own Estimates, based on the Table no 3 (F).

Thus it has to be argued that the kind of growth pattern, that we have been following for the last few decades as a legitimate precursor of historic "transition from farm to factory", a model that we have taken for granted from the West is not able to ensure a

productive engagement of labour with capital, and thus in ensuring the benefits of production to all. What we have been witnessing is a processes of alienation of the labour through the notorious processes of accumulation by dispossession and intensive capitalization of production processes. It, therefore, involves a process of production of a new class of proletariats, whose labour is not needed by the global capitalist system, though their land might be taken away. The situation of Odisha in terms of head count ratio of poverty and the distance from the national average MPCE, raises the question of economic inclusion and the existence of a paradox of 'rich land and poor people' (Panda, 2008). It will bring the way region like Odisha has been incorporated into the larger process of national development under serious question, whereby one could get a feel that Odisha continues to be a colony for the modern Indian economy to flourish. That the resources of the region are being take away at the cost of local lives and livelihoods, even without providing alternative livelihood opportunities for the locals. The conditions of the oustees of Hirakud Dam, even today, strongly shows the kind of approach the government has been following towards the people of the region (Fernandes and Asif, 1997; Pandey 1998)[9]. Thus it has to be stated that Odisha continues to be at the margins of India's developmental trajectories. The rising discontent over the proposed extractive industries in the state has to be understood as a failure of 'de'-colonization and neo-liberal strategies in raising up to the demands of the popular expectation. It is in this context one need to look at the emerging discontent among the locals towards the upcoming new "developmental projects".

3.5 Conclusion

The empirical evidence make us to believe that, the kind of developmental paradigm that we have been following involves the dispossession of rural population from the means of production, the land, and throwing them into the ocean of uncertainties, without providing any security of employment, to be a part of the 'reserved army' of unemployed. Therefore the kind of emerging opposition towards the land acquisition and the dominant

[9] The oustees of Hirakud dam, one of the 'temples of modern India', are struggling even today to get better compensation measure. See report titled "Hirakud Dam Oustees Demand Better Deal" at The New Indian Express dated 26/07/2014 at: http://www.newindianexpress.com/states/odisha/Hirakud-Dam-Oustees-Demand-Better-Deal/2014/07/26/article2349722.ece.

model of ‘development’ have to be understood from this perspectives of uncertainties along with the socio-economic interactions of the locals with the resources under question. So one cannot criticize these movements peripherally as ‘romantic’, ‘anti-developmental’ or ‘environmental-terrorism’, rather the nature and organization of these movements has to be analyzed based on an understanding about the character of the regions where these movements are located and the way this region has been absorbed into the larger economy of the nation over time.

The changing land-use pattern and the composition of gross state domestic product do shows the kind of economic transition the state has been witnessing. But the empirical evidences on the employment structure makes that structural transition in favour of non-agricultural activities, as being observed in the land-use pattern and GSDP composition, disappointing. It proves the thesis of ‘jobless growth’ and the inability of the secondary sector, especially the mining and quarrying and the manufacturing sector in absorbing the free labour released from the primary sector. The grave incidence of poverty in the state and the levels of average MPCE as observed in the official estimates itself, proves the argument of ‘rich land and poor people’ is something of very much reality for the case of Odisha. Thus it has to be stated that the region of Odisha aptly presents a classic case of colonial/post-colonial and neoliberal underdevelopment (Pati, 2012).

The emerging popular resistances, against the upcoming projects for extractive industries in the state, have to be located in the larger terrains of the historical experiences of integration of the region within the nationalist framework of development. Therefore we have to have a strong materialistic framework to look at the issues like ‘environmental movements’, as they were not simply about any romantic notion of past or even nature rather is more to do with an environment, which has been seen as a *functional requirement for a sound local economy* (Emma, 1998: 12). The moment we miss this issue of the material realities that these movements has been raising up, we will be missing the real crux of those movements itself. In the long run, that may results in what has happened to the case of Uttarakhand, where the local activist of the celebrated Chipko movement had to say as: *"We got nothing from Chipko. Even our hakhakooks (traditional rights and customs) to forest produce, have been taken away from us”*

(Mitra, 1993). And the state has also witnessed a strong regional movement, emerged out of this regional disparity and which has successfully (?) ended up with the creation of new state of Uttarakhand (Emma, 1998) Thus it has to be noted that these movements not only to do with the issue of environment alone, rather the issues of the regional economies and ecologies and ways it has been incorporated into the larger frameworks of capitalist development is also being involved in it. Thus, it is not simply a contestation between the 'moral economies of the peasants' and the 'market economy' as being generally argued (Bundyopadhyay and Shiva, 1988; Guha, 1989), rather of movements with concerns of strong agrarian question and the question of Capitalist transition and the role of the state, in the third world. It is from this perspective that one needs to critically engage with any movements like anti-POSCO movement, to understand their internal dynamics and spatial organization, and to getting into the discourses around the questions like whether the marginal social groups understood the meaning of the broader struggles associated with anti-colonial politics' (Pati, 2012).

Thus unlike many critics of globalization, we proceed to critically understand the micro politics of popular resistance, against the existing dominant developmental models, not with an assumption that rural people reject new products and labor regimes in favor of locally oriented production on small family farms. In the context of the regional economic experiences that we have discussed so far, I would propose to characterize the rural people's collective mobilization- to resist eviction, or to reoccupy disputed land, or scramble to hold onto their tiny 'inefficient' plots- not necessarily as something intended to conserve an ancient way of life. "More often, it is to back-stop economic strategies that involve family members seeking work far and wide, in a context where national economies, and the global capitalist system, fail to generate off-farm jobs that pay a living wage". In such a situation, even a tiny patch of land is a crucial safety net and that needs to be defended at any cost (Li, 2011). Thus in the following chapter we will try to critically engage with the ongoing anti-POSCO movement, with an intension to explore the 'popular expectations' behind the movement and how far it have an alternative vision of development as being argued in the literature.

Chapter 4

Tracing the Anti-POSCO Movement in Jagatsinghpur, Odisha: A Case Study

"You take my life when you do take the means whereby I live."

(Shylock in Shakespeare's *The Merchant of Venice*, Act 4, Scene 1)

4.1 Introduction

As the global capitalism transitioned from controlling colonies to cultivable lands in the independent global south, the third world ecology is increasingly becoming a battlefield between the international/national capital and the indigenous communities/the locals. The emerging popular protests around the natural resources of the third world, be it in Africa, Asia or Latin America, has to be seen from this vantage point. In the preceding chapters we have argued that the environmentalism in India is more than of a romantic appreciation of the nature, as it is highly rooted in a functionalist persuasion of nature, where the local lives and livelihoods are deeply linked to the environment. Thus it has been acknowledged that, the environmental movements of the global south/ India are more of a manifestation of the popular reaction and resistances to the ongoing processes of 'accumulation by dispossession' and the subsequent 'production of nature'. It is not the production of nature, per se, that has to be problematized as the environmentalism framework is interested in doing. The production of nature, as a mechanism involving the dialectical relationship between the human and nature, is inevitable to the very biological existence of human kind. The (capitalist) production of nature at a global scale, one of the major goal of capitalism, makes significant contribution to this process. Such a process involves not only a quantitative but also a qualitative change in the human's relation with the nature, and it involves the production of specific pieces of matter over the world (that is, their form is changed) according to the abstract laws, needs, forces, and accidents of capitalist society (Smith, 1984). As the production of nature under the capitalist system is guided by the inexorable pursuit of accumulation of surplus value, it is largely facilitated through the processes of 'accumulation by dispossession' under the neoliberal global order. The environmentalism under such a hegemonic system of production of nature and accumulation processes, therefore, is not something about to what extent nature is

controlled (an outdated question framed in the dichotomous language of first and second nature, of pre-capitalist mastery and non-mastery over nature), but the question really is 'how we produce and who controls this production of nature'.

The dominant process of production of nature by the capital necessarily involves the accumulation of land (or any other natural resources) in few hands by both the economic and extra-economic means. These processes of dispossession from the means, whereby they live, attribute certain identity to the actors at the locale with respect to their interaction with those natural resources/environment. In the beginning this identity is largely of being 'the displaced' or 'the depeasantised', but the future direction it would take, and its potential for a social movement is decided by the local political economy structured by the interplay of the local context, the state, and the capital. Thus, the environmental movement has to be seen as a symptom of the issues of mainstream developmental trajectories, how certain regions and their ecologies are getting incorporated into the larger narratives of the national or international developmental paradigms. This chapter, therefore, try to empirically engage with the analytical framework of political ecology thesis of the 'environmental identity and social movement', by getting into the question of "how the political and social struggles are linked to basic issues of livelihood and environmental protection" (Robbins, 2004; p. 15). Through a case study of the ongoing anti-POSCO movement by the people of 'Dhinkia Charidesh '[10] in the Jagatsinghpur District of Odisha, against the proposed POSCO project, the largest FDI in India, we try to engage with a fundamental questions as to how do the environmental movements evolve by consolidating an identity vis-à-vis the impact of land dispossession, involving the popular concerns against the threats on the bases of livelihood derived from nature, driven by the capitalist global order. Thus, the entry point of our analysis is to locate the environmental movements as a collective action by the 'place-based actors' against the 'non-place based actors' like the state or the capital.

This chapter, with all its limitations, thus tries to reinvent the theoretical frameworks of political ecology by placing the question of space and scale at the center. The central

[10] Dhinkia Charidesh is a colloquial word for the Villages.

argument is that the environmentalism of the global South couldn't be simply an 'environmentalism of the poor', a conflict between the 'ecosystem people' with the 'omnivore';it is highly place oriented, where the character and the role of the actors, to a great extent, are determined by their relation with the nature, the accumulation processes and the dominant political dynamics. The major objective, here is, firstly, to understand these movements/resistances in their locale terrains of origin. The treatment is historical, contextualizing the present movement in the backdrop of the history of similar movements in the state of Odisha, and subsequently pointing out the particularities of the anti-POSCO movement by tracing its evolution. Tt is argued that environmentalism of the neoliberal ages has to be understood in relation to the dynamics of capitalist transitions in local contexts, where the capitalist in the local context acquires land by using the state apparatus while the 'overriding logic of global capitalism serves as a context in which some claims over land are privileged over others' (Mishra, 2011). Thus the attempt here would be to trace the anti-POSCO movement with respect to its: 1) scale and spatial context of organization, 2) targets; 3) strategy and tactics; 4) political organization; 5) socio-political composition; 6) goals; 7) ideologies; and 8) outcome. While looking at these aspects, the fundamental points of enquiry are:

- Do the majority of the locals perceive the new processes of production of nature as an exclusionary process and if so, how? How far this is able to build a collective consciousness and action among the highly segregated rural communities?
- How do the spatial specificities get connected with the mechanisms of collective action, and has the anti-POSCO movement been spatially organized accordingly?
- How do the neo-liberal state as an agent of the global capital interact with the community? How does this interaction shape the nature, strategies and outcomes of the movements over time?

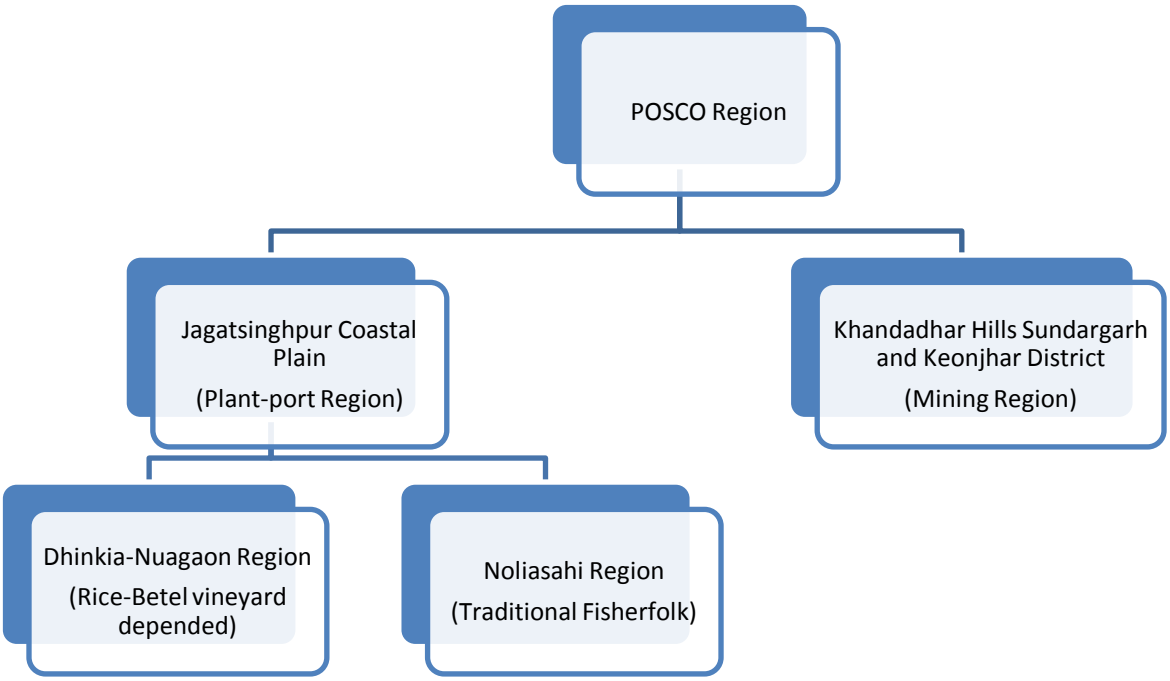
4.2 Locating the Movement

The stories of the popular protests around the POSCO Project have been brought into the public discourses mainly by the media and which is largely skewed to the protests at the Plains, i.e., the Plant/Port site. Consequently, the forms of popular resistances and the

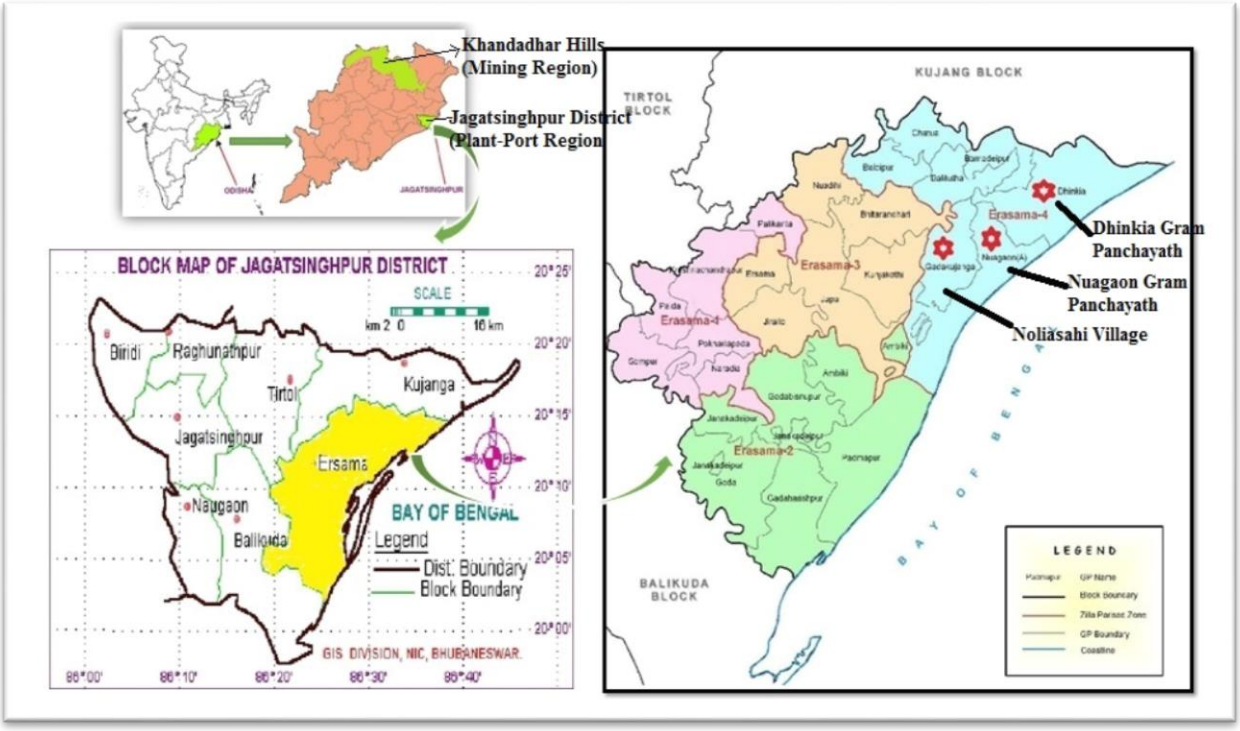
concerns of the people of the mining site is almost missing, except a few scattered accounts. Therefore, it would be desirable to locate the proposed project sites on the map of Odisha and then to look at the typologies of movements, which were there on the ground.

The terrains of popular protests around POSCO can be divided into two distinct spatial units based on their geographical profile- including the physiography and human-nature interactions [see figure: 4 (i)]. The mining project for the POSCO is proposed to be located on the Khandadhar hills in the western Odisha, and this constitutes the first region; the Coastal Plains of Ersama in Jagatsinghpur district, in the eastern Odisha, where the iron ore plant and the port is proposed to be located is the second one. Both the regions are highly distinctive in their physical, social and historical characters. The Khandadhar region extend over the districts of Keonjhar and Sundargarh, and is a tribal dominated region with high degree of dependence on the natural habitat, the coastal region in the Jagatsinghpur district, on the other hand, is dominated by the caste segregated Hindu society with a strong agrarian economy, also with a higher level of industrialisation centered around the Paradeep port region. Historically, the Khandadhar region was part of the princely states and got merged with the provincial Odisha in 1948 while the Jagatsinghpur was a part of the district of Cuttack in the British India.

Figure 4. 1: POSCO Region: A Micro Regionalization



Map 4. 2: The POSCO Regions



Source: Compiled from various sources such as the Census of India 2011, GIS Division, NIC, Bhubaneswar

4.2.1 The Plant-port Region: Jagatsinghpur

The district of Jagatsinghpur is located in the North Eastern part of Orissa, lies between 19º 58' and 20º 23' North latitude and between 86º 3' and 86º 45' East longitude. It is bounded on the North by Kendrapara district, on the South by Puri district, on the East by Bay of Bengal and on the West by Cuttack district. The district with a geographical area of 1759 sq. KMs is the smallest district in Odisha in terms of territorial extent. It was carved out from the former undivided Cuttack district on 1st April 1994. The district is famous for the Paradeep port.

Jagatsinghpur is spread over the alluvial plains made by the tributaries and distributaries of the rivers Mahanadi, Kathojodi, and Devi. The huge deposit of silt of rivers has been building up the present alluvium tracts at their meeting places with the sea. Creation of swamps at the meeting places with the sea has made for a conducive habitat for dense jungles that are found there. This vegetation cover is significant for the region as it protects the region from the frequent cyclones, to which this area is highly prone to. As per the agro-climatic classification the district is situated in the coastal plain zone, with vast deltaic alluvial plains of the river system with numbers of estuaries, creek on the coastal belt. The Deltaic alluvial soil is found on the western side of Balikuda, Ersama, Raghunathpur and Jagatsinghpur and texture of the soil are generally sandy, sandy loam, silty loam, clay loam to heavy clay. The availability of fertile alluvial soil provides the prerequisite conditions for an agrarian economy to flourish in the region.

As per the 2011 Census, the district has a total population of 11,36,971, of which with 5,77,865 are males, and 5,59,106 are female. The total SC population of the District is 2,48,152 (21.82%), and Scheduled Tribes constitute only about 0.69% (7862) of the total population. The average literacy rate of the district is 86.6 percent, with 92.4 percent of literacy among the males and 80.6 percent among the females. Administratively the district is divided into 8 Blocks, 8 tehsils, 194 Gram Panchayats and 1320 villages. The proposed POSCO integrated Steel plant and the Port will be located at the Ersama Block of Kujang Tehsil in the coastal zone of the district.

Table 4. 1: Demographic Profile of the Plant/Port Region

Demographic Profile of the Plant/Port Region								
Gram Panchayat	**No of Household**	**Total Population**	**Sex Ratio**	**%_SC**	**%_ST**	**% Literate**	**%_Male Literate**	**%_Female Literate**
Dhinkia	2064	9736	970	37.36	0.14	76.62	54.14	45.86
Garhkujang	873	3833	963	35.98	0.55	68.88	55.57	44.43
Nuagan	1248	5185	939	10.55	0.00	79.90	54.60	45.40
Ersama Block	33620	145925	988	20.23	0.43	75.90	54.11	45.89
Jagatsinghpur	**261307**	**1136971**	**968**	**21.83**	**0.69**	**78.19**	**54.11**	**45.89**

Source: Census of India, 2011 as Compiled by NIC Jagatsinghpur, Odisha.

The Agrarian Situation of the Region

The district has about 2.71% of the total population of the state and 2.30% of the total workers. Of the total workers about 71.89% are main workers and the rest are marginal workers. Out of the total, main workers about 31.73% are cultivators and 19.32% are agricultural laborers. While the cultivators and agricultural labors constitute about 16.97% and 47.83%, respectively, among the marginal workers. Thus, even after all the industrialisation advancements with the commissioning of Pradeep port, it can be noticed that a majority of the working population in the district are still dependent on agricultural sector for employment, and which is comparatively higher than the state average [see Table: 4 (B)]

Table 4. 2: Economic Profile: A Comparison of Jagatsinghpur District with Odisha and India

Level	**% Workers**	**% Main**	**% Marginal**	**Main Workers**		**Marginal Workers**	
				CL Main	AL Main	% CL Marginal	% AL Marginal
India	39.83	75.31	24.69	26.43	23.74	19.22	48.88
Odisha	41.79	61.04	38.96	30.63	22.61	12.06	63.20

Jagatsinghpur	35.50	71.89	28.11	31.73	19.32	16.97	47.83

Source: Census of India. 2011.

Note: AL- Agricultural Labour; CL- Cultivators.

Rice is the major crop cultivated in the district. In the coastal areas, the people are also engaged in the fishing activities. The district has witnessed a rise in the productivity of rice from 1710Kg/ha in 2000-01 to 1882Kg/ha in 2005-06, while it has declined to 1579Kg/ha by 2010-11 [See Table 4 (C)]. The comparative positions of the state and the district has changed over time. The productivity at the state level was lower than the district average in 2000-01, and it continued to be so till 2005-05. By 2010-11, the state-level productivity of rice had increased to 1640Kg/ha, which was comparatively higher than the district average. The decline in the productivity of rice in the district cannot be attributed to the decline in production due to the area alone, as the same phenomenon is visible at the state level (Table 4(C)). The quality of area lost, and compulsion to shift to alternative livelihoods due to loss of land-based livelihoods in the district need to be analysed to understand this pattern.

Table 4. 3: Area, Production and Yield of Rice: A Comparative Profile of Odisha and Jagatsinghpur District 2000/01 - 2010/11

Area, Production and Yield of Rice: A Comparative Profile of Odisha and Jagatsinghpur District **2000/01 - 2010/11**						
Year	**Odisha**			**Jagatsinghpur**		
	Area (Ha)	Production (Tonnes)	Yield (Kg/Ha)	Area (Ha)	Production (Tonnes)	Yield (Kg/Ha)

2000-01	4434000	4614000	1041	93000	159060	1710
2005-06	4479000	6963000	1554	91270	171790	1882
2010-11	4226000	6931000	1640	88030	138960	1579

Source: Compiled from Odisha Agricultural Statistics 2010-11, Government of Odisha and Ministry of Agriculture, Government of India.

Based on the nature of human interaction with the natural environment, the plant-port region can be further divided into two sub-regions:

a. The Dhinkia-Nuagan Region

b. The Noliasahi Region

Though both the regions are located in similar geographic environs, at the coastal plains of Odisha, their micro regionalization is based on their economic engagement with the natural habitat. While in the Dhinkia-Nuagan region most of the people are engaged in the agricultural activities, especially the cultivation of betel leaves and paddy, the people in the Noliasahi region are more dependent on fishing from the adjoining creek of Jatadharia. The high percentage of cultivators and agricultural labours among the main workers in the Dhinkia-Nuagan region as compared to the Noliasahi region is an indication of this difference in the micro regional economies [Table 4 (D)]. This difference in the economic engagement is reflected in their cultural milieu as well. Thus even with their geographical proximities, both the regions show a cultural distinctiveness.

Table 4. 4: Economic Activity Profile of the Plant/Port regions

						Main Workers		**Marginal Workers**	
GP	**Village/District**	**% Workers**	**% Main**	**% Marginal**	**% Non-work**	% CL	% AL	% CL	% AL
DK	Gobindapur	29.49	54.51	45.49	70.51	51.93	27.89	39.67	50.82
DK	Dhinkia	31.68	86.59	13.41	68.32	53.08	30.11	27.27	32.95
NG	Nuagan	34.52	67.43	32.57	65.48	65.45	9.61	26.07	53.17

GK	Garhkujang	40.06	67.27	32.73	59.94	48.48	35.83	1.10	90.11
GK	Bhunyapal	38.82	73.51	26.49	61.18	5.41	92.79	5.00	95.00
GK	Polanga	27.53	86.24	13.76	72.47	82.98	14.89	13.33	86.67
GK	Bayanalkandha	24.19	68.89	31.11	75.81	93.55	3.23	7.14	92.86
GK	Noliasahi	32.95	95.72	4.28	67.05	35.77	7.72	0.00	0.00
	Jagatsinghpur	35.50	71.89	28.11	64.50	31.73	19.32	16.97	47.83

Source: Census of India, 2011

Note: DK- Dhinkia Gram Panchayat, NG- Nuagan Gram Panchayat, GK- Garhkujang Gram Panchayat

Paddy fields near the Dhinkia Village. according

A kitchen garden in the Dhinkia village,

to a local farmer it used to give most of the vegetables for the household's consumption.

A Betel Vineyard at Patana Hamlet, October 2014

The Betel plants are grown under the shadow, made with the coconut leaves, Patana Hamlet, October, 2014.

A Fisher man's house on the banks of the Jatadharia Creek, Noliasahi, Novemebr 2014.

The Jatadharia Creek near Noliasahi. Note the traditional fishing boat on the bank. Noliasahi, 2014.

4.2.2 The Mining Region: Khandadhar Hills

The mines earmarked for POSCO would be located in the Khandadhar region, straddling across two districts– Keonjhar (also called Kendujhar) and Sundergarh. As the specific coordinates of the POSCO mines are still unclear, the exact villages going to be affected by the project cannot be identified. Various private studies based on the data drawn from government notices and two lawsuits filed against the allotment of mines to POSCO, indicate that 32 villages will be impacted in Keonjhar district, residents of 12 of which will face displacement, and residents of the remaining 20 villages will lose their sources of livelihood and access to water. As somewhere estimated, based on the 2001 census, the project will affect about 5886 persons in the Keonjhar District. Of this total projected affected population, 4,830 are STs 171 are SCs, and 885 belong to other social groups. In Sundergarh district, the number of villages expected to be impacted by the project is around 84. Most of the residents in these villages are belonged to the tribal community (Mining Zone People's Solidarity Group, 2010).

The affected villages are spread between the higher reaches of the hill range and the foothills. And are inhabited mostly by the Bhuiyan Adivasis, though other groups such as the Juang and Munda also reside here. The residents practice a mix of shifting and settled agriculture; those in the higher reaches of the hills are more likely to practice shifting agriculture than those in the foothills. Besides agriculture, residents are highly dependent on surrounding forests for minor forest produce both for household consumption and to sell in the market. Some of the forests product thus sold have a considerably high market value. The forests are also very rich in medicinal plants and herbs.

The Khandadhar mountain range is the source of the river Baitarani and some other smaller streams. The river Brahmani, one of the major river in Odisha, also flows through this area. The Center for Science and Environment (CSE), in its State of India's Environment report, states that "watersheds and rivers in Orissa" are "under threat" because of the impact of mining and industry, and in fact the report lists River Brahmani in Orissa as one of the 10 worst polluted rivers of India. As reported by the earlier studies by quoting the Central Underground Water Board, the previous mining in the Keonjhar

area has already led to a decline of four meters in the underground water level in that area. About forty percent of the region's 8,000 tube wells do not work, and most of the irrigation in the area can no longer depend on water from the Khandadhar waterfalls. In fact, a report by Duskar Barik, a local activist in the Keonjhar region claims that almost all perennial streams in the mining area of Keonjhar district are dead. It is because of the mining companies consider the origins of natural and perennial streams as perfect site for extracting good quality iron ore, and that, in turn, has led to the death of these streams. According to Barik, "in the Gandhamardan Hill range eight perennial streams have been killed by the Orissa Mining Corporation (OMC) and its sub-contractor Jyoti Construction Ltd. by carrying out the mining activities at their origins", and this has affected at least 9 villages in the Keonjhar area. The origin of Brahmani River, which is a sacred place for the local Adivasis, has also been affected by the mining by Jyoti construction Ltd. Since the people in the area primarily survive on agriculture and that is dependent on the rivers and streams for irrigation, the destruction of these water bodies has substantial destructive impact on the livelihood of the people. In short, these studies show that further mining in the area would lead to the complete drying up of the main water bodies of the region and that would have sever manifestation on the local lives and livelihoods.

The picture becomes more serious when we look at the occupational profile of the region as well. Though Sundergarh and Keonjhar are the mining districts of Odisha, a majority of the workers are engaged in agricultural activities even today. According to the 2011 census, about 35% of the main workers of the Sundergarh district are engaged in agricultural activities, while for Keonjhar, it is, even higher, about 55%, which is even higher than the national and state averages [see Table 4 (E)]. It reveals that, even though the region serve as the site of extraction of mineral resources for the emerging economies of Odisha and India, the majority of the working population of the region are not able to find their 'bread and butter' from the mining sector and thus, are still dependent on agriculture. It would to be noteworthy to mention here that, as the mining activities increases at the cost of agriculture, it denotes nothing but a takeover of the labour intensive activities by the capital intensive activities and thus a general deterioration in the standard of living. Other than this, in the agricultural sector, land rights, though skewed in itself, is much better distributed compared to the mining activities, particularly

if it is replaced by a private sector ownership. Thus the mining is in a way imposing a double burden on the local population; a burden of not offering employment, and displacing the local population not only for acquiring land for mining but also by deteriorating the local ecologies (Mishra, 2010; Mining Zone People's Solidarity Group, 2010).

Table 4. 5: Economic Profile of the Mining Region

Level	% Workers	% Main	% Marginal	Main Workers		Marginal Workers	
				% CL	% AL	% CL	% AL
India	39.83	75.31	24.69	26.43	23.74	19.22	48.88
Odisha	41.79	61.04	38.96	30.63	22.61	12.06	63.20
Sundergarh	41.71	61.28	38.72	24.77	11.08	15.30	57.39
Kendujhar	42.54	57.73	42.27	35.90	19.13	12.10	69.58

Source: Census of India. 2011.

Note: AL- Agricultural Labour; CL- Cultivators.

4.3 The People v/s POSCO: A Historical Overview

It was on 22nd June 2005, the Government of Odisha, as a part of its larger industrial policy aimed at 'bringing prosperity and well-being to its people', has signed a Memorandum of Understanding (MoU) with the Pohang Steel Company (POSCO), Republic of Korea- one of the biggest steel manufacturing Multi-National Corporations of the world. The MoU outlined POSCO's proposal to invest in the mining industry and build a steel plant, captive power station and port in Ersama block of Jagatsinghpur district. The MoU has envisioned the POSCO to invest an amount of Rs. 54,000 crores over the next decade, the largest FDI in India, but the Government of Odisha has to "make best efforts and provide all possible assistance to POSCO", from granting captive access to the Khandahar mine for a period of minimum 30 years by facilitating the land acquisition process at Jagatsinghpur to setting up the Integrated Steel Plant and a captive

port. Thus, the Government has to transfer about 1620.496 hectares of land (of which 1253.225 hectares is forest land) to the Company.

Thus in December 2006, the Government of Odisha recommended the central government that POSCO be allocated prospecting license for 6204.352 hectares of Khandadhar mines- even by surpassing the existing 225 other applicants, including one by a public sector corporation like Kudremukh Iron Ore Corporation (KIOCL), even though many of them had appeared on the scene even before the POSCO (Mining Zone People's Solidarity, 2010). For the purpose of the proposed plant and port, the Company has been entrusted to acquire land from the villages of Dhinkia and Gobindpur of Dhinkia Gram Panchayat; Nuagan and Jatadhar of Nuagan Gram Panchayat; and, Noliasahi, Bhunyapal, Polanga and Bayanalkandha of Gadakujang Gram Panchayat, of Erasama block, Kujang Tahsil of Jagatsinghpur District.

This 'desirous efforts' by the Government of Orissa, in utilizing the natural resources and rapidly industrializing the State, 'so as to bring prosperity and well-being to its people', as claimed in the MoU , triggered off resistances from the locals as it has been the case with such similar efforts at Kalinganagar and Niyamgiri. These movements encompass every method of democratic dissent- petitions, demonstrations, rallies, strikes, picketing, and gheraos- to make their opposition known to the authorities. They have been successful so far in stalling the work on this project for the last one decade, and it is in a state of almost standstill today. The government and the company has used both carrots and sticks to deal with this tension, but the popular resistance asking for better compensation on one hand, and the total rejection of project, on the other hand, went in parallel with each other by further complicating the situations at the ground.

4.3.1 The Spatial Dynamics of the POSCO Movement

As mentioned in the above section, the proposed POSCO project has two major components- a) the mining component; and b) the Plant/Port component, and which extend over two different social and physical ecologies. The mining project extends over the Khandadhar region in the Western Odisha, the extension of the Central Indian Tribal belt, while the plant and port project is proposed to locate at the coastal villages of

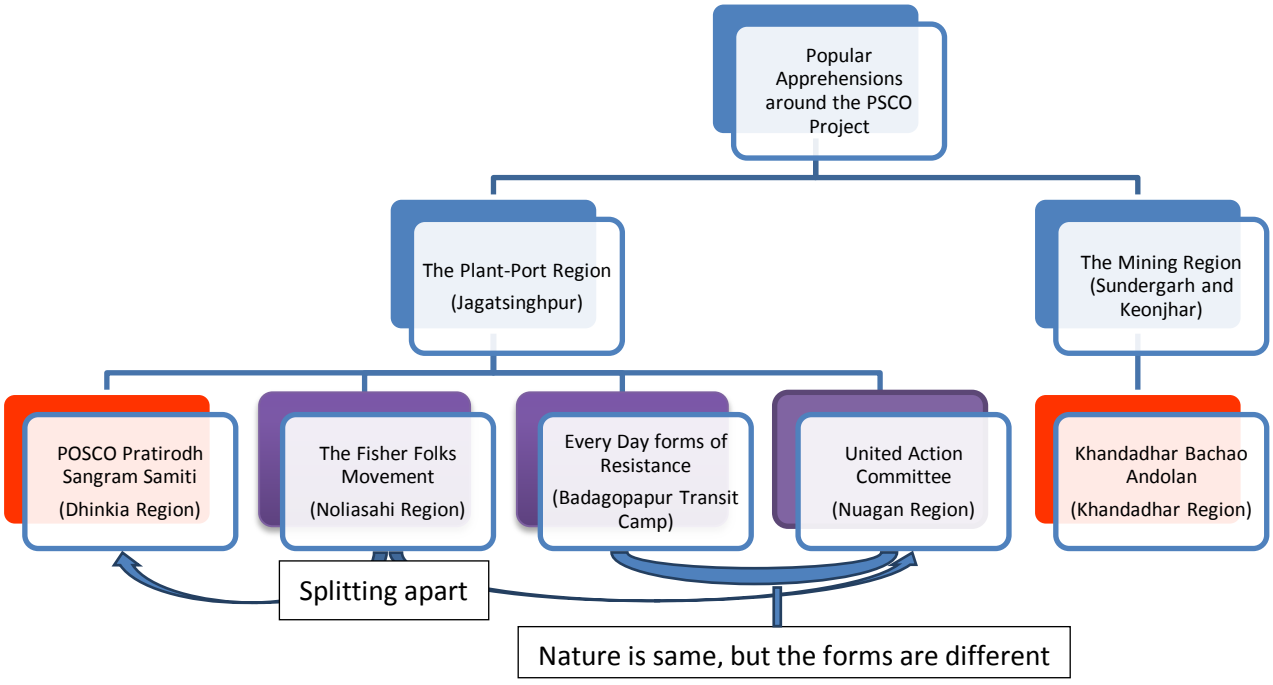
Ersama Block of Jagatsinghpur District. Thus, the scope of our present study on the popular resistance over the POSCO project has to incorporate the popular attitudes towards this project across these different spatial units, as mentioned in section 4.3.

The field observation suggests that the people's approach to the proposed project is spatially differentiated, as locals are no way homogenous and their relationship with their environment is varied across space and time. Accordingly, the resistance movement against the POSCO project has taken different patterns across these distinct spatial units, and which has followed the specificities of the micro regions as discussed in section 4.3. This geographical patterns of popular resistance suggest that it is not simply the oppression that decides the resistance per se, rather the pattern and forms of popular resistance to a particular kind of challenge has to be understood with respect to the nature of the region/place. The region/place here is a historical product of the interaction between the human and their natural habitat at an elementary level, which is further sophisticated by the dynamics of the capitalist penetration at the local level and the nature of the politics involved in it. Thus, we argue that the environmental movements are the place based movements by the pace based actors, like the peasants, against the non-place actors, including the state and capital, on the question of dominant processes of production of nature and the entitlement to the place. It is not simply considered as a micro-politics of 'subaltern strategies of localization', rather we have resorted to an analytical framework, which go beyond a mere appreciation of the resistance as 'spatial practice' to understanding how does the development of capitalist dynamics can create the social space for class reproduction, and how class agency then responds to these dynamics to produce discrete social geographies of popular protests.

Thus we have identified two broad strands for the POSCO movement across the two distinct socio-physiographic regions through which the project extend; the popular resistance at the plant/port region and those at the mining region [see figure: 4 (ii)]. The plant/port region have strong popular movement, which has been there at the forefront of general discourses around the anti-POSCO movement. The popular movements in this region alone is nuanced and is characterized by heterogeneity across distinct spatial subcultures. These subcultures includes the Anti-POSCO 'barricade' movement under the

banner of the POSCO Pratirodh Sangram Samiti (PPSS) located at the Dhinkia region; the United Action Committee, a 'bargaining' movement, anchored at the Nuagan Village, the everyday forms of resistance by dwellers of Badagobapur Transit Camp, a rehabilitation camp by the POSCO. The popular concerns around POSCO from the Mining region were not too much there in the public discourses, but our field survey suggest the presence of a culture of resistance in this region as well. But, these resistances were totally different from those at the Plant-Port region. The following section engages with this spatial dynamics of popular resistances in greater details.

Figure 4. 3: Popular Apprehensions around POSCO Project: The Spatial Dynamics



4.3.1 (A) Movements in the Plant/Port Region

Based on the nature and forms of resistance, the popular movement over the POSCO's proposed Plant-Port project at the Jagatsinghpur district can be broadly divided into two

major strands, the barricade movement involving a total rejection of the project, led by the POSCO Pratirodh Sangram Samiti; and the bargaining movement, involving a politics of bargaining for better compensation packages, and which is being led by the United Action Committee. In between these major currents, there are some minor currents as well, and which all linked to these major currents in a way or other. Thus we can identify four strands in the people's responses to the POSCO Project as follows:

(i) POSCO Pratirodh Sangram Samiti (PPSS) at Dhinkia Village
(ii) The Fisher Folks' Movement at the Noliasahi Region
(iii) 'Everyday Form of Resistance' by the dwellers of Badagobapur Transit Camp
(iv) United Action Committee (UAC) at Nuagan Village

4.3.1 A (i) POSCO Pratirodh Sangram Samiti (PPSS)

The POSCO Pratirodh Sangram Samiti is the most lively resistance movement against the project. It is a barricade movement in its very nature as the major demand of this movement is nothing but the total rejection of the proposed project given its 'adverse socio-economic and ecological impact' to the region. The conversation with the leaders and others associated with the movement from Bhubaneswar and the people in the affected villages of Dhinkia Gram Panchayat shows that as the people started getting inform-ation about the project through media, that 'something is going to happen in their locality', some of the local people under the leadership of a Gandhian group, Nav Nirman Samiti (NNS), led by Dr. Biswajit and Mr. Akhaya initiated the campaign against PSCO. Though the local youth were the major constituents of this formation, the initial spurt of resistance could not last for long due to the repressive measures by police and the local landlords of Nuagan Village. Thus, the resistance turned into inactive latter on. During the same time, the political activists like Rajendra Sarangi, Prashant Paikray and Sudhir Pattnaik have also started getting involved in dialogues with the locals by initiating public talks in the locality (interview with Sandeep Pattnaik, an NGO activist based in Bhubaneswar and the person in charge of documenting the activities of PPSS). This

strong politicization processes at the grass root level have resulted in the formation of a collective organization to resist the POSCO has been formed.

The POSCO Pratirodh Sangram Samiti (PPSS) (a committee for resistance against POSCO) was formed on 11th July 2005 and intensified the struggle through various mechanisms. This committee has been acted as a tool to penetrate the processes of politicization in the village and thus in consolidating a popular opinion against POSCO. As a part of its politicization strategies, the PPSS organized a Padayatra (foot-march) in the three Panchayats of Dhinkia, Nuagan and Garhkujang under the leadership Sri Abhaya Sahoo, a state level leader of Communist Party of India (CPI). Even though Mr. Sahoo did not belong to the locality where the land dispossession was supposed to take place, he emerged as a popular figure in the movement, as the people accepted him as their leader and respected the significance of his presence in the movement. It has to be noted here that the participation of Abhaya Sahoo in the movement was the reflection of his party's mission to retain the party's historical base in the district. But the party was not able to wholly appropriate this movement under its flags, and the movement even after such a long years of their association and intensive politicization, still remained as a 'non-party political formation' with considerable cooperation from all most all opposition parties of the state such as the Communist Party of India, Communist Party of India (Marxist), CPI (ML), Indian National Congress (INC), Orissa Gana Parishad (OGP), People's Democracy, and the Bharatiya Janata Party (BJP) for some time after it withdrew the support to the BJD Government in 2007, and even some local activists/sympathizers of the ruling Biju Janata Dal (BJD) (Kothari, 1984). Thus, even though it was fundamentally a political struggle against the local dynamics of accumulation by dispossession, the movement was not been appropriated by any full-fledged political parties as was the case with the trade union movements, a political battle against the 'accumulation by expansion' (Mishra, 2010; Levien, 2013). According to Levien this 'autonomous non-party political nature' of anti-dispossession movements in India can be broadly explained by two factors;

a) the processes of dispossession that cut across other forms of political cleavage

b) the historical neglect of the mainstream parties in India, including the Left, in seriously opposing the development-induced displacement.

Accordingly the popular agitations against this process of dispossession always emerge as independent people's movements, with an ad hoc organizational structure of varying formality put together specifically for the a particular purpose. This aspect is reflected in their names, 'which often follow the modular form of: "Save the (Place Name) Movement" or "Anti-(Project Name) Struggle Committee" (Levien, 2013: 158).

The Means of Protests

The major modes of protest resorted by the PPSS were democratic and non-violent in nature including petitions, demonstrations, rallies, strikes, picketing, and gheraos. In July-September of 2005, the year when the MoU has been signed, the protesters have decided to start a people's blockade in three Gram Panchayats, which were going to be affected by the project. This blockades had allowed all persons, except government officials and POSCO employees, to enter the villages. The blockade continues till date in Dhinkia, one of the three Gram Panchayats, the epicenter of this movement. It has been observed from the field-work that with the withdrawal of the police from the site there is no active manifestation of resistances at the ground, and things are more or less calm and quiet as of now. It has been noticed from the field experience that the people, today, believe that their unity and agency has won and thus they were able to protect their traditional livelihoods system. This is clearly reflected in the words of Debendra Swain, 36 years old farmer from the Dhinkia village:

"*They (the Government) came with huge force, 12 platoons of police, lathis, guns and even the gundas. But we were never wanted to lose this battle, as it was fought for our lives. Though we paid huge costs in this battle including some valuable lives, but still we courageously stood together, and now I think we have won*"…

During the peak hours of protest, the PPSS has used the children and women as the human barricades to stop POSCO's land acquisition work. This act of the PPSS has evoked the criticism from the Odisha Government, on the grounds of child rights but the popular struggles were able to develop a public discourse against these charges. The PPSS justified this stand by stating that how the student can access the schools while living under such a siege, as the educational institutional were used as the camping site for the armed police. When I pointed out it in the interview the response by Mr. Sisir Mohapatra, 61 year old local leader of the PPSS and the former president of Dhinkia Gram Panchayat was that, "how can the child sit in calm in the classroom when his/her father and mother are there at the forefront of the struggles, and being beaten up by the police. The PPSS point of argument got wider acceptance and the International Human Rights Clinic (IHRC) in its report called for an immediate suspension of the Project given the violation of human rights by the POSCO. Thus, the PPSS was able to channelize a larger opinion in favor of their demands by undergoing all the oppressive measures of the state machinery.

The Question of Scale

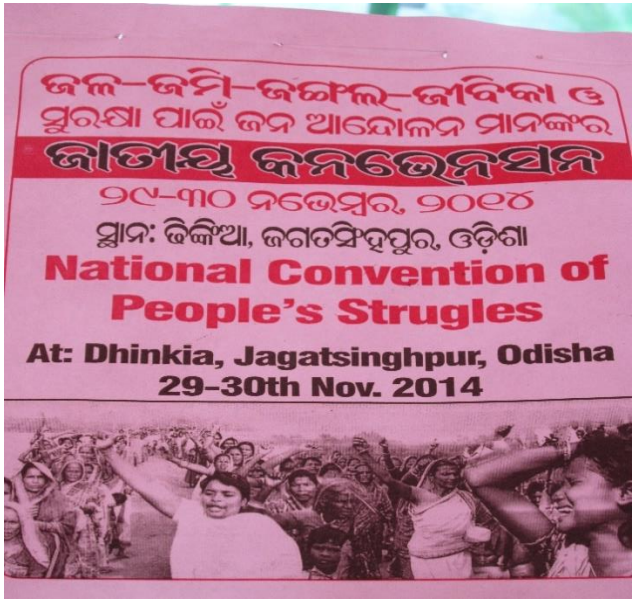
Along with the PPSS, there are few other movements were also going on in the adjoining region to object the proposed POSCO project. One was at the Khandadhar mining region in the Sundargarh and Keonjahar districts under the banner of the Khandadhar Sagharsh Sangram Samiti, to which we will come shortly, the Hansua Bachao Sangram Samiti, Mahanadi Bachao Andolan, Jal Suraksha Janmunch in Cuttack, by the local farmers in the catchment area of Mahanadi river and its tributary Hansua to resist the proposed pipeline to take the water away from the region for serving the needs of the project allegedly at the cost of local needs. Even though the leaders of PPSS claimed that they have tried to coordinate with these movements, their under-representation in all the discourses of POSCO movement shows the limitations of this resistances with respect to their scale and scope of extension.

Though the PPSS' claims that their demand for 'POSCO hatao' (no to POSCO) is wide enough to encompass all other movements related to this issue, but it has to be noted that the movement has partially failed to challenge the dominant development discourse as a

whole by creating a wider spatial alliance. Even the involvement of the people from 'outside' the locale, the leader of the movement Mr. Sahoo is from the neighboring village, is also not able to transcend the spatial boundaries of this resistance as it continues to retain its character of 'localism'. Thus, the movement is continued to be spatially localized. It is, indeed, worth mentioning here that, though it cannot transcend these horizontal spatial boundaries, the determination of the people and the foresightedness of its leadership made the PPSS capable of transcending the vertical spatial boundaries to a greater extent. These networks, as argued by Escobar, 'propitiate the reorganization of space from below and some measure of symmetry between the local and the global.' These processes of spatial networking in a way create "glocalities", which involves the regional spaces and regional worlds created by connecting the places with respect to their cultural and spatial configurations (Escobar, 2001). The solidarity protest at Delhi, the national capital of India, by the left sympathizers and the environmental activists and those even at Seoul, the capital city of South Korea, by the human right activists are the great examples for this kind of network and thus the ability of this localized protests in reorganizing the space from below. This is not something particular to this movement alone, rather it is a tactics of the place based movement that one can see in such similar movements across the globe such as the La Via Campesina, an international Peasant Movement, the movement against GAAT's rules and regulations, etc... The withdrawal of World Bank from funding to the Sardar Sarovar Dam project was such a victory of the place based actors of Narmada Bachao Andolan in reorganizing the power dynamics of space from below. The field survey suggests that this vertical spatial extension of the movement and networking were somehow able to give more confidence to the local people involved in the resistance , as it demonstrated to them that it is not only the capital but the place-based struggles can also reorganize space.

"*Of course we all aware of these movements, in solidarity with us, everywhere in the world from New Delhi to Seoul, and it is with all that we are able to barricade our betel vines*" that was the response of Mr. Kailash Mohanti, 60 years old betel vine farmer from the Patana Hamlet of Dhinkia Village. They were also aware of the fight against TATA steel plant in Kalinganagara, and the protesters from there had visited Dhinkia to extend their solidarity, as well as of the movements of similar nature taking place in other parts of the country.

On 29th November 2009 about hundreds of farmers, fisher folks, agricultural workers and the women from the villages, affected by the corporate invasion in coastal Odisha mobilized for a seven days long protest padayatra (foot march) of 120 Km from Dhinkia to Puri. The padayatra was supported by almost all the major anti-mining, anti-displacement movements across Odisha. It was the first instance in the recent history of Odisha that such a unity had been achieved cutting across all the ideological or identity barriers, somewhat similar to the anti-colonial movement of the 1940's. But these movements still maintained their place character without transforming into a uniform platform. Though some scholars like Escobar, Moore find it quite reasonable to be so, but the ability of such a localism in challenging a 'global enemy' through the strategies of localization is somewhat questionable. The field evidence from Dhinkia suggest that the leadership of the movement was also very skeptical about the scope of such a 'localizing strategy' in pursuing their demands, and that attest the current dynamics at the village. With such an understanding to have a wider horizontal spatial alliances, along with the vertical alliances, with similar movements they have taken initiation to organize a two-day 'National Convention of People's Struggles in Defence of Democracy to Protect, Land, Water, Forest and Livelihood' with the participation of the people from different corners of the Country. The convention witnessed wider participation by the activists across the subcontinent and discussion of the issues of displacement and development.



Poster of the Programme, the National Convention of People's Struggle, Hung in the Convention Hall, Dhinkia, Novemebr, 2014

Abhay Sahoo, the President of Posco Pratirodh Sangram Samiti, addressing the National Convention.

Participants, coming from different parts of the country, are entering the convention area, Dhinkia, November, 2014

The Martyr column for the first martyr of the anti-POSCO Movement,at Dhinkia, November, 2014.

The Ideology of the Movement: 'Paan or POSCO'

One of the major criticisms of the movement of these sorts were of their defense of the prevailing agrarian system and their reluctance in embracing the modernity and development. Thus most of the time popular resistance has been critiqued for being highly 'romantic' in their nature and 'anti-developmental' in their content. The evidence from the fieldwork refutes these arguments as most of interviews with the people opposing the proposed project, made it very explicit that:

"*We are not against industrialization, but we are against those processes of industrialization which displace people without any hopes."*

By pointing towards the nearby Indian Oil Corporation Limited's refinery at Paradip, Deba Swain, a young farmer from Dhinkia, continued:

"*Look at that big industrial plant, for which a lot of agricultural land has been taken away with the promise of giving proper rehabilitation measures, but still the people there are struggling to make their lives. The kind of pollution that the plant is producing is affecting the whole lives and agriculture in the surroundings. Then how can we support such processes of industrialization, which make us beggars in our own land?"*

Tt is clear from the above narrations that the local community is not against industrialization per se, but they want an industrialization with their active participation in deciding its nature and content. Most of locals that participated in the interview told that *'we want industrialization that result in employment and better-living conditions and also that promotes the agrarian system rather destroying it.'* It was evident from the interviews that the industrialization required in the region must be agriculture-oriented, those have a backward or forward linkages with the agriculture like the agro food processing industries etc., or the loss of employment would be higher than that generated. This is not an irrational argument as may appear to some, it has been substantiated by the historical experience of the region. The empirical evidence, as substantiated in the last chapter (Chapter 3) clearly exposes the inelastic nature of economic growth in terms of employment generation in the case of both Odisha and India.

One needs to consider this popular demand as the agricultural sector continue to employ a larger chunk of the working population of the State, though it is declining over time, with a comparatively lesser and declining share in the state's GSDP. Its share in the state's GSDP is declining over time from about 36.56% in 1990-91 to 15.58% in 2013-14. Along with this tendency, one has to also notice the comparatively higher rate of unemployment both in terms of usual principal status and current daily status than the national average for the last decade in the rural Odisha (The Economic Survey of Odisha, 2013-14). Therefore, it has to be noted that this declining share of working population from the agricultural sector are not 'productively' absorbed in the non-agricultural economy. Thus it can be argued that the movement of the working population from the agricultural sector is not a result of any pull factors triggered off by the trajectories of economic growth rather is more of a push factor and therefore it has to be understood from the perspective of the kind of policy intervention the state is following towards the agricultural sector over years. This trend in the policy arena is clearly reflected in the declining share of the capital outlay on agriculture to the total capital outlay [see Table 4 (F)].

Table 4. 6: Share of Capital Outlay on Agriculture (as percentage of total Capital Outlay)

	2000-05 (Average)	2005-10 (Average)	2010-11 (RE)	2011-12 (BE)
Odisha	6	3.1	1.7	2.7
All States consolidated	5.1	4.3	2.4	2.8

Note: RE- Revised Estimates, BE- Budget Estimates

Source: RBI Monthly Bulletin March 2012

Betel Vineyards in the Patana Hamlet, Patana, Paradeep, October, 2014.

Paddy fields around the Dhinkia village, the Oil refinery in the back ground, Dhinkia, October, 2014

Therefore, one needs to look at the real dynamics involved in the declining share of employment in the agricultural sector over years with a skepticism in mind that 'is it really a result of the pull factors from the industrial/tertiary sectors rather more of push factors induced by the policy neglect of the government towards this sector over years'. This scenario has to be seen simultaneously with the kind of agrarian transition the state has been witnessing as noted by Mishra:

"A large number of small and marginal cultivator families are simply unable to survive without short-term migration or remittances from members who have already migrated…. This inability of the landless and small peasantry to reproduce themselves without non-agricultural incomes, often earned under severe distress, holds the key to understanding the true nature of the agrarian crisis in rural Orissa" (Mishra, 2011: 11).

It is in this context when the state is following an indifferent attitude towards the agricultural sector, even though it employs a large section of the workers, we have to be serious about the issue raised by the villagers of Dhinkia. This 'blind' dependence on highly capital intensive manufacturing sector merely for the growth performance without creating any new employments make us to go back to an older argument by Prof. K N Raj, to be realistic in the policy framework to deal with this economic situation of underdeveloped region in a developing national economy. According to him:

"The phenomenon of "stagflation" in these countries (advanced countries) reflects a crisis in economic relationships within and between them which has serious implications for other less developed countries: and the lures that multinational companies offer in this context will therefore almost certainly prove illusory… The only alternative strategy open, therefore, is to create more employment opportunities within agriculture itself. Since the scope for extending the area under cultivation is limited, this has to be done primarily by increasing the intensity of application of labor to land… So there is little doubt that there is considerable scope for creating more employment opportunities in agriculture. But it requires radical changes in the organization of agricultural production, and indeed in the structure of rural society" (Raj, 1977; 199).

It is a remarkable observation in the present national context as well, a reflection of similar kind of attitude one can also notice in the words of Saxena, the former secretary of Planning Commission of India, as well. As Saxena put it:

"The hard reality is that the dependence on the land of 65 per cent of the total population is likely to continue in the present century also unless economic growth in urban areas is predominantly labor intensive. Thus the argument that 'if people are deprived of their tiny holdings they will find other meaningful jobs' makes no sense… Our policy should be to tie the rural people to their tiny holdings in the villages and keep them busy there rather than make them landless and push them to towns through proletarianisation"[11].

Thus it has to be noticed that the ideology leading this movement are not environmental philosophies in a traditional sense, rather it is the sense of contestation against the dominant production of nature, which involves the displacement of labour. It has to be

[11] See: N.C. Saxena, "Tenancy reforms vs open market leasing – what would serve the poor better?" http://planningcommission.nic.in/reports/articles/ncsxna/index.php?repts=leasing.htm#_ftn1.

argued that the historical experience of the displacement of labor the region has been witnessing, with an unleashing of neoliberal capitalism, is the dominant ideology that nourishes this movement. It is not the romantic notion of the nature or even the obsession with the traditionalism which drive this movement rather it is the material experience of subjugation under the dominant processes of capitalist accumulation inherent with the uneven development and accumulation by dispossession do serve the job. This subjugation has been politicized and further shaped into the form a movement by the local political structure. The local political structure pertain to this region is dominated by the ideologies of the Communist movement and which gave such a remarkable spirit to this movement.

Commercial Prawn cultivating field near the Dhinkia Village, November, 2014.

Women collecting the prawn from the field, Dhinkia, November, 2014

4.3.1 A (ii) The Fisher Folks Movement at the Noliasahi region

The Bhita Mitti Bachao Andolan (save the residential land movement) was one of the strands of anti-POSCO movement in the region of Noliasahi during the initial years of the project period (2005-2007). The movement was based on the local traditional fisher folks. The movement was broke out in 2005 itself, when the people came across the news about the project that is coming to their region and they are going to totally displace for it. Thus, they have led a strong protest against the project under the leadership of local political leaders. This movement by the local fisher folks has become a complementary movement of PPSS in the region. In the initial years, till 2007, the movement was of 'barricade' in nature, as they totally opposed the setting up of the project as it will affect their lives and livelihood options in the region. But later on, especially after 2007, it got split apart. This spit in the unified popular resistance was the result of the tensions prevailed in the region during the time of Panchayat election. During the time of local body election the otherwise dormant local ideological and political difference got prominence over the identity inferred to them by the threats of alienation from their natural habitat. This given rise to the weakening of the collective resistance by the people and the formation of two political stratum, one under the initiation of the local activists of the ruling BJD, while the other under the collective unity of the remaining opposition parties particularly the Indian National Congress. While the latter group adhered with the slogan of 'no POSCO' and got merged with the PPSS, the former strand with a major

chunk of the villagers (around 70% of the total residents of the village) turned the resistance into a 'bargaining movement' and got highly collaborated with the pro-POSCO outfit, the United Action Committee. It thus emerged as a new movement under the banner of POSCO Andolan Sogam Sahayata Samiti (POSCO struggle Committee for Better Compensation).

From the field survey it has been found that most of the people from the region, both those in the bargaining and barricade movement, had already received the compensation for their betel vineyards (Pan Khethi) at a rate of Rs. 11,000 per decimal land (100 decimals= 1 acre) (interview with Deepak Lal Behra, a 30 years old graduate belong to the POSCO Andolan Soyam Sahayata Samiti). However, that was not the end of the story. The people are continuing their struggles, not against the project per se, rather for a better compensation package. At the moment the company has allotted them the land at Juakkar, about 4 KM from Gadkujang, but the people are not ready to go to that place as it is not suitable to live and carry on with agriculture, as that site is highly prone to the salt water intrusions. Therefore, now they are asking for better land at some other location, but which is a Government Forest land at the moment. This shift in the attitude of the resistance can be inferred from the words of a local villager;

"Even if we resist the company, the government has enough power to execute whatever they have decided. So it would be better for us to ask for better compensation package rather than engaging in a battle in which we are going to lose any how" (Deepak Lal Behra, a young graduate in the locality).

Most of the people in the locality, who are there in the bargaining movement now, are with the ruling BJD and the personal interview reveals that their respective party affiliations and their policy position has an important role in influencing their change in position towards the proposed project (Group discussion with the pro-POSCO villagers at Noliasahi).

But the other faction, with strong elements of anti-POSCO ideology, under the leadership Basu Behra, a local leader of Indian National Congress, is very active in the PPSS. According to him about 30% of the families in the Noliasahi region are with the PPSS,

and they are totally against the project. But the company in the initial times of land acquisition has forcefully acquired the land under the betel vineyards from the people by giving away the compensation. Thus, everybody including himself was forced to take the compensation money from the officials. This action succeeded in weakening the movement and partitioned it in two different strands. Thus it can be clearly visible from the field observation that the dynamics of capital's penetration at the local level and the manipulation of the prevailing dominant political structure of the region the popular response to the same challenge got organically differentiated in the same location/place.

4.3.1 A (iii) 'Weapon of the Weak': The Everyday Form of Resistance by the Residents of Badagobapur Transit Camp

There is another strand of the story, which may not be otherwise considered a movement by using the criterion used for the other strands. Where the people were forced to live under distress ridden conditions without having any choice to move out of it. Their protests are no way structured rather it involves the very life they lead under such pathetic conditions. It was in June 2007 during the time of local body election; a clash has been broke out in Dhinkia and Patana Hamlet as the activists of PPSS has asked everybody to vote for a particular candidates in the Panchayat body election, but the some of the residents, most of them were there in the transit camp today, refused to heed that demand by the PPSS as they were against the communist ideology involved in the movement. It resulted in an outbreak of a severe clash in the village, and those who opposed the PPSS candidate were forced to leave their village. As stated by a resident of the transit camp:

"We are forced to migrate here. Due to all the tortures and threats from our fellow villagers, belonging to the PPSS, we had no choices but to leave our villages. The Communists under the leadership of Abhay Sahoo, a vocal leader of Posco Pratirodh Sangram Samiti today, has

hijacked the issues and is initiating terror in the region. In 2006, there was nobody as POSCO-supporter, but now we are characterized as the pro-POSCO people by the media. We are here not because of our choice but for safety and security of our family. We gave our land; it is laying idle there… We left our ancestral residence and became refugee here, and nobody including Odisha Government and POSCO gave us any opportunity to us and considered our grievances. We were made false promises and faced fake allegation since 2006. We are being cheated by all… We want to go back to our villages and want to engage in our agricultural activities, but they (PPSS) are not allowing us" (Ravindra Sahoo, 41 years old, a resident of the transit camp).

Most of the residents participated in the group discussions expressed their desire to go back to their villages and start engaging in the agricultural activities again. In the follow-up attempt by a telephonic interview with Mr. Ravindra Sahoo, a resident of the camp (carried out on 10th May 2015) it has been confirmed that they have realized that dream and now they all back to their villages, though their lives are still to reach a state of normalcy. They are still facing the issues of social exclusion from some members of the PPSS.

In the beginning, in 2007, there were around 70 families in the transit camp and a majority of them had gone back to their villages as a result of the pathetic living conditions in the transit camp. At the time of field survey (November 2014), there were only 17 families in the transit camp and most of them were earlier engaged in the betel vine cultivation in the Dhinkia Village adjoining Patana hamlet. Their condition is the worst among the impacted households. Though some of them have managed get engage in casual employment, most of them remained unemployed. Till recently, they were provided with an allowance of about Rs. 2400 per month by the POSCO Company, but now even that has stopped. The present condition is very abysmal, as a family of 5 members are living in a house with one room under extremely congested and unhygienic conditions (see the image of transit camp).

Glimpses of the Transit Camp

In spite of their extreme distress, they are not opposing the project per se, and are asking for better compensation and rehabilitation measures. It is not that the impact of the project is any less, but the choices they can make are severely limited. Thus the everyday struggle of these people is intense. Even being a part of the bargaining politics, the concerns of this people have not absorbed by the United Action Committee, the strongest currents in the locality favoring the POSCO project. This political marginality from the mainstream discourses can be attributed by the limited social networking capacity of these people and consequently the lack of a political command in the region. Thus they have taken up the 'weapons of the weak', which consists of the murmurs against the company and the state, and living the life with full of contempt for the system (Scott, 1985). In Scott's Sedaka the affiliation to a dominant political party make them (the

weak) bit vocal in the region, but here under the neoliberal capitalism even being a part of such a dominant political party of the region, they are not being co-opted into the bargaining tables by the state nor the capital. It demonstrates the treatment meted out to the lives of the commoners by the neoliberal capital, even if they stand in support of the capital. Though better facility and more sensitive treatment to those who have given up their land would have helped in attracting more people in favour of the project, both the government and the company appear to be following an indifferent attitude that is, in substance, no different in spirit of British colonizers in the pre-independence era. This analysis reveals that both lives of the weaker section of the society and the nature or environment from which they derive their livelihood from become at best a "factor" in the working of capital and at worst impediments to "development" under neoliberal capitalism. .

4.3.1 A (iv) United Action Committee (UAC)

The United Action Committee, a pro-POSCO outfit, has its strong base among the larger landholders of the Nuagan Villages. The UAC is mainly of a body of the grass root loyalists of the ruling party, the Biju Janata Dal (BJD). Anandi Rout was the president of the organization, while Tamil Pradhan Nirvaya, the vice president. Even though they are the loyalists of the ruling class, the support offered by the committee to the project was conditional. Their support to the POSCO project was subject to certain demands. The major demands raised by them were basically of for better compensation packages and it includes: 'measurement of betel vines from stay to stay instead of, fence to fence; raising the compensation for betel vine workers from 20 to 30 per cent of the amount being paid to the vine owners; provision of job to each of the 3,000 project-affected family of Dhinkia, Nuagan and Garhkujang Gram Panchayats; increasing the price of agricultural and homestead land; giving contract work to the local contractors during construction; and paying compensation to the beneficiaries who had demolished their betel vines after the 2008 survey' . As most of the members of the UAC were the active members of the ruling BJD and they had enough reach among the ruling class decisions. It was found from the field survey that the UAC had greater role in suppressing the anti-POSCO barricade movement in the Nuagan region under the banner of a Gandhian outfit the Nav

Nirman Samiti and it is being projected as a counter movement to the PPSS. Thus, it can be argued that the UAC to a large extent represent a local stratum which act as agents of the ruling class, with enough power to bargain with the neoliberal capital.

Even though the committee has been a strong voice of support for the project, it has strongly resisted certain strategies of both the government and the company, particularly those that seem to be detrimental to the 'local interests' to them. Unlike its engagement with the PPSS or any other strands of the POSCO movements, the state was eager to engage positively with the concerns raised by this outfit. Thus they represent a local stratum of the dominant ideologies of the neoliberal capital, with enough capacity to bargain. It may be noted here that the existence of this class is essential for the penetration of the capital into the local level, a phenomenon Adduci noticed in e case of the ChilkaBachao Andolan as well. According to her this capacity to creatively bargain can be attributed to the class position they inherit, as an agency of the neo-rentier class at the local stratum (Adduci, 2009).

4.3.1 (B) Movement in the Mining Region

The Government of Odisha by surpassing all the existing applications, including one by a public sector corporation, recommended the central government to allocate the prospecting license for 6204.352 hectares of Khandadhar mines for the POSCO Project, even without having any consultation with the people before taking such an action, and the matter, thus, became a legal battle as it was challenged it in the court. Finally, the Supreme Court of India has entrusted the government of India to take a decision on the matter, a direction that was very much acceptable to the Company[12]. Meanwhile, the State government did not take any initiatives to demarcate the area and the number of villages going to be affected by the proposed mining project in the region. Private reports claim that about 32 villages will be impacted in Keonjhar district and 84 villages in Sundergerh district by this project (Mining Zone Peoples' Solidarity Group, 2010).

[12] See the Business Standard dated 21st March, 2013 titled: "SC concludes hearing in Posco mining case", http://www.business-standard.com/article/current-affairs/sc-concludes-hearing-in-posco-mining-case-113032100496_1.html; Economic Times dated 10th May 2013 titled "POSCO welcomes SC decision on Khandadhar", http://articles.economictimes.indiatimes.com/2013-05-10/news/39168992_1_khandadhar-judgement-posco-india.

In order to understand the local people's reaction to the project and their perception about the proposed project intended to 'unleash of prosperity', a brief field visit has been carried out to one of the 'potentially' project-affected village at the foothills of the Khandadhar waterfalls in the Sundergarh District. This section deals with the narratives of the popular responses to the project in the light of the field experiences from that village.

4.3.1. B (i) 'The Unquiet Woods': A Struggle in Defense of Forest Rights

Badhabhuin is a village, lies to the foot of Khandadhar Hills in the Sundergarh District of Odisha, which is about three hundred kilometers far from the Paradeep. It is predominantly a tribal village, inhabited mostly by the Paudi Bhuiyan, though other groups such as the Julang and Munda also inhabit there. The residents practice a mix of shifting 'cultivation' and settled agriculture. The area going to be allotted for the POSCO Company for its mining project allegedly falls near this village, and thus they are also facing the threats of displacement for the proposed project. The people came to know about the project through the newspaper and from the activists of a local NGO, Sundargarh Gramya Unnayan Pratisthan (SGUP). There hasn't any kind of 'structured resistance' against the proposed mining project per se, as one can see at the plant region. There had been some kind of mobilization few years back under the banner of Khandadhar Bachao Andolan, which was coordinated by Shyam Sunder Rout, a local NGO activist. Later on they have been joined by the (then former minister) present tribal minister and local Parliamentarian Jual Oram. But at the moment, when I was conducting the survey, there wasn't any manifestation of a direct struggle against the POSCO, though the stories that were heard were of a prolonged struggle of a historic nature in defense of their individual and community forests rights. In this continuing struggle the tribals are being helped by the local NGO, Sundargarh Gramya Unnayan Pratisthan (SGUP).

As a majority of the tribals in the locality do not have the Pattas, since being located in what is referred by Scott as the 'stateless zone' (2009), and they were fighting ever since the commencement of invasion by the state to their territories. The forest department is

the major adversary of this conflict, and it is a battle for the entitlement of their individual and community forests rights. Even in the historical records one can see such resistance by the tribals of the Western Odisha against the encroachments by the people from the coastal region (see Mohanty, 1990). These struggles for their traditional rights became unattainable after the POSCO got promised of a mining site there. The tribal has to fight every now and then with the bureaucratic system to establish their rights, but most of the cases their claims not even heeded. The attitude of the people towards the proposed POSCO project is divided here as well. Some sections, especially those who migrated there as government employees working in the Forests Departments are, for conceivable reasons, are in favour of the project. But the local people that are dependent on the forest for their livelihood are not ready to compromise not only because the dent the project would make on their livelihood, but also their social identity attached to the place and its forest.

Khandadhar is not just a hill alone, which has great cultural significance for the community as it is the abode of their god Khanda. Therefore the battle against the POSCO is one of great significance for them. Moreover, they are extremely skeptical about the development prospects that POSCO can offer to them, as it can be noticed in the words of a local adivasi leader:

"See the colour of the water flowing in that stream (pointing towards the water flowing downward from the Khandadhar Water falls)? It is totally red, and the quantity of water is also much lesser than before… The agriculture in the foot hills are suffering because of it… We are also prone to different kinds of diseases. This is what we all got from the existing mining project run by the Odisha Mining Corporation (OMC). Why should we try for that game again if it only involves losses to us? We want our agrarian system to be sustained" (Renu Dehri, a 65 year old tribal leader).

These remarks were out of a historical subjugation of the people to the kind of 'unleashing' of prosperity the State has been following for some time. As reported by the villagers, the annual flow of water has drastically declined after the Odisha Mining Corporation established its mining venture at the head of waterfalls. Since the iron ore mining requires abundant water, they have tanked half of the total flow at the upstream,

and this has left serious imprints on the agricultures at the foothills. It has to be kept in mind that the Center for Science and Environment (CSE), in its State of India's Environment report, remind us the pathetic conditions of the water resources of Odisha due to the indiscriminate mining activities. And the CSE has listed the River Brahmani a river flowing through the Khandadhar region as one of the ten worst polluted rivers of India.

Some studies suggest that the previous mining in the Keonjhar area has already led to a decline of four meters in the underground water level in that area[13]. About forty percent of the region's 8,000 tube wells do not work, and most of the irrigation in the area can no longer depend on water from the Khandadhar waterfalls. It has been further validated by another exiting study by Duskar Barrik, a local NGO activist, that all almost all perennial streams in the mining area of Keonjhar district are dead (as quoted in Mining Zone People's Solidarity Group, 2010). This is because the mining companies consider the origins of natural and perennial streams as perfect for extracting good quality iron ore, and that, in turn, has led to the death of these streams. Since the people in the area primarily survive on agriculture that is dependent on the rivers and streams for irrigation, the destruction of these water bodies has substantially destructive impact on the livelihood of the people in the downstream. Thus it has to be noted that further mining at the present scale would lead to the complete drying up of the main water bodies in the region. Thus the struggles of the people in the region may appear to be a 'romantic' movement for some, as they do make claims about the hill on cultural grounds, but the critical issues of politics of ecology and economy are attached with these. Thus the battle is to do with the encroachment of the of the exclusionary market economies to the realms of self-sustaining local economy in its attempt to produce the subservient ecologies for the capital's accumulation.

[13] For details see: POSCO: Tribal Dispossession, Environmental Destruction and Imperialism at http://mrzine.monthlyreview.org/2010/amr250210p.html.

The Khandadhar through the Lens

Clock wise from the top: 1) The Khandadhar water fall and the adjoining agricultural field, 2) Khandadhar Water Falls from close quarters 3) the down ward stream from the water fall, 4) The temple of tribal god Khanda.

The Kandadhar with its all cultural uniqueness and livelihood concerns, however, stays away from the mainstream kind of activism. The locals with whom I had interactions were hardly aware of the struggles of the plant site, the stories of Abhay Sahoo and his comrades in the POSCO Pratirodh Sangram Samiti. Thus the struggles by this people are highly localized, and it is confined to be as an issue of the Kandadhar and its immediate people.

4.4 Conclusion

It can be noticed that the popular responses and resistance varies across different spatial localities, even if they are confronted with the same enemy and comparable fate. Thus, most of the time, the popular contestation in defense of their local ecologies and thus economies tend to be more place-oriented involving the strategies of localization. The insights from our engagement with the popular approaches to the challenges and prospects of the POSCO project do substantiate this argument. In the case of POSCO movement, even though the adversary involved in the processes of alienation of the locals is the same across all the different sub-regions, there is no tendency of coordination between the resistance movements at the plant and mining site. The way these disparate sets of resistances played out is largely controlled by the uniqueness of man-environment relationship, the local politics, the politics of place, and its engagement with the neoliberal capital.

Therefore it can be argued that though the 'production of nature' by the neoliberal capital does heighten the sense of ecological identity of the local people, emanating from the process of alienation or exploitation, the kind of response to that realization is decided by the local culture and the political dynamics. The prominent difference in the nature of the popular resistance between the mining and plant-port region empirically substantiate this argument. The plant-port region at the coastal Odisha with its privileged position vis-à-vis the rest of Odisha, with a different political and economic history both during the colonial and post-colonial period, shows a great difference in the way it responded to these challenges vis-à-vis the mining region. The plant region was the direct site of the operation of the neoliberal capital and it produced two distinct movement in the neighboring localities. Whereas the movement at the Dhinkia was of a barricade in nature, those at the adjoin Nuagan was a bargaining movement. Though the neoliberal capitalism with all its capacities has tried to deal with the anti-POSCO movement at the

Dhinkia village by using both carrots and sticks, but has miserably failed to make any advancement in the region, though it was able to do so in Noliasahi.

The tribal belts of Odisha, on the other hand, had a different history of spatial subjugation and popular resistance dating back to the colonial periods. Here the people are not concerned about the POSCO per se, but are engaged in their prolonged resistance in defense of their basic entitlement to the forest resources. Thus it was a continuation of a struggle in defense of place and nativity, though POSCO project was one more hurdle to be tackled. Though it may appear to be a romantic movement in defense of a traditional way of life, but in a nutshell it was a battle against the encroachment of the exclusionary market economies onto the realms of self-sustaining local economy in its attempt to produce the subservient ecologies to smoothen the geographies of accumulation.

Thus, we argue that the evidences from the anti-POSCO movement indicate that it was in defense of the local ecologies and thus economies are highly place-oriented. Our analysis reveals that the politics of the place are socially produced by the historical processes of the interactions between the local context, the state, and the capital. The elements of place do not only shape the forms of their resistance but decides their nature. The emergence of a strong barricade movement against the POSCO at the Dhinkia region was somewhat attributable to presence of the active communist elements in the locality. The movement at the Khandadhar region, on the other hand, was an extension of the historical movement of the Adivasis in defense of their traditional rights over the forests. The modes of the resistance resorted by the POSCO Pratirodh Sangram Samit also involves the spatial strategies of networking and 'glocalization'. All the three, in turn, took the shape that they did also depending on the specific modes of dependence of the locals with their environment. Thus the spatial dynamics of the popular resistance over nature make us to further argue that the environmentalism of the global South couldn't be simply an 'environmentalism of the poor', but a conflict between the 'ecosystems of locals' with the overarching 'omnivore' (Gadgil and Guha, 1995). The strands of the anti-POSCO movement are highly place oriented, where the character and the role of the actors, to a greater extent, are determined by their relation to- the nature, the accumulation processes and the dominant political dynamics.

Chapter 5

Summary and Conclusion

The discourse outlined in the study has tried to look at the genealogy and the spatial articulation of environmental movements in India in the light of the empirical evidence drawn from the popular movements in Odisha around the proposed POSCO project. The analytical framework of political ecology has been adopted for this study with its strong roots in the radical tradition. This discourse has liberated the ecological discourse beyond the otherwise dominant frameworks of 'moral economy' of Scott and the 'micro-political particularism' by the subalternists, which rests in a mere romanticization of the local communities. The political ecology framework looks at the third world environmental movements as a reaction against the incorporation of their peoples and environments into a first world-dominated global system of capitalist production, where nature and human livelihoods, are considered to be a "factor", at their best; or as impediments to "development", at their worst. The political ecology framework, thus, shifts our research agendas from a conservationist concerns of 'whether or to what extent nature to be controlled', to a more radical perspective which looks at 'how we produce and who controls this production of nature' (Smith, 1984).

The analysis of political ecology of environmental movements in India suggests that these movements have to be seen in continuum with similar movements of the colonial period, as it was against the processes of alienation and cornering of surplus. The mainstream agrarian histories of India has almost exclusively focused on the social relations around land and conflicts over distribution of its produce to the neglect of the ecological context of agriculture as being argue by Guha and Gadgil, (1989). Thus the popular movements like the Jharkhand Movement, Bastar Movements, etc. has

historically been treated as a mere internal security threat, and the ecological movements in India are widely recognized as "new" social movement with its roots in the Chipko Movement of 1970's. This methodological reductionism in the mainstream academia in dealing with the inherent dimensions of ecologies from the popular struggles left us with very restrained archives of India's environmentalism.

The analytical engagement with these popular resistances over the natural resources suggests that these movements were highly localized in their organization, as it was a reaction to the regional experience of the subjugation with the processes of accumulation by dispossession. Nevertheless, these movements with their highly localized nature were able to challenge the dominant processes of production of nature at least in their localities though most of them got brutally suppressed over the years. The typological analysis of these popular resistances over the ecologies shows that there is a systematic shift in the core resources around which the popular confrontation has been met out. This change in the resources under question was more or less in tandem with the transitions in the nature of global capitalism. Accordingly, the forest was the core resource of the conflict under the colonial capitalism, as the woods were the prime raw material of the initial stage of Industrialisation involving paper industry, making of railway sleepers etc., while it has been replaced by the land under the neo-colonial capitalist regime. This transition in the typologies of environmental movements in India with respect to the resources under question has to be understood from a larger perspective as argued by Utsa Patnaik that "in the age of globalization, transforming a stagnant peasant agriculture is no longer necessary to create the surpluses for capitalist industrialization in poor countries" (2011). Thus, the forced integration into export markets became an acceptable way for the capitalist development. These processes of forced integration have transformed the third world ecology as a battle field between the international/national capital and the indigenous communities/locals. In spite of being a movement in checking the accumulation of capital, the (Indian) environmental movements are continued to be a non-party political formation without having any singular ideological rigidities, as the case with the movements against the 'accumulation by expansion', like trade union movements are inherited with.

The historical geography of popular movements over the use and abuse of natural resources suggests that it has to be looked at from a regional framework involving a critical analysis of the way the region has been incorporated into the larger narratives of mainstream developmental processes. Thus, we have tried to characterize the region of Odisha with in the larger narratives of the trajectories of economic growth, so as to look at the genealogy of an environmental movement like (anti)POSCO movement.

The empirical evidence with respect to the changes in land use pattern and the Gross State Domestic Product (GSDP) validated the point of structural transition towards the non-agricultural activities for the Odisha's economy, but the employment scenario is still skewed towards the sluggish agrarian sector. The analysis in this study empirically substantiates the inability of the secondary sector, especially the mining & quarrying and the manufacturing sector in absorbing the free labour released from the primary sector. It is clearly visible when we look at the employment elasticity of economic growth, for the mining sector it is negative in Odisha, though the mining is one of the major sectors attracting the recent investments in the State. The employment elasticity of the manufacturing sector is also very disappointing, and this trend suggests the capital intensive nature of the growth strategy that the state is following. The data, thus, provides an ample ground for the thesis of 'jobless growth' in the case of Odisha. One can clearly notice its major impacts, as it is being demonstrated in the poverty statistics of the State. The high incidence of poverty in the State along with the declining ratio of rural MPCE vis-à-vis the National average during 1993-94 to 2009-10 (from 0.820 to 0.773) exposes the paradoxical existence of 'rich land and poor people' for the case of Odisha. Notably, the state is one of the major mining state of the country and which serves as the destination for large inflows FDI in recent years. The analysis emphasizes the political economy argument of 'internal colonization', as Odisha continues to be a cheap supplier of raw materials for the national and the international market without having appreciable ripple effects that are positive in the local economy.

The contradictory nature of developmental trajectories that the State of Odisha has been witnessing for the decades, raises the question about the ability of the prevailing mainstream development model, which is rooted in the so-called legitimate processes of

"transition from farm to factory"-a model that we have taken for granted from the West, in ensuring the productive engagement of labour with capital, and thus ensuring the benefits of production to all. Thus, it can be concluded that what we have been witnessing are the processes of alienation of the labour through the notorious processes of accumulation by dispossession and intensive capitalization of the production processes. Therefore, the emerging popular resistances against the upcoming projects for extractive industries in the State has to be located in the larger terrains of the historical experiences of integration of the region in the larger developmental narratives. Thus I empirically reinforce the argument put forth by Li (2011) that 'micro-politics of popular resistance over the locale ecologies are not intended to merely defend any popular wish to reject the new products and labour regime in favor of the locally oriented production regime, as being generally argued by the critics of globalization, rather it is intended to back-stop economic strategies that involves family members seeking work far and wide, in a context where national economies and global capitalist system fail to generate off-farm jobs that pay a living wage'. In such a situation even a tiny patch of land is a crucial safety net, thus the movements like anti-POSCO agitation is emerged out of necessities to defend the very life rather than out of any romantic appreciation of nature.

We thus proceed to argue that, the processes of internal colonization involved in the production of nature, for the purpose of accumulation of capital through dispossession, attributes certain identity to the actors at the locale with respect to their interaction with the natural environment and resources. In the beginning this identity is largely of being 'displaces' or 'depeasantised', but the future direction it would take, and its potential for a social movement is decided by the local political economy, structured by the interplay of the local context, the state and the capital. Therefore, we argue that, the environmental movement has to be seen as a symptom of the issues of developmental paradigm itself, i.e., how the ecologies and economies of certain regions or sub-nationals are getting incorporated into the larger narratives of the national or international developmental paradigms. The empirical evidence from the terrains of the POSCO movement further strengthen this argument, as the popular resistances were never been united and took scattered forms across different spatial units, even though all of them confronted with the

same enemy. The way these disparate sets of resistances played out is largely controlled by the local politics, the politics of place, and its engagement with the neoliberal capital. Thus, it can be argued that the popular resistances in defence of their rights over the ecology are highly place oriented in their nature, involving the strategies of localization. Where the politics of the place are socially produced by the historical processes of the interactions between the local context, the state, and the capital. The emergence of a strong barricade movement against the POSCO at the Dhinkia region was somewhat attributable to the presence of the active Communists elements in the locality. It was the penetration of the capital through the local politician resulted in the splitting of the fisher folk's movement at the Noliasahi region and the weakening of the anti-POSCO elements in the locality. The movement at the Khandadhar region, the mining region, on the other hand, was an extension of the historical movement of the Adivasis in defense of their traditional rights over the forests. The modes of the resistance resorted by the POSCO Pratirodh Sangram Samit, the major anti-POSCO outfit in the Dhinkia village, also involves the spatial strategies of networking and 'glocalization'. Thus the spatial dynamics of the popular resistance over nature make us to further argue that the environmentalism of the global South couldn't be simply an 'environmentalism of the poor', a conflict between the 'ecosystem people' with the 'omnivore' as being argued by Gadgil and Guha (1995), and it is highly place oriented, where the character and the role of the actors, to a greater extend, are determined by their relation to- the nature, the accumulation processes and the dominant political dynamics.

Thus in conclusion we argue that the environmental movement of the global south/ India is not simply an 'environmentalism of the poor', as argued by Guha, nor a 'conservationist environmentalism' of the Western kind, rather it is an environmentalism against the processes of production of nature that involves the displacement of the labour and the geographies of uneven development. On the light of this inadequacy of the concept of 'environmentalism of the poor', we have to critically revisit the theoretical paradigm offered by Guha and Gadgil (1995) that replaces the frameworks of 'modes of production' with 'modes of resource use', thus arguing for the impossibility of a sustainable industrialisation under any modes of production, including socialism. Our

analysis, though based on a limited empirical evidence, suggest the environmental movement are not merely a clash between different modes of resource uses rather a clash for the control over the means of production and the production of nature and space. It is a spatial articulation of the subjugation of the locale ecologies and economies with the capitalist accumulation and experience of underdevelopment. Thus, if the spectre of occupational displacement can be ascribed to the local modalities in which capitalism shows its oppressive face as stated by Adduci (2009), it would have been equally possible to consider the peasantry/tribals who are facing a new and dramatic process of social displacement as a proletarian subject in a broad sense. In that respect, we argue that the environmental movement has to be seen as a class struggle against the mechanism of 'accumulation by dispossession' and the subsequent production of nature.

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Appendices

Appendix 1 [A]: District-Wise Geographic Area and Forest Cover (2009)

Codes	Districts	Total Geographic Area	Area Under Forest Cover	Percentage of area under Forest
2806	RANGAREDDI	7710	391	5.07
2801	ADILABAD	16128	6084	37.72
2822	ANANTAPUR	19130	426	2.23
2823	CHITTOOR	15151	2399	15.83
2820	CUDDAPAH	15359	3409	22.20
2814	EAST GODAVARI	10807	3561	32.95
2817	GUNTUR	11391	863	7.58
2805	HYDERABAD	7710	391	5.07
2803	KARIMNAGAR	11823	1683	14.23
2810	KHAMMAM	16029	7112	44.37
2816	KRISHNA	8727	313	3.59

2821	KURNOOL	17658	2131	12.07
2807	MAHBUBNAGAR	18432	1944	10.55
2804	MEDAK	9700	586	6.04
2808	NALGONDA	14240	151	1.06
2819	NELLORE	13076	937	7.17
2802	NNIZAMABAD	7956	1198	15.06
2818	PRAKASAM	17626	3104	17.61
2811	SRIKAKULAM	5837	616	10.55
2812	VIZIANAGARAM	6539	749	11.45
2813	VISAKHAPATANAM	11161	3445	30.87
2809	WARANGAL	12847	3091	24.06

Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
2815	WEST GODAVARI	7742	909	11.74
1821	CACHAR	3786	1173	30.98
1805	BARPETA	3245	401	12.36
1804	BONGAIGAON	2510	518	20.64
1813	DHEMAJI	3237	290	8.96
1802	DHUBRI	2798	417	14.90
1818	GOLAGHAT	3502	521	14.88
1823	HAILAKANDI	1327	786	59.23
1817	JORHAT	2851	610	21.40
1822	KARIMGANJ	1809	856	47.32
1801	KOKRAJHAR	3169	1163	36.70

1809	MARIGAON	1704	132	7.75
1807	NALBARI	2257	282	12.49
1811	SONITPUR	5324	953	17.90
1814	TINSUKIA	3790	1536	40.53
1808	DARRANG	3481	486	13.96
1806	KAMRUP	4345	1432	32.96
1810	NAGAON	3831	789	20.60
1820	NORTH CACHAR HILLS	4888	4256	87.07
1819	KARBI ANGLONG	10434	7958	76.27
1815	DIBRUGARH	3381	758	22.42
1803	GOALPARA	1824	336	18.42
1812	LAKHIMPUR	2277	288	12.65
1816	SIBSAGAR	2668	693	25.97
1007	ARARIA	2830	90	3.18
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
1031	BHABUA	3381	1062	31.41
1033	JAHAANABAD	1569	3	0.19
1021	KHAGARIA	1486	8	0.54
1008	KISHANGANJ	1884	75	3.98
1011	MADHEPURA	1788	26	1.45
1023	Banka	3022	221	7.31
1030	Buxar	1708	3	0.18
1037	Jamui	3107	632	20.34

1025	Lakhisarai	1356	194	14.31
1026	Sheikhpura	612	0	0.00
1003	Sheohar	572	19	3.32
1006	Supaul	2432	101	4.15
1034	AURANGABAD	3305	151	4.57
1020	BEGUSARAI	1918	43	2.24
1022	BHAGALPUR	2567	42	1.64
1029	BHOJPUR	2390	19	0.79
1013	DARBHANGA	2279	185	8.12
1035	GAYA	4976	630	12.66
1015	GOPALGANJ	2033	4	0.20
1010	KATIHAR	3057	62	2.03
1005	MADHUBANI	3501	136	3.88
1024	MUNGER	1347	265	19.67
1014	MUZAFFARPUR	3172	156	4.92
1027	NALANDA	2367	28	1.18
1036	NAWADA	2494	510	20.45
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
1001	PASHCHIM CHAMPARAN	5228	913	17.46
1028	PATNA	3202	16	0.50
1002	PURBA CHAMPARAN	3968	164	4.13
1009	PURNIA	3229	47	1.46
1032	ROHTAS	3832	706	18.42

1012	SAHARSA	1680	11	0.65
1019	SAMASTIPUR	2904	57	1.96
1017	SARAN	2641	55	2.08
1004	SITAMARHI	2071	82	3.96
1016	SIWAN	2219	2	0.09
1006	VAISHALI	2036	86	4.22
2215	BASTAR	14974	8029	53.62
2207	BILASPUR	8270	2498	30.21
2210	DURG	8549	769	9.00
2216	Dantewada	17634	11350	64.36
2213	Dhamtari	16468	5469	33.21
2206	Janjgir - Champa	3852	157	4.08
2203	Jashpur	5838	2190	37.51
2214	Kanker	6506	3112	47.83
2208	Kawardha	4223	1599	37.86
2205	Korba	6599	3354	50.83
2201	Koriya	6604	4116	62.33
2212	Mahasamund	4789	965	20.15
2204	RAIGARH	7086	2562	36.16
2202	SARGUJA	15731	7165	45.55

Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
2211	RAIPUR	16468	5469	33.21
2209	RAJNANDGAON	8068	2535	31.42

2502	DAMAN	72	3.46	4.81
2501	DIU	40	2.19	5.48
3001	North Goa	1736	865	49.83
3002	South Goa	1966	1286	65.41
2407	AHMADABAD	8707	143	1.64
2413	AMRELI	6760	230	3.40
2402	BANAS KANTHA	9858	844	8.56
2418	Dohad	4405	702	15.94
2420	Narmada	2580	959	37.17
2424	Navsari	2215	290	13.09
2403	Patan	3332	83	2.49
2411	Porbandar	2326	120	5.16
2415	Anand	3214	55	1.71
2421	BHARUCH	6458	319	4.94
2414	BHAVNAGAR	11155	280	2.51
2406	GANDHINAGAR	649	42	6.47
2410	JAMNAGAR	14125	414	2.93
2412	JUNAGADH	8281	1600	19.32
2401	KACHCHH	45652	2311	5.06
2416	KHEDA	3980	95	2.39
2404	MAHASANA	8540	215	2.52
2417	PANCH MAHALS	4461	570	12.78
2409	RAJKOT	11203	141	1.26
		Total Geographic	**Area Under Forest Cover**	**Percentage of area under Forest**

Codes	Districts	Area		
2405	SABAR KANTHA	7390	802	10.85
2422	SURAT	7657	1307	17.07
2408	SURENDRANAGAR	10489	173	1.65
2423	THE DANGS	1762	1368	77.64
2419	VADODARA	7794	623	7.99
2425	VALSAD	3029	934	30.84
602	AMBALA	1574	44	2.80
613	BHIWANI	4778	147	3.08
605	KAITHAL	2520	72	2.86
607	PANIPAT	898	18	2.00
617	REWARI	1745	51	2.92
603	YAMUNANAGAR	1768	193	10.92
610	Fatehabad	2538	18	0.71
615	Jhajjar	2702	32	1.18
601	Panchkula	1268	400	31.55
619	FARIDABAD	2151	93	4.32
618	GURGAON	2766	229	8.28
612	HISAR	3983	42	1.05
609	JIND	1834	20	1.09
606	KARNAL	2317	37	1.60
604	KURUKSHETRA	1530	29	1.90
616	MAHENDRAGARH	1859	70	3.77
614	ROHTAK	1582	23	1.45

611	SIRSA	4277	56	1.31
608	SONIPAT	2122	20	0.94
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
208	BILASPUR	1167	362	31.02
201	CHAMBA	6522	2436	37.35
206	HAMIRPUR	1118	245	21.91
202	KANGRA	5739	2062	35.93
212	KINNAUR	6401	602	9.40
204	KULLU	5503	1958	35.58
203	LAHUL AND SPITI	13841	193	1.39
205	MANDI	3950	1673	42.35
211	SHIMLA	5131	2384	46.46
210	SIRMAUR	2825	685	24.25
209	SOLAN	1936	849	43.85
207	UNA	1540	521	33.83
106	Anantnag	3984	1421	35.67
102	Baramula	4588	1159	25.26
103	Srinagar	2228	752	33.75
104	Badgam	1371	225	16.41
109	Doda	11691	3949	33.78
108	Kargil	14037	21	0.15
101	Kupwara	2379	1160	48.76
105	Pulwama	1398	257	18.38

112	Rajauri	2630	1275	48.48
115	pok	120848	6377	5.28
113	Jammu	3097	889	28.71
114	Kathua	2651	1492	56.28
107	LehLadakh	45110	104	0.23

Codes	Districts	Total Geographic Area	Area Under Forest Cover	Percentage of area under Forest
111	Punch	1674	727	43.43
110	Udhampur	4550	2878	63.25
2012	DHANBAD	2996	205	6.84
2001	gardwa	4092	1365	33.36
2006	GIRIDIH	4963	854	17.21
2004	HAZARIBAG	5998	2053	34.23
2002	PALAMU	8657	3527	40.74
2017	PASHCHIMI SINGHBHUM	9907	3835	38.71
2010	PAKUR	1571	283	18.01
2013	BOKARO	1929	560	29.03
2009	SAHIBGANJ	1834	550	29.99
2015	LOHARDAGA	1491	503	33.74
2018	PURBI SINGHBHUM	3533	1011	28.62
2011	DUMKA	6212	637	10.25
2007	DEOGHAR	2479	169	6.82
2008	GODDA	2110	399	18.91
2016	GUMLA	9077	2657	29.27

2005	KODERMA	1435	600	41.81
2003	CHATRA	3732	1782	47.75
2014	RANCHI	7698	1904	24.73
2921	BANGALORE RURAL	5815	810	13.93
2920	BANGALORE	2190	149	6.80
2912	BELLARY	8450	772	9.14
2927	Chamarajanagar	5101	2636	51.68
2914	Davanagere	5924	742	12.53
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
2908	Gadag	4656	123	2.64
2911	Haveri	4823	399	8.27
2907	Koppal	7189	14	0.19
2916	Udupi	3880	2190	56.44
2902	Bagalkot	6575	200	3.04
2901	BELGAUM	13415	1092	8.14
2905	BIDAR	5448	54	0.99
2903	BIJAPUR	10494	12	0.11
2917	CHIKMAGALUR	7201	3681	51.12
2913	CHITRADURGA	8440	418	4.95
2924	DAKSHIN KANNAD	4560	2860	62.72
2909	DHARWAD	4260	383	8.99
2904	GULBARGA	16224	296	1.82
2923	HASSAN	6814	1330	19.52

2925	KODAGU	4102	3339	81.40
2919	KOLAR	8223	508	6.18
2922	MANDYA	4961	308	6.21
2926	MYSORE	6854	1069	15.60
2906	RAICHUR	6827	25	0.37
2915	SHIMOGA	8477	4408	52.00
2918	TUMKUR	10597	552	5.21
2910	UTTAR KANNAD	10291	7820	75.99
3202	KANNUR	2966	641	21.61
3201	KASARAGOD	1992	592	29.72
3206	PALAKKAD	4480	1575	35.16
3212	PATHANAMTHITTA	2642	1758	66.54
3211	ALAPPUZHA	1414	38	2.69
3208	ERNAKULAM	2407	696	28.92
3209	IDUKKI	5019	3932	78.34
3210	KOTTAYAM	2203	895	40.63
3204	KOZHIKODE	2344	591	25.21
3205	MALAPPURAM	3550	1211	34.11
3213	KOLLAM	2491	1337	53.67
3214	THIRUVANANTHAPURAM	2192	1350	61.59
3207	THRISSUR	3032	933	30.77
3203	WAYANAD	2131	1775	83.29

Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**

2344	BALAGHAT	9229	4996	54.13
2335	BETUL	10043	3572	35.57
2303	BHIND	4459	98	2.20
2328	Barwani	5422	991	18.28
2341	Dindori	7470	2767	37.04
2336	Harda	3330	1028	30.87
2338	Katni	4950	1279	25.84
2318	Neemuch	4256	827	19.43
2301	Sheopur	6606	3521	53.30
2315	Umaria	4076	2033	49.88
2332	BHOPAL	2772	366	13.20
2309	CHHATARPUR	8687	1748	20.12
2343	CHHINDWARA	11815	4539	38.42
2312	DAMOH	7306	2605	35.66

Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
2305	DATIA	2691	157	5.83
2323	DEWAS	7020	1899	27.05
2325	DHAR	8153	734	9.00
2329	EAST NIMAR	10776	3418	31.72
2307	GUNA	11064	2110	19.07
2304	GWALIOR	4560	1193	26.16
2337	HOSHANGABAD	6707	2424	36.14
2326	INDORE	3898	704	18.06

2339	JABALPUR	5211	1169	22.43
2324	JHABUA	6778	936	13.81
2342	MANDLA	5800	2834	48.86
2319	MANDSAUR	5535	260	4.70
2302	MORENA	4989	730	14.63
2340	NARSIMHAPUR	5133	1357	26.44
2310	PANNA	7135	2654	37.20
2334	RAISEN	8466	2736	32.32
2330	RAJGARH	6153	153	2.49
2320	RATLAM	4861	58	1.19
2314	REWA	6314	777	12.31
2311	SAGAR	10252	2906	28.35
2313	SATNA	7502	1750	23.33
2333	SEHORE	6578	1382	21.01
2345	SEONI	8758	3084	35.21
2316	SHAHDOL	9952	2724	27.37
2322	SHAJAPUR	6195	29	0.47
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
2306	SHIVPURI	10277	2450	23.84
2317	SIDHI	10526	4102	38.97
2308	TIKAMGARH	5048	403	7.98
2321	UJJAIN	6091	30	0.49
2331	VIDISHA	7371	869	11.79

2327	WEST NIMAR	8030	1298	16.16
2726	AHMEDNAGAR	17048	286	1.68
2705	AKOLA	5390	322	5.97
2707	AMRAVATI	12210	3187	26.10
2719	AURANGABAD	10107	557	5.51
2710	BHANDARA	3588	891	24.83
2727	BID	10693	175	1.64
2723	GREATER BOMBAY	157	2	1.27
2722	Mumbai (Suburban)	446	120	26.91
2712	GADCHIROLI	14412	10095	70.05
2728	LATUR	7157	5	0.07
2724	RAIGARH	7152	2864	40.04
2711	Gondiya	5733	2011	35.08
2716	Hingoli	4686	114	2.43
2718	JALNA	7718	65	0.84
2733	SINDHUDURG	5207	2573	49.41
2701	Nandurbar	5961	1214	20.37
2706	Washim	5184	332	6.40
2704	BULDANA	9661	589	6.10
2713	CHANDRAPUR	11443	4074	35.60
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
2702	DHULE	7189	321	4.47
2703	JALGAON	11765	1185	10.07

2734	KOLHAPUR	7685	1775	23.10
2709	NAGPUR	9892	2023	20.45
2715	NANDED	10528	914	8.68
2720	NASHIK	15530	1089	7.01
2729	OSMANABAD	7569	43	0.57
2717	PARBHANI	6355	50	0.79
2725	PUNE	15643	1732	11.07
2732	RATNAGIRI	8208	4199	51.16
2735	SANGLI	8572	144	1.68
2731	SATARA	10480	1276	12.18
2730	SOLAPUR	14895	47	0.32
2721	THANE	9558	2912	30.47
2708	WARDHA	6309	859	13.62
2714	YAVATMAL	13582	2605	19.18
1407	IMPHAL EAST	669	216	32.29
1404	BISHNUPUR	496	20	4.03
1409	CHANDEL	3313	2799	84.49
1403	CHURACHANDPUR	4570	4274	93.52
1426	IMPHAL	559	54	9.66
1401	SENAPATI	3271	2303	70.41
1405	THOUBAL	514	56	10.89
1408	UKHRUL	4544	3647	80.26
1705	Ri Bhoi	2376	1688	71.04
		Total Geographic	**Area Under Forest Cover**	**Percentage of area under Forest**

Codes	Districts	Area		
1703	South Garo Hills	1849	1689	91.35
1502	Kolasib	1382	1300	94.07
1507	Lawngtlai	2557	2380	93.08
1501	Mamit	3025	2746	90.78
1508	Saiha	1400	1332	95.14
1505	Serchhip	1421	1118	78.68
1402	tamenglong	4391	3911	89.07
1307	KOHIMA	3283	2865	87.27
1306	dimapur	758	401	52.90
1303	MOKOKCHUNG	1615	1395	86.38
1301	MON	1786	1294	72.45
1308	PHEK	2026	1711	84.45
1302	TUENSANG	4228	3340	79.00
1305	WOKHA	1628	1414	86.86
1702	EAST GARO HILLS	2603	2519	96.77
1706	EAST KHASI HILLS	2820	2079	73.72
1707	JAINTIA HILLS	3819	2581	67.58
1701	WEST GARO HILLS	3715	2717	73.14
1704	WEST KHASI HILLS	5247	4048	77.15
1304	ZUNHEBOTO	1255	1044	83.19
1503	AIZAWL	3575	3323	92.95
1504	CHHIMTUIPUI	3185	2757	86.56
1506	LUNGLEI	4536	4284	94.44

2111	Jagatsinghapur	1668	22	1.32

Codes	Districts	Total Geographic Area	Area Under Forest Cover	Percentage of area under Forest
2113	Jajapur	2899	255	8.80
2102	Jharsuguda	2081	300	14.42
2120	Gajapati	4325	2485	57.46
2104	Debagarh	2940	1341	45.61
2101	Bargarh	5837	897	15.37
2122	Baudh	3098	1255	40.51
2109	Bhadrak	2505	24	0.96
2115	Anugul	6357	2669	41.99
2124	BALANGIR	6575	934	14.21
2108	BALESHWAR	3806	301	7.91
2121	Kandhamal	8021	5484	68.37
2110	Kendrapara	2644	194	7.34
2117	Khordha	2813	375	13.33
2130	Malkangiri	5791	2195	37.90
2128	Nabarangapur	5291	1135	21.45
2116	Nayagarh	3890	1666	42.83
2125	Nuapada	3852	1237	32.11
2127	Rayagada	7073	3126	44.20
2123	Sonapur	2337	324	13.86
2112	CUTTACK	3932	659	16.76

2114	DHENKANAL	4452	1344	30.19
2119	GANJAM	8206	1965	23.95
2126	KALAHANDI	7920	2306	29.12
2106	KENDUJHAR	8303	3229	38.89
2129	KORAPUT	8807	1678	19.05
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
2107	MAYURBHANJ	10418	3990	38.30
2118	PURI	3479	95	2.73
2103	SAMBALPUR	6657	3307	49.68
2105	SUNDARGARH	9712	4063	41.83
302	AMRITSAR	5088	29	0.57
308	Fatehgarh Sahib	1180	1	0.08
315	Mansa	2198	3	0.14
310	Moga	1689	7	0.41
318	CHANDIGARH	114	17	14.91
312	Muktsar	2593	17	0.66
306	Nawanshahr	1282	110	8.58
314	BATHINDA	3353	38	1.13
313	FARIDKOT	1458	12	0.82
311	FIROZPUR	5874	18	0.31
301	GURDASPUR	3551	178	5.01
305	HOSHIARPUR	3386	683	20.17
304	JALANDHAR	2624	4	0.15

303	KAPURTHALA	1633	4	0.24
309	LUDHIANA	3578	63	1.76
317	PATIALA	3654	86	2.35
307	RUPNAGAR	2113	387	18.32
316	SANGRUR	5108	24	0.47
821	AJMER	8481	276	3.25
806	ALWAR	8380	1207	14.40
828	BANSWARA	5037	375	7.44
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
817	BARMER	28387	169	0.60
807	BHARATPUR	5066	236	4.66
824	BHILWARA	10455	222	2.12
803	BIKANER	27244	197	0.72
808	DHOLPUR	3033	419	13.81
831	Baran	6992	1089	15.57
811	Dausa	20634	177	0.86
802	Hanumangarh	20634	177	0.86
809	Karauli	10528	1299	12.34
825	Rajsamand	3860	422	10.93
823	BUNDI	5550	453	8.16
829	CHITTORGARH	10856	1689	15.56
804	CHURU	16830	89	0.53
827	DUNGARPUR	3770	252	6.68

801	GANGANAGAR	20634	177	0.86
812	JAIPUR	14069	631	4.49
816	JAISALMER	38401	162	0.42
818	JALAUR	10640	208	1.95
832	JHALAWAR	6219	396	6.37
805	JHUNJHUNU	5928	193	3.26
815	JODHPUR	22850	93	0.41
830	KOTA	5443	615	11.30
814	NAGAUR	17718	119	0.67
820	PALI	12387	658	5.31
810	SAWAI MADHOPUR	10528	1299	12.34
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
813	SIKAR	7732	192	2.48
819	SIROHI	5136	917	17.85
822	TONK	7194	166	2.31
826	UDAIPUR	13419	3115	23.21
1104	EAST DISTRICT	954	699	73.27
1101	NORTH DISTRICT	4226	1315	31.12
1103	SOUTH DISTRICT	750	571	76.13
1102	WEST DISTRICT	1166	772	66.21
3302	Chennai	144	9	6.25
3312	Coimbatore	7469	1870	25.04

3317	ariyalur	1947	317	16.28
3318	Cuddalore	3706	444	11.98
3313	Dindigul	5580	1429	25.61
3310	Erode	8209	2215	26.98
3303	Kancheepuram	4474	372	8.31
3314	Karur	2901	88	3.03
3319	Nagapattinam	2140	58	2.71
3323	Sivaganga	4086	312	7.64
3309	Namakkal	3413	544	15.94
3316	Perambalur	1748	141	8.07
3325	Theni	2764	1008	36.47
3301	Thiruvallur	3413	213	6.24
3320	Thiruvarur	2716	29	1.07
3328	Thoothukkudi	4621	167	3.61

Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
3315	Tiruchirappalli	4511	410	9.09
3306	Tiruvannamalai	6191	1387	22.40
3304	Vellore	6077	1738	28.60
3307	Viluppuram	7190	1011	14.06
3326	Virudhunagar	4283	289	6.75
3305	Dharmapuri	9622	3027	31.46
3330	Kanniyakumari	1684	479	28.44
3324	Madurai	4277	568	13.28

3322	Pudukkottai	4651	252	5.42
3311	The Nilgiris	2549	2048	80.35
3327	Ramanathapuram	4232	273	6.45
3308	Salem	5235	1218	23.27
3321	Thanjavur	3415	183	5.36
3329	Tirunelveli	6810	1239	18.19
1604	NORTH TRIPURA	2039	1476	72.39
1602	SOUTH TRIPURA	3057	2476	80.99
1603	Dhalai	2402	2003	83.39
1601	WEST TRIPURA	2993	2118	70.77
915	AGRA	4027	276	6.85
912	ALIGARH	3650	66	1.81
945	ALLAHABAD	5137	95	1.85
961	AZAMGARH	4234	27	0.64
950	BAHRAICH	6878	848	12.33
933	KANPUR DEHAT	6176	109	1.76
957	MAHARAJGANJ	2952	461	15.62
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
962	MAU	1713	7	0.41
922	SHAHJEHANPUR	4575	122	2.67
954	SIDDHARTH NAGAR	2895	39	1.35
970	SONBHADRA	6788	2541	37.43
916	FIROZABAD	2361	47	1.99

952	Balrampur	2981	529	17.75
948	Ambedkar Nagar	2337	24	1.03
932	Auraiya	2015	69	3.42
908	Baghpat	1321	17	1.29
966	Chandauli	2549	565	22.17
941	Chitrakoot	3092	561	18.14
910	Gautam Buddha Nagar	1442	35	2.43
913	Hathras	1840	23	1.25
906	Jyotiba Phule Nagar	2249	85	3.78
956	Sant Kabir Nagar	1646	2	0.12
968	Sant Ravidas Nagar Bhadohi	1015	1	0.10
951	Shrawasti	6878	848	12.33
930	Kannauj	2093	28	1.34
944	Kaushambi	2124	27	1.27
959	Kushinagar	2906	35	1.20
939	Mahoba	2884	95	3.29
963	BALLIA	3349	25	0.75
940	BANDA	4532	103	2.27
946	BARABANKI	4402	83	1.89
920	BAREILLY	4120	44	1.07
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
955	BASTI	2688	18	0.67

903	BIJNOR	4561	423	9.27
919	BUDAUN	5168	42	0.81
911	BULANDSHAHR	2910	115	3.95
960	DEORIA	2538	15	0.59
931	ETAWAH	2311	186	8.05
947	FAIZABAD	2174	55	2.53
929	FARRUKHABAD	2181	46	2.11
942	FATEHPUR	4152	45	1.08
909	GHAZIABAD	2590	49	1.89
965	GHAZIPUR	3377	31	0.92
953	GONDA	4003	107	2.67
958	GORAKHPUR	3321	64	1.93
938	HAMIRPUR	4282	174	4.06
925	HARDOI	5986	121	2.02
935	JALAUN	4565	244	5.35
964	JAUNPUR	4038	51	1.26
936	JHANSI	5024	200	3.98
934	KANPUR NAGAR	6176	109	1.76
923	KHERI	7680	1320	17.19
937	LALITPUR	5039	570	11.31
927	LUCKNOW	2528	301	11.91
918	MAINPURI	2760	14	0.51
914	MATHURA	3340	60	1.80
907	MEERUT	2590	66	2.55

Codes	Districts	Total Geographic Area	Area Under Forest Cover	Percentage of area under Forest
969	MIRZAPUR	4521	866	19.16
904	MORADABAD	3718	26	0.70
902	MUZAFFARNAGAR	4008	41	1.02
921	PILIBHIT	3499	698	19.95
943	PRATAPGARH	3717	93	2.50
928	RAE BARELI	4609	98	2.13
905	RAMPUR	2367	77	3.25
901	SAHARANPUR	3689	375	10.17
924	SITAPUR	5743	213	3.71
949	SULTANPUR	4436	177	3.99
926	Unnao	4558	250	5.48
967	VARANASI	1528	12	0.79
513	HARDWAR	2360	618	26.19
512	udhamsing nagar	2542	543	21.36
510	Bageshwar	2246	1381	61.49
508	Champawat	1766	1181	66.87
503	Rudraprayag	1984	1125	56.70
509	ALMORA	3139	1577	50.24
502	CHAMOLI	8030	2695	33.56
505	DEHRADUN	3088	1607	52.04
506	GARHWAL	5329	3289	61.72
511	NAINITAL	4251	3093	72.76

507	PITHORAGARH	7090	2094	29.53
504	TEHRI GARHWAL	3642	2147	58.95
501	UTTARKASHI	8016	3145	39.23

Codes	Districts	Total Geographic Area	Area Under Forest Cover	Percentage of area under Forest
1913	BANKURA	6882	1056	15.34
1918	SOUTH 24 PARAGANAS	9960	2404	24.14
1904	Uttar Dinajpur	3140	176	5.61
1909	BARDDHAMAN	7024	261	3.72
1908	BIRBHUM	4545	105	2.31
1917	CALCUTTA	185	0	0.00
1903	KOCH BIHAR	3387	94	2.78
1901	DARJILING	3149	2289	72.69
1916	HOWRAH	1467	146	9.95
1912	HUGLI	3149	61	1.94
1902	JALPAIGURI	6227	2506	40.24
1906	MALDAH	3733	164	4.39
1915	MEDINIPUR	14081	2595	18.43
1907	MURSHIDABAD	5324	107	2.01
1910	NADIA	3927	129	3.28
1911	NORTH 24 PARAGANAS	4094	89	2.17
1914	PURULIYA	6259	797	12.73
1905	WEST DINAJPUR	2219	15	0.68
1203	EAST KAMENG	11556	10260	88.79

1212	CHANGLANG	4662	4255	91.27
1201	TAWANG	2172	1225	56.40
1204	Papum pare	3462	3249	93.85
1202	WEST KAMENG	11556	10260	88.79
1211	LOHIT	11402	7631	66.93
1210	DIBANG VALLEY	13029	9317	71.51
Codes	**Districts**	**Total Geographic Area**	**Area Under Forest Cover**	**Percentage of area under Forest**
1208	EAST SIANG	3655	2802	76.66
1209	upper siang	7050	5597	79.39
1207	WEST SIANG	7813	6719	86.00
1206	UPPER SUBANSIRI	7032	5810	82.62
1205	LOWER SUBANSIRI	9548	8675	90.86
1213	TIRAP	2362	1813	76.76
3501	ANDAMANS	6408	5313	82.91
3502	NICOBARS	1841	1349	73.28
4	CHANDIGARH	114	17	14.91
26	DADRA AND NAGAR HAVELI	491	211	42.97
7	DELHI DISTRICT	1483	176.58	11.91
31	LAKSHADWEEP DISTRICT	32	26.48	82.75
3401	PONDICHERRY	480	43.87	9.14

Source: India State of Forest Report 2009, Ministry of Environment and Forestry, Government of India

Appendix 1 [B]: District-Wise Area, Output and Productivity (2005-08)

Districts	Area Under 35 Crops (in Ha)	Value Output (35 crops value in $ 000)	Productivity
Andhra Pradesh			
Adilabad	548878	5876643	10706.65
Anantapur	973862	6413064	6585.19
Chittur	315219	3664123	11624.06
Cuddapah	384125	3637217	9468.84
East Godavari	664510	9601506	14449.00
Hyderabad	205180	2174573	10598.37
Karimnagar	673560	11243590	16692.78
Khammam	451038	7365219	16329.49
Krishna	586087	8111175	13839.54
Mah.Nagar	794869	6571185	8267.00
Medak	473122	5063356	10702.01
Nalgonda	600319	5845567	9737.43
Guntur	2543603	36017564	14160.06
Nizamabad	384926	5869676	15248.84
Srikakulam	1028000	10259448	9980.01
Warangal	595399	9155150	15376.50
West Godavari	627445	10812146	17232.02
Assam			
Silcer	309570	2784011	8993.16
Darrang	417458	4263886	10213.93

Goalpara	509065	3381919	6643.39
Kamrup	487846	3538065	7252.42
N.Lakhimpur	603420	6978510	11564.93
Nagaon	372222	2927712	7865.50
Districts	**Area Under 35 Crops (in Ha)**	**Value Output (35 crops value in $ 000)**	**Productivity**
Jorhat	459012	5074216	11054.65
Bihar			
Bhagalpur	309395	2182906	7055.40
Champaran	718237	4596848	6400.18
Darbhanga	689979	3255766	4718.65
Hazaribagh	314994	2347581	7452.78
Gaya	657049	4413992	6717.90
Monghyr	1128225	6892101	6108.80
Muzaffarpur	685138	3386640	4943.00
Palamau	169261	1084206	6405.53
Patna	450010	2963907	6586.31
Purnea	953189	4915878	5157.30
Ranchi	479104	3178524	6634.31
Dumka	403356	3364091	8340.25
Saran	677965	4241608	6256.38
Bhojpur	919733	8337348	9064.97
Singhbhum	346717	1977906	5704.67
Gujarat			
Ahmedabad	554159	4232970	7638.55
Amreli	574918	7759286	13496.34

Banas Kantha	813872	7626587	9370.75
Bharuch	373606	3360192	8993.95
Bhavnagar	588142	9825553	16706.09
Dangs	52607	327432	6224.11
Jamnagar	659269	10976793	16649.95
Junagarh	827528	13624677	16464.31
Kheda	588278	6104572	10377.02
Districts	**Area Under 35 Crops (in Ha)**	**Value Output (35 crops value in $ 000)**	**Productivity**
Kutch	379549	3480055	9168.92
Mehsana	648720	5894555	9086.44
Panch Mahals	576534	3114590	5402.27
Rajkot	841278	16334020	19415.72
Sabarkantha	522448	4826527	9238.29
Surat	293042	3133736	10693.81
Surendranagar	692598	7561437	10917.50
Vadodara	482031	4942763	10254.04
Valsad	190826	1941019	10171.67
Haryana			
Ambala	389789	5041497	12933.91
Gurgaon	490019	5008259	10220.54
Hissar	1899758	24246804	12763.10
Jind	408720	4954483	12121.95
Karnal	1145153	16387468	14310.29
Mahendragarh	476336	3784397	7944.81
Rohtak	747771	7469049	9988.42

Jammu & Kashmir			
Jammu	497582	2773449	5573.85
Srinagar	180995	1064529	5881.54
Karnataka			
Bangalore	209093	1421221	6797.08
Belgaum	930385	8120614	8728.23
Bellary	730999	6515806	8913.56
Bidar	415287	2090443	5033.73
Bijapur	1496992	8279228	5530.58
Chikmagalur	322309	4814586	14937.80
Districts	**Area Under 35 Crops (in Ha)**	**Value Output (35 crops value in $ 000)**	**Productivity**
Chitradurga	636776	5117512	8036.60
Dakshinakannada	252649	4516758	17877.60
Dharwad	1355340	8158897	6019.82
Gafcarga	1372791	7559829	5506.90
Hassan	420756	4673044	11106.30
Kodagu	176972	4958088	28016.23
Kolar	177127	1115460	6297.52
Mandya	220785	2833098	12831.93
Mysore	747268	6358730	8509.30
Raichur	1168136	6633734	5678.91
Shimoga	380492	5800432	15244.56
Tumkur	596678	5097845	8543.71
Uttarakannada	124464	1719698	13816.83
Kerala			

Aleppuzha	109933	1956549	17797.65
Kannur	373155	8763266	23484.25
Ernakulam	562462	12266432	21808.46
Kozhikoda	714961	14320086	20029.18
Kollam	216420	5131183	23709.38
Trissur	150921	3346315	22172.63
Thiruvananthapuram	132253	2979801	22531.07
Madhya Pradesh			
Balaghat	331030	2476447	7481.03
Bastar	738151	3881935	5259.00
Betul	337464	2269420	6724.92
Bhind	509943	2949559	5784.10
Bilaspur	965485	5335945	5526.70
Districts	**Area Under 35 Crops (in Ha)**	**Value Output (35 crops value in $ 000)**	**Productivity**
Chhatarpur	398063	1457845	3662.35
Chindwara	533240	3932314	7374.38
Damoh	398316	1913786	4804.69
Datia	218165	1204903	5522.90
Dewas	558798	4214321	7541.76
Dhar	690335	4977131	7209.73
Durg	1317851	8018904	6084.83
East Nimar	475340	2468646	5193.43
Guna	715579	3833462	5357.15
Gwalior	223196	1721399	7712.50
Hoshangabad	795648	7027315	8832.19

Indore	384965	3223714	8374.04
Jabalpur	569765	2518144	4419.62
Jhabua	415806	1518229	3651.29
Mandla	424445	1576100	3713.32
Mandsaur	696268	3847048	5525.24
Morena	501562	4520639	9013.12
Narsimpur	370867	2903500	7828.95
Panna	272221	1002758	3683.62
Raigarh	527166	2489575	4722.56
Raipur	1154865	6968131	6033.72
Raisen	524267	3178075	6061.94
Rajgarh	521165	2985809	5729.10
Ratlam	436932	326633	747.56
Rewa	471942	1628755	3451.18
Sagar	694163	2932353	4224.30
Satna	456074	1439181	3155.59
Districts	**Area Under 35 Crops (in Ha)**	**Value Output (35 crops value in $ 000)**	**Productivity**
Sehore	777660	5005188	6436.22
Seoni	449791	2403118	5342.74
Shahdol	459386	1723871	3752.55
Shajapur	597238	3452465	5780.72
Shivpuri	472888	3003566	6351.54
Sidhi	415745	1437461	3457.55
Sarguja	565458	2491654	4406.44
Tikamgarh	233323	931568	3992.61

Ujjain	719401	5106999	7098.96
Vidisha	648009	3663989	5654.23
West Nimar	723184	3547184	4904.95
Maharashtra			
Ahmednagar	1225449	5761453	4701.50
Akola	1097587	7917214	7213.29
Amrawati	827916	5160502	6233.12
Aurangabad	1750691	11285421	6446.27
Bhandara	479593	2881849	6008.95
Beed	3698848	16587416	4484.48
Buldhana	844738	4864936	5759.11
Chandrapur	747129	4338997	5807.56
Dhule	734201	4276939	5825.30
Jalgaon	978239	7727485	7899.38
Kolhapur	434347	6279370	14457.04
Nagpur	617372	3969232	6429.24
Nanded	896725	3985011	4443.96
Nasik	725118	3782750	5216.74
Osmanabad	1468213	8026344	5466.74
Districts	**Area Under 35 Crops (in Ha)**	**Value Output (35 crops value in $ 000)**	**Productivity**
Parbhani	1180874	7156598	6060.42
Pune	949442	5241343	5520.45
Raigad	162104	1663742	10263.42
Ratnagiri	211936	2743707	12945.92
Sangli	648177	4086373	6304.41

Satara	568087	4013513	7064.96
Solapur	1039057	6035502	5808.63
Thane	181143	1485151	8198.78
Wardha	446315	3245194	7271.08
Yawatmal	984507	7189087	7302.22
Orissa			
Balasore	670438	4735751	7063.67
Bolangir	495565	3376269	6812.97
Cuttack	1051669	7814977	7431.02
Dhenkanal	339573	2528203	7445.24
Ganjam	514051	3772047	7337.88
Kalahandi	1391091	8335308	5991.92
Keonjhar	314661	2312221	7348.29
Mayurbhanj	301740	2535592	8403.23
Phulbani	151549	1062346	7009.92
Sambalpur	687570	5922493	8613.66
Sundergarh	264743	1536090	5802.19
Punjab			
Amritsar	498954	6714565	13457.28
Bhatinda .	1076042	14489298	13465.36
Firozpur	1513067	22440303	14831.00
Gurdaspur	468884	6029589	12859.45
Districts	**Area Under 35 Crops (in Ha)**	**Value Output (35 crops value in $ 000)**	**Productivity**
Hoshiarpur	359916	4167251	11578.40
Jalandhar	478802	7100943	14830.65

Kapurthala	245500	3914033	15943.11
Ludhiana	546155	9427007	17260.68
Patiala	649183	10591273	16314.77
Ropar	143779	1810283	12590.73
Sangrur	708877	11631385	16408.19
Rajasthan			
Ajmer	432747	1046983	2419.39
Alwar	756200	6242985	8255.73
Banswara	338203	1643467	4859.41
Barmer	1270105	925826	728.94
Bharatpur	731865	6501866	8883.97
Bhilwara	525851	2672848	5082.90
Bikaner	805279	2702349	3355.79
Bundi	366335	3569782	9744.58
Chittorgarh	636110	5168206	8124.70
Churu	1070353	1884547	1760.68
Dungarpur	176271	648769	3680.52
Ganganagar	1630042	13913934	8535.94
Jaipur	1156055	7095916	6138.04
Jaisalmer	286118	926687	3238.83
Jalore	679981	2651071	3898.74
Jhalawar	417112	3480202	8343.57
Jhunjhunu	591000	2842465	4809.59
Jodhpur	1095932	2730437	2491.43
Kota	785879	8344961	10618.63

Districts	Area Under 35 Crops (in Ha)	Value Output (35 crops value in $ 000)	Productivity
Nagour	1267778	4321058	3408.37
Pali	563503	1626828	2886.99
Sawai Madhopur	616603	4959760	8043.68
Sikar	656933	3109188	4732.88
Sirohi	179946	1150329	6392.63
Tonk	527807	2830557	5362.86
Udaipur	485856	2581804	5313.93
Tamil Nadu			
Chengalpattu	282294	4708519	16679.49
Coimbatore	536396	13015655	24265.01
Kanniya Kumari	79961	2248963	28125.75
Madurai	437050	7484511	17125.07
N.Arcott(Amb)	476980	8226624	17247.31
Ramanath Puram	407048	4101783	10076.90
salem	747546	14969976	20025.49
South Arcot	596930	11820837	19802.72
Thanjavur	774676	9571189	12355.09
Tiruchirapalli	480996	6495421	13504.11
Tirunelveli	314480	3912341	12440.67
Uttar Pradesh			
Agra	455171	5461301	11998.35
Aligarh	566233	5897418	10415.18
Allahabad	651366	5855130	8989.00
Azamgarh	740114	6162896	8326.96

Badaun	621946	5707805	9177.33
Bahraich	590987	4927900	8338.42
Ballia	346393	2752416	7945.93
Districts	**Area Under 35 Crops (in Ha)**	**Value Output (35 crops value in $ 000)**	**Productivity**
Banda	592189	2583704	4362.97
Barabanki	717995	4149460	5779.23
Bareilly	502016	5520599	10996.86
Basti	847835	7323155	8637.48
Bijnor	393271	7347622	18683.36
Bullandshahr	422540	5212732	12336.66
Dehradun	63758	512842	8043.57
Deoria	621768	6581506	10585.15
Etah	406102	4820140	11869.28
Etawah	436811	4347295	9952.35
Faizabad	426990	4544761	10643.72
Farrukhabad	327260	5848605	17871.43
Fatehpur	381367	3537335	9275.41
Ghazipur	435167	3713202	8532.82
Gonda	712302	7522963	10561.48
Gorakhpur	722398	6429403	8900.08
Hamirpur	592283	2514507	4245.45
Hardoi	610314	6407835	10499.24
Jalaun	438030	2796030	6383.19
Jaunpur	413739	3754965	9075.69
Jhansi	781877	4045610	5174.23

Kanpur	445143	4634004	10410.15
Kheri	672356	9330445	13877.24
Lucknow	164485	1368411	8319.37
Mainpuri	459666	5152935	11210.17
Mathura	422975	4798038	11343.55
Meerut	547638	11064056	20203.23
Districts	**Area Under 35 Crops (in Ha)**	**Value Output (35 crops value in $ 000)**	**Productivity**
Mirzapur	426757	2471681	5791.78
Moradabad	683993	8884327	12988.92
Muzaffamagar	418175	8607939	20584.54
Nainital	307144	3739870	12176.28
Pilibhit	391514	5176042	13220.58
Pratapgarh	298320	2247961	7535.40
Raebareli	399367	3074753	7699.07
Rampur	324084	3545639	10940.49
Shaharanpur	360217	7014464	19472.88
Shahjahanpur	538158	6301200	11708.83
Sitapur	588407	6468602	10993.41
Sultanpur	399492	3585906	8976.16
Unnao	325291	3324364	10219.66
Varanasi	497375	4076125	8195.28
West Bengal			
24 Parganas (N)	855339	9674518	11310.74
Bankura	482003	6427531	13335.04
Birbhum	488512	6358638	13016.34

Burdwan	765033	10965600	14333.50
Cooch-Bihar	452342	6238936	13792.52
Hoogly	473452	7983591	16862.51
Howrah	142145	1586008	11157.68
Jalpaiguri	493390	6462941	13099.05
Maldah	326686	3766347	11528.95
Midnapur	1335388	15855716	11873.49
Murshidabad	845224	9536564	11282.88
Nadia	593379	6557384	11050.92
Districts	**Area Under 35 Crops (in Ha)**	**Value Output (35 crops value in $ 000)**	**Productivity**
Purulia	320926	3090651	9630.42
West Dinajpur	700445	6645860	9488.05

Source: Bhalla, G.S. and G. Singh. (2012*). Economic Liberalization and Indian Agriculture: A District-Level Study*. New Delhi: Sage Publications.

Appendix 2: Percentage share of various Land-use Categories to total Reporting Area 2000-01 to 2010-11

Region	Land Use Category	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Coastal Odisha	Forest	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.64	18.68
	AUNA	11.87	11.87	11.87	11.87	11.87	11.87	16.21	16.21	16.21	15.20	15.75
	BUW	1.99	1.99	1.99	1.99	1.99	1.99	2.64	2.64	2.64	2.49	2.57
	AUP	54.40	52.52	52.52	52.52	52.52	52.52	53.09	53.09	53.09	49.40	49.06
	SAL	60.55	60.55	60.55	60.55	60.55	60.55	56.97	56.97	56.97	56.52	55.83
	PP	3.04	3.04	3.04	3.04	3.04	3.04	2.71	2.71	2.71	4.15	4.24

Southern Odisha	Forest	41.30	41.30	41.30	41.30	41.30	41.30	41.30	41.30	41.30	40.98	41.02
	AUNA	4.77	4.77	4.77	4.77	4.77	4.77	5.90	5.90	5.90	5.56	5.71
	BUW	7.50	7.50	7.50	7.50	7.50	7.50	7.28	7.28	7.28	11.39	10.90
	AUP	35.92	35.75	35.75	35.75	35.75	35.75	35.97	35.97	35.97	32.88	33.19
	SAL	40.53	40.53	40.53	40.53	40.53	40.53	40.03	40.03	40.03	37.90	38.13
	PP	2.85	2.85	2.85	2.85	2.85	2.85	3.41	3.41	3.41	2.95	2.92
Northern Odisha	Forest	41.42	41.42	41.42	41.42	41.42	41.42	41.42	41.42	41.42	42.16	42.55
	AUNA	5.83	5.83	5.83	5.83	5.83	5.83	7.56	7.56	7.56	7.33	7.27
	BUW	4.46	4.46	4.46	4.46	4.46	4.46	4.37	4.37	4.37	3.37	3.22
	AUP	38.66	38.13	38.13	38.13	38.13	38.13	37.83	37.83	37.83	33.86	32.93
	SAL	42.76	42.76	42.76	42.76	42.76	42.76	41.49	41.49	41.49	42.86	42.80
	PP	2.75	2.75	2.75	2.75	2.75	2.75	3.10	3.10	3.10	3.43	3.37
Odisha	Forest	37.33	37.33	37.33	37.33	37.33	37.33	37.33	37.33	37.33	37.42	37.58
	AUNA	6.42	6.42	6.42	6.42	6.42	6.42	8.34	8.34	8.34	7.92	8.06
	BUW	5.41	5.41	5.41	5.41	5.41	5.41	5.39	5.39	5.39	6.93	6.67
	AUP	40.20	39.59	39.59	39.59	39.59	39.59	39.69	39.69	39.69	36.18	35.93
	SAL	44.90	44.90	44.90	44.90	44.90	44.90	43.57	43.57	43.57	43.00	42.96
	PP	2.85	2.85	2.85	2.85	2.85	2.85	3.17	3.17	3.17	3.33	3.32
	Forest	22.88	22.85	22.87	22.90	22.89	22.92	22.91	22.89	22.88	22.88	22.89

India	AUNA	7.78	7.84	7.90	8.02	8.10	8.18	8.32	8.47	8.57	8.59	8.67
	BUW	5.73	5.71	5.74	5.72	5.72	5.67	5.66	5.57	5.51	5.57	5.57
	AUP	51.15	51.15	50.56	50.79	50.86	50.87	50.82	50.93	51.04	50.74	50.95
	SAL	58.98	59.03	58.95	58.83	58.77	58.70	58.60	58.57	58.56	58.52	58.46
	PP	3.49	3.45	3.42	3.43	3.42	3.42	3.41	3.39	3.38	3.38	3.37

Source: Calculated from Land use statistics by Directorate of Economics and Statistics, Ministry of Agriculture, Government of India

Note: AUNA: Area Under Non-Agricultural Activities; BUW- Barren and Un-culturable land; AUP- Area under plough; SAL- Stock of agricultural land; PP- Permanent pastures & other grazing lands.

Appendix 3: Interview Questionnaire (an outline)

Field Survey at Jagatsinghpur District, Odisha 2014

Questionnaire for the Key Informant Interviews

Village & GP Name:

Date of the Survey:

1. Name of the informant:
2. Organization belongs to:
3. When did the movement has stated:
4. When did you started in supporting this movement:
5. What was the reasons which made you to take the leadership of this movement:
6. What is the general approach of the people in the locality towards the movement and the association of your organization:
7. Do you think the socio-economic inequality among the people is adversely affecting the future prospect of this movement?

Give comments:

8. What according to you resulted in the split in the movement:

Of which, whom you are supporting and why:

9. What are the major demands and modes of protest of this branch of protests:
10. Do you think the electoral victory of the ruling party (BJD) to the state government, even out of all this protests is something due to the failure of this movement to raise the issue more politically:
11. How far you can take the issue beyond the local limits:

How do you see the changes in the venue of the protests from the local epicenters to the State capital to the National Capital? How was the people's approach to this?

12. Could you able to coordinate with other movements of this nature by the people in other parts of Odisha and country:
13. According to you who is the chief adversaries of this movement? (the State Govt. or the Union Govt. or the POSCO company) and why:
14. Does the Govt. came for any kind of negotiation and how many times:

How do you see the approach of the police towards the movement?

15. It has been heard that though the present LARR-2013 law has empowered the Gramasabha to take final decision regarding the fate of the land acquisition in respective villages, the State government is trying to bypass the decision of the Gramasabha, how far this is correct? And do you think, if it is right, it is the processes of undermining of the processes of decentralization of power and governance?
16. Do you think the approach of the local and national media was helpful to the course of the movement?
17. How do you see the approach of the urban intelligentsia and the academics to the movement? Do you think the movement is going to be benefited out of it?
18. How do you characterize the nature of this movement:
19. How do you see the future of the movements of this kind: