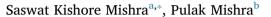
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Determinants of households' resistance against land acquisition for mining: Experiences at Talcher coalfields in India



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ABSTRACT

In the context of people's protests against land acquisition for mining in the Indian state of Odisha, the present paper attempts to identify the underlying household level factors. The paper uses primary data collected from the Talcher coalfield region of the state and estimates limited dependent variable models. It is found that the households belonging to the scheduled tribe category or having larger per capita income or with greater access to basic amenities are more inclined to give up their land for mining. However, such inclination is lower when they have more land or better education or are concerned about deforestation and pollution. As regards the amount, the paper finds that households with higher per capita income or larger per capita asset base or greater access to basic amenities desire to give up more land. On the other hand, willingness to give up land is less either when households possess more land holding or when there is a larger male workforce in the family.

1. Introduction

Potential of mining to enhance the levels of income, employment and standard of living in the mineral-rich economies are well documented in the literature (e.g., Ejdemo and Soderholm, 2011; Ye, 2008; Fisher et al., 2009; Brunnschweiler, 2006). While many economies predominately depend on mining for their growth and development, implementation of such strategy requires acquisition of large amounts of land leading to changes in its ownership rights and characteristics. This often leads to social conflicts that are generally driven by the socioeconomic and political setup, stakeholders' bargaining power and their perceptive differences about the outcomes of mining at various levels.¹ In many cases, such conflicts result in resistances by those who perceive losses in the process. This is possibly due to the existing social structures that significantly influence the impacts of mining on rural livelihoods (Bebbington et al., 2008). There is evidence of mining-led development initiatives being delayed, interrupted, and even shut down due to public oppositions (Browne et al., 2011; Davis and Franks, 2011; Prno and Slocombe, 2012; Thomson and Boutilier, 2011).

Thus, simply obtaining formal license from governments and meeting the regulatory requirements are no longer enough for mining (Moffat and Zhang, 2014). Instead, building trusts with local communities is crucial for the companies to obtain and maintain a social license for mining (Moffat and Zhang, 2014). This is important considering that attempts at acquisition of land for mining have been met with significant resistances in different parts of India in recent years, stalling the implementation of projects.² Notably, the value of these stalled projects stood at 8 percent of India's GDP during 2011-2014, and land acquisition problems comprised the bulk of stalling in the public sector (GoI, 2015). The situation has become grave in the Indian state of Odisha, which is one of the most mineralrich but economically backward states in the country. Land acquired in Odisha as a proportion of its total requirement for mining and miningbased projects is very low.³ As a consequence, only 21.67 percent of the proposed investment came to realization during 2002–2013.⁴ This is a matter of serious concern due to unsuitability of farming in a large part of the state, disguised unemployment in agriculture and declining average size of cultivable landholding.

The important question is why are people protesting against land acquisition for mining? The existing studies have emphasized on human rights related issues (ICMM, 2013), along with societal sustainability (Downing, 2002), food insecurity (Robertson and Andersen, 2010;

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¹ It is suggested that fair treatment and appropriate engagement of mining companies with the communities along with mitigation of operational impacts are necessary to secure and hold a social license (Moffat and Zhang, 2014). This can help in overcoming the conflicts and facilitate the mining-led development process.

² The details on protests against land acquisition in India are documented in Mishra (2016).

³ The total land acquired as a proportion of its requirement so far is only 27.96 percent in case of mining projects and 39.28 percent for others (IDCO, 2015).

⁴ For details, see *The Times of India*, 23 September 2015.

Downing, 2002), exclusion of women (Jenkins, 2014), etc. Interventions and debates in the Indian context, on the other hand, have focused mainly on the price of land, and compensation for and resettlement of affected people for resolving protests (e.g., Ghatak and Mookherjee, 2014; Marjit, 2011; Ghatak and Ghosh, 2011). Studies in the Indian context have also accounted for the adverse ecological consequences of mining (i.e., Mishra and Mishra, 2017; Garada, 2013; Singh et al., 2010; CSE, 2008).

Thus, so far the problem of land acquisition in India has been seen at the macro level and from the perspective of the land owners. But, a comprehensive approach to the problem requires a detailed scrutiny of various household level factors as well. This is because land is an asset that has significant value for the households as a regular source of livelihood, security for future and social status. The policies and regulatory framework designed in isolation of the household level factors, therefore, are unlikely to address the problem of land acquisition adequately. Thus, the objective of the paper is to identify the household level factors that influence willingness to give up land for mining.

The paper is divided into six sections. The methodologies applied and sources of data used in the paper are given in detail in Section 2. While Section 3 critically reviews the existing studies, Section 4 specifies the estimated econometric models. The regression results are presented and discussed in Section 5, whereas Section 6 summarizes the major findings, highlighting various policy implications.

2. Methodology and study area

2.1. Description of the study area

The paper uses primary data collected from Talcher coalfield region, situated in Angul district of Odisha. These coalfields are operated by Mahanadi Coalfields Limited (MCL) - a subsidiary of the Coal India Limited (CIL). In 2015-2016, Talcher recorded a production of 137.9 metric tonne, becoming the largest producer of coal in the country.⁵ Besides, it is also one of the major industrial zones in the state with a rapid growth of industrial activities over the years primarily due to availability of non-cooking coal in the region and abundant water in the Brahmani River. According to CPCB (2009), the Angul-Talcher region is the seventh most critically polluted industrial cluster of India. There are instances of people protesting against lack of necessary enforcement by the Odisha State Pollution Control Board (OSPCB). The region has the lowest land acquisition rate in the district.⁶ Importantly, Talcher has 11 coal mines and 38.65 billion tonnes coal reserves, the highest in India.⁷ Although more than 27,000 acres of land including forest areas have already been diverted for these mines affecting more than 15,000 households, attempts are being made to facilitate further land acquisition to accommodate the proposed projects.⁸

2.2. Data collection and sampling strategy

Understanding the conflicts between micro (individual) and macro (community) level interests is necessary in the context of land acquisition debate. All of the households in a particular area may not oppose land acquisition. Even when a household opposes, the underlying motive(s) may vary depending upon the various household level characteristics. Accordingly, the present paper reports findings of household survey along with focus group discussions.

Necessary primary data were collected from 225 sample households selected from six villages (namely Balugaon, Madanmohanpur,

Langijoda, Anadipur, Padmabatipur, and Rakas) across two gram panchayats (Kandhal and Padmabatipur) of Talcher block. The sample villages are chosen in such a way that they lie within a radius of 5 km from the mining regions. This is done considering that the most acute impacts on livelihoods and ecology are likely to be in areas located in close proximity to the mining sites. Further, coal mining in the vicinity of these villages has been ongoing for more than five decades.

The sample households were selected following stratified random sampling procedure in proportionate to the population size of the villages. Three focus group discussions were conducted informally during evening gatherings of the villagers at a central place of the village. In such gatherings, issues were discussed and necessary information/data were gathered on the basis of their responses. In addition to focus group discussions, structured questionnaire was also used to collect necessary primary data.

3. Review of literature

In general, existing studies have used Leontief's (1936) input-output framework to examine how mining contributes to the national economy (e.g., Leaming, 2007; Cristobal and Biezma, 2006; Aroca, 2001; Stillwell et al., 2000) or development at the local level (e.g., Ejdemo and Soderholm, 2011; Pascó-Font et al., 2001; Castillo et al., 2001). While the relationships between mining and socio-economic outcomes at various levels are inconclusive (e.g., Hajkowics, 2011; Tiplady and Barclay, 2008; Taylor and Scambary, 2005), often the indigenous communities are found to be excluded from the socio-economic benefits of mining operations (Ge and Lei, 2013; Keenan et al., 2002). In India, mining has significantly contributed to the national economy (Sinha et al., 2007) and enhanced the financial capital of the local communities (Mishra, 2009). But, much of these financial benefits were reaped by salaried mine workers (Sinha et al., 2007). Moreover, according to Mishra (2009), mining has failed to facilitate development of human capital in Odisha. Thus, while mining strengthens the financial base at the macro level, its benefits may not be realized at the local level, limiting the extent of inclusion.

Furthermore, mining may also fail to promote social development at local level, aggravating protests against acquisition of land for future projects. While the existing studies in general have focused on understanding the socio-economic and other outcomes of mining, possible influence of these outcomes on households' protest against land acquisition has remained largely unexplored. In case of Odisha, only limited efforts have been made so far towards a comprehensive assessment of the outcomes of mining. Addressing this issue is crucial considering that lack of necessary capabilities coupled with information asymmetry, weak institutions, and socio-political constraints can raise uncertainty about potential benefits of mining for the individuals and force people to protest.

Various econometric approaches have failed to resolve the debate on the impact of resource sectors on socio-economic outcomes. A number of studies (e.g., Gamu et al., 2015; Davis and Cordano, 2013) contradict the commonly perceived notions that mining is either propoor or anti-poor. While Gamu et al. (2015) found no evidence of impacts of mining on poverty, according to Davis and Cordano (2013), growth of extractive sector affects poverty and income inequality either positively or negatively.

In addition, mining adversely affects the stock and quality of natural capital. Some of these adverse consequences include loss of biodiversity (EAMR, 2013), forest cover (Wani and Kothari, 2008), depletion of nonrenewable resources, transformation of cultivable land into waste land (Li, 2006), air and noise pollution (Ghose and Maje, 2003), increased carbon emissions and climate change (Bjureby et al., 2008). A number studies have shown that the potential adverse ecological impacts can lead to conflicts between local communities and mining companies (Mishra and Mishra, 2017; Gamu et al., 2015; Helwege, 2015). Hence, a deeper understanding of the problem not only requires examining the

⁵ For details, see Business Standard, 4 April 2016.

⁶ For details, see Mishra (2016).

 $^{^{7}}$ The details are available at http://www.orissaminerals.gov.in/Mines/default.aspx?GL=Ghome.

⁸ Office of the Block Development Officer (BDO), Talcher (as on 29 April 2012).

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