

Abstract

Conventional economic argument suggests that higher economic growth and development is positively associated with increasing stock of natural asset of a country and/or region. However, empirical evidences suggest that the relationship between natural resource abundance and economic development can either be detrimental, beneficial or both. Because mineral resources are non-renewable, their extraction has important implications for intra and intergenerational equity. At local level, mineral extraction causes many socioeconomic disparities, governance and environmental problems. The present study makes an attempt to examine the association between mineral extraction and socioeconomic development outcomes, assess the effects of mining on agricultural production and human health, and traditional local livelihood systems in the Indian state of Odisha. The study uses a 'bottom-up' approach to understand the effects of mining at the local level through a comprehensive household survey using a structured questionnaire. Descriptive statistics, Ordinary Least Square, Two Stage Least Square and panel data model are used to examine the effects of mineral resource dependence on various socioeconomic indicators across the districts in the state. "Effect on Production" approach has been used to analyze the effects of pollution on agriculture and 'Human Capital' approach and probit model have been applied to derive estimates about the effects of mining on human health. The problem of sustainability of local traditional livelihood systems is examined in the light of economic theories of sustainability (e.g. weak and strong sustainability) and sustainable livelihood approach (SLA). The study finds mixed results on the possible prevalence of resource curse problem in the state. For example, mining districts performed better than non-mining districts in terms of district level per capita income, urbanisation, industrial development and infant mortality rate. However, the mining districts have higher incidence of child malnutrition, incidence of robbery and dacoity compared to the non-mining districts. Further, no significant differences in social development index between mining and non-mining districts are found. The quantity of fertilizers used in cultivation influences the average paddy yield positively, whereas location of villages influences the same yield, implying that average yield per acre in the mining villages is significantly lower than that of control villages. Respiratory illness is the most prevalent and costly health problem among individuals residing in the area. Females are more likely to suffer from respiratory illness than males. Further, family housing greater numbers of literate persons have fewer incidence of respiratory disease. Inhabitants of the mining villages show higher exposure to respiratory diseases, than do the inhabitants of the control villages. The study finds both positive and negative outcomes of mines operations on traditional local livelihood systems. The expansion of mines has resulted in creation of direct and indirect jobs leading to increase in financial and physical capital. On the other hand, it has adversely affected natural, human and social capital of the people in the region. It is important to understand the negative impacts of coal mining on local communities and design proactive policies by both the government and mining industries in order to minimize them. The study suggests that in order to effectively internalize the externalities arising from coal mining in Odisha the policy makers need to address market, institutional and policy failures simultaneously.

Keywords: Mineral extraction, Economic development, Agriculture, Health, Livelihoods, Odisha, India