

## Impact of Displacement on Rural Livelihood: A Case Study of Talcher Coalfield

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**Abstract:** Increasing demand for social and industrial development, exploitation of minerals, such as coal, is necessary. Due to the commercial purpose, developing countries turn to an area for mineral extraction. Mining projects have had a severe impact on the socio-economic and environmental setup of rural communities. Besides, cutting down the forest will have a negative impact on the human-forest relationship for many years to come. It caused severe damage to local ecology, rural livelihoods and social order as a whole. The study is looking at how coal mining-induced displacement affects the rural livelihoods of the villages in the Talcher coal belt, Odisha. Additionally, it causes a social imbalance and a new class of vulnerable people in the area. The negative effects of coal mining significantly reduced traditional livelihoods like farming, raising livestock, and gathering minor forest products. The paper concludes that while mining has given people opportunities for income, it has also put rural livelihoods in danger.

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## 1. Introduction

Coal has a significant impact on the world economy. Asia, which is the key commercial hub of coal, is using 67 per cent of overall coal. Numerous nations across the world are dependent on coal as they do not have enough sources of energy to meet their needs. Nations like China, Taipei, Korea, and Japan access significant proportions of steam coal which is intended for power production and coking coal is used for the production of steel. Even the paper mills, alumina refineries, pharmaceutical and chemical entities and so on are the normal buyers of coal. During the assessment of the increasing demand for energy resources, it reflects that coal accounts for around half of the global energy requirement in the middle of 2000 and 2010. Coal remains as the distinctive unit of fuel to satisfy the worldwide requirement for energy (World Coal Association, 2021).

India produces 87 minerals, out of them, 04 kinds of minerals are derived under fuel classification, 10 are under metallic substances, 47 belong to nonmetallic affluence, 03 are nuclear and 23 are minor

minerals. Ironically, India is a key manufacturer in mica mining around the globe, third highest producer of coal, lignite and barytes, fourth in iron metal, sixth in bauxite and manganese mineral, tenth in aluminum and eleventh in unfinished steel in the world (Niti Aayog, 2015) Amongst the nonmetallic mineral deposits, coal stands as significant and rich fossil fuel in India. It represents 55 per cent of the nation's energy requirement. It isn't just useful to produce power yet additionally advantageous to separate iron and extra metals from minerals. Besides, it has huge utility around the world. Since 2000, the utilization of coal exceeded the expectations of different fuels over the globe. This is limited mostly to the five biggest coal utilizing nations, for example, China, USA, India, Russia, and Japan. Also, these nations as a consumer of coal utilize 76 per cent of worldwide coal use (Ministry of Coal, 2014).

Essentially coal is acquired through mining, and coal is mined through surface or opencast considering the geography of the coal reserve. A major portion of coal, around 90 per cent is extracted through underground mining, which is higher than opencast mining. In many important coal-producing nations opencast mining is more in practice. Typically, most coal mines operate in rural regions where developmental activities like mining enterprises give jobs to individuals in the locality. As per the current assessment, coal mining enterprises are engaging 70 lakhs individuals across the globe and 90 per cent are from developing nations. Coal mining gives direct work as well as creates job openings in other related units. Indeed, the introduction of a huge number of coal mines is liable for the significant local incomes and allocated funds towards the improvement of regional infrastructure (World Coal Association, 2019).

On many occasions, coal mining is driving land-use clashes with local occupants. Nearby inhabitants happened to resist the presence of coal mining enterprises. Because they worry about it will disrupt their typical design of livelihood. Generally, mining happens in the natural resourceful areas where individuals are habitually reliant on natural resources to continue their livelihoods. However, business exercises like coal mining enterprises started hampering their conventional way of living. Further, they are compelled to vacate their residence lands. The claim of reclamation and reuse of land, legitimate rehabilitation, and so on remains in the documents. The government assistance serves directly to the upper sections and others stay as worst sufferers without sufficient advantages of these alleged development projects (Das and Mishra, 2015).

On this backdrop the study is divided into four sections. Section one deals with the introduction, objectives and methodology of the study. Section two provides a review on mining and livelihoods. Section three includes results and discussion and section four gives the conclusion of the study.

## **2. Review of Literature**

From the perspective of livelihood in mining, the zone has demonstrated a dramatic revolution since its beginning. With the speedy mineral extraction and misuse, livelihood is falling rapidly. Also, mining carries with it the possible unfavorable effects on livelihood, social life, and nature. On the contrary, the positive part is mining produces foreign revenue. Mining activities aren't just having negative effects; it has some positive effects also. Further, Mining assists to increase monetary and physical capital. However, the adverse aspects, for example, air, water and soil contamination, health deprivation, displacement, loss of farming, and so on are the intolerable harms that can't be forgotten with regard to profit only. Since mining is a short time activity, how we will move towards the advantages of mining and what will be our future? (Mishra, 2009).

World's economic development including India has been contributed by the expansion of the mining industry. However, the development of local infrastructure, employment opportunities (direct and indirect), and earnings from foreign exchange make the mining industries better investors. Essentially, the development of the mining industry requires the acquisition of fertile areas, they have come to be recognized as an environmentally and socially resistant resource (Melanie *et al.*, 2007).

The project affected individuals at the Handidhua resettlement colony, who faced difficulty for sustenance of their occupation. They are involuntarily displaced from their native land and assured to provide electricity, water supply, medical services, etc. However, the assurance remained in assurance only, no change took place. Besides, the villagers claim the recycling of vacant coalfields, (Somayaji, 2008)

Mostly, the influenced communities were often reliant on common property resources for ages; however, mining-induced displacement disrupted and lessened that source of livelihood. But the advantages of mining enterprises directly go to privileged sections of society (Bhengara, 1996). In Ghana the 'culture' of extraction is predominant. The Ghana people are accustomed to movement from precious stone mining to gold mining to get rich. The money-related advantage of gold mining is genuinely higher than that of precious stone mining (Hilson, 2010).

Even though farming is reflected as the fundamental basis of occupation, besides farming the rural peoples were mainly connected to the gathering of Minor Forest Products (MFP) for the survival of their livelihood. The Kondh tribe of the Koraput, Balangir and Kalahandi belt of Odisha, use to cultivate and harvest various kinds of millet, gram, beats, eatable oil, pigeon pea, castor oil, honey, mushrooms and so on. And they have a strong financial relationship with the forest that involves them collecting various MFPs. The Kondhs were collecting MFPs for their use and sometimes they earned extra by selling. Yet, the presence of mining in the region is going to shrink the prevalent practice as well as the forest of these dwellers (Palit, 2010). Mining has horrible adverse effects on the ecology of soil, water and air. The contamination of both physical and natural resources is constantly declining the productivity of agricultural land which affects agriculture (Guha, 2014). The company should introduce and work on domains such as gender equality, women empowerment and dignity, care and support for the elderly, and livelihood enhancement programmes (Dewan and Singh, 2021). CSR initiatives have also been found to have a positive relationship with CSR performance outcomes (Anand and Kumar, 2021).

The presence of gold mine activities in the Geita District of Tanzania has delivered serious socio-natural impacts. In the close region of mining, the first major occupation is agriculture and the second is mining. Gold mining here is obtaining an unsafe socio-social effect on the livelihood as it is leaving the agriculture as well as livestock of the nearby individuals (Kitula, 2006).

Very often, the LPG model is leaving the indigenous communities vulnerable in the world. The land is the source of livelihood and way of survival for many rural communities. They are spiritually and culturally connected to traditional land. Due to the acquisition of land, for development of enterprises like mining has left the local community as quick sufferers. Further, it leads to impoverishment from the loss. The only way is to replace adequate compensation with ways to regenerate their resources. The states like Odisha, Jharkhand and Chhattisgarh of our country pleased the mineral-based businesses into its additions. However, the advantages of these enterprises are going reasonably to the upper class of society and the oppressed areas are dispensing the expense of its disturbance only (Meher, 2009).

The neoliberal economic and political changes in Peru are influential to put the nation in the worldwide market through foreign direct investment (FDI). As a result, mineral withdrawal exercises began in the tag of a few financial packages. Since the time of its operation, the multifold production of the household has been overstated. Earlier families used to draw their livelihood from the common property resources and associated with varied farming, livestock and market exercises. However, the unrest unfolded when Newmont Mining Corporation's Yanacocha (MUSA) began its activity. Although it has been known that a few societies recognized their access to monetary and human capital yet, all the families lose their access to common and social resources (Meher, 2009).

### **3. Objective of the Study**

Based on the above literatures, it is understood that though different study exists in the area. But very few studies available in Talcher region. Accordingly the following objective is framed;

- To analyze the effect of coal mining induced displacement on rural livelihood.

### **4. Research Methodology and Data Analysis**

The study was conducted using household data collected through interview schedule. In order to fulfill the objective of the study data were collected from primary and secondary sources. In addition to the quantitative techniques tools like case study, interview schedule and few techniques of Participatory Rural Appraisal (PRA) i.e. focus group discussion was used to collect the household data. By using random sampling four villages were selected for the study purpose; two mining villages are located near the mine and two control villages are located in the same agricultural-climatic area but far from the coal mining. The study area includes the Lingaraj coal area of Talcher coalfield, Odisha, which is coming within the purview of Mahanadi Coalfields Limited (MCL), a subordinate of Coal India Limited (CIL). Talcher coalfield is in the Angul district. The Talcher coal area is spread over an area of 150,966 sq. km. Of the total 08 opencast and 03 underground coal mines in Talchercoalfield, there are a total of 11 coal mines in Talcher coalfield, namely Jagannath area, Bharatpur area, Lingaraj area, Hingula area and Talcher area. A total of 12719,134 hectares of land has been acquired for coal mining in the Talcher coal area through the Coal bearing Act (Niti Ayog, 2015).

MCL archives reflect that it has eight opencast coal mining projects namely Ananta Opencast Coal Mining Project(OCMP), Bhubaneswari OCMP Jagannath OCMP, Hingula OCMP, Balaram OCMP, Bharatpur OCMP, Kaniha OCMP and Lingaraj OCMP. Apart from that, the opencast mines are more damaging than the underground quarries, this is why the mining-affected communities near-surface quarries were chosen for the current study. Considering the distance from mines, two villages are selected that are affected by mining activity around Lingaraj OCMP. As the opencast mines are functional over the last 20 years, information was gathered from households on pre and post-mining conditions by using the recall method. Further, to comprehend the effect of coal mining the study was undertaken by selecting two villages as the control in the same agro-climatic zone, where there is no mining impact and individuals are performing traditional livelihoods for decades. The socio-economic condition, conventional sources of occupation and cropping patterns are identical to both mining villages and control villages. The major difference is the availability of service opportunities and environmental

pollution. The data collected from the households of mining villages can be juxtaposed with the data of the control village concerning the effect of mining on the rural livelihoods of local societies. For this study purpose, 300 sample households were selected from the mining villages and control villages through systematic random sampling. The detailed demographic and key features of the sample villages are placed in Table 1 and Table 2.

**Table 1: Demographic Details of Sample Village**

<i>Basic information</i>	<i>Mining villages</i>		<i>Control villages</i>		<i>Total</i>
	<i>Balugaon Khamar</i>	<i>Langjoda</i>	<i>Deragoda</i>	<i>Saradbapur</i>	
Total Household	140	90	90	130	450
Total Population	880	654	400	503	2437
Sample Household	75	75	75	75	300
SC Household	21	3	6	25	55
ST Household	1		4	1	6
OBC Household	40	45	49	21	155
General Household	13	27	16	28	84

*Source:* Authors' Own Compilation

**Table 2: Key Features of Sample Villages**

	<i>Mining villages</i>		<i>Control villages</i>	
	<i>Balugaonkhamar</i>	<i>Langjoda</i>	<i>Deragoda</i>	<i>Saradbapur</i>
Distance from the nearby mines (in KM)	3-6	0-3	30	30
Total population	880	654	400	500
Social composition	Mixed	Mixed	Mixed	Mixed
Livelihoods	Mine's employee and day labourer	Mine's employee and day labourer	Agriculture and day labourer	Agriculture and day labourer
Electricity	Available	Available	Available	Available
Source of Drinking water	Tube well	Village bore well	Tube well	Tube well

*Source:* Authors' Own Compilation

For the research, both primary and secondary sources were used to collect the data. Both qualitative and quantitative methods are used in the present study. For the collection of primary data collection key informant interviews, case studies, observation and some PRA tools like focus group discussions and resource maps were used. However, for the collection of quantitative data household study was conducted using schedules. The secondary data was gathered from official sources i.e. policy documents, journals, published reports and available literature.

## **5. Results and Discussion**

### ***5.1. Effect of Mining on Livelihood Activities of Household***

A detailed study regarding the effect of coal mining on rural livelihood is conducted. The paper has attempted to disclose the process of transformation has community gone through. Both the villages Langijoda and Balugaon Khamar were there before mining started in the region. Before beginning mining, the villagers were engaged in agriculture and allied activities, which is the primary source of livelihood. Over the years the community went through transformation and the focus shifted from agriculture to non-agriculture activities for sustenance. The poor households used to practice several farm activities at their household levels such as crop agriculture and animal husbandry. But the fact remains that on many occasions the poor and small farmers are not able to generate a secure livelihood.

### ***5.2. Sample Household's Socio-economic and Livelihood Activities***

Table 3 represents the economic and livelihood activities of sample households. Most of the Talcher area is filled with coal, which is attracting mining enterprises and mining activities are considered positive circulation towards income generation to carry out the operation. Agriculture and allied activities are predominantly considered the primary source to sustain a livelihood for ages. But after the existence of mining companies and their regular expansion, has already taken away productive agricultural lands. The local individuals are shifted from predominantly agro base livelihood to non-farm and mining base to sustain their livelihoods. Agriculture started losing its prominence after the mining period. Mining is a profitable activity, but it doesn't have security. Being marginalized and vulnerable, the rural people practice a variety of livelihoods. The present research tries to provide a picture of a comparison between the pre-mining and post-mining eras.

Table 3 shows around 60 per cent of sample households were practicing and relying on agriculture as a source of livelihood in mining villages during the pre-mining period, which has been significantly reduced by 6 per cent in post-mining time. This is due to the loss of crop productivity. But in the control villages, a major chunk of the sample households is still depending on agriculture. Currently, mining turns out to be the single largest livelihood activity in the villages near mines. A total of 85 households have received jobs against compensation, resulting in high MCL job holders in the post-mining period at mining villages. Besides permanent jobs in mines, many locals are engaged as contractual labourers in MCL.

The table unfolds that 52.6 per cent of sample households in mining villages were practicing farm wage labour in the pre-mining era. But in the post-mining period, it has been reduced to 28 per cent and shifted to non-farm wage labour. As most of the cultivable land has been acquired by MCL and many of the lands are filled with coal dust, left the locals uncertain. However, in private employment, the percentage of households is increased in the post-mining period compared to pre-mining. The reason is that mining companies often invite agencies, and farms through tender for undertaking different jobs; as a result, local people get the opportunity for private employment. This has also directly encouraged the lodging and hotel industries in the Talcher area, as a result, many hotels, restaurants, and lodging have opened in Talcher town. Further, engagement of traditional occupation

stands at 6 per cent in the pre-mining period, which has been surprisingly not practiced by any household in either post-mining or control villages.

**Table 3: Livelihood Activities of Sample Households (Figures in Bracket %)**

<i>Livelihood Activities</i>	<i>Mining village</i>		<i>Control village</i>
	<i>Pre- mining</i>	<i>Post- mining</i>	
Agriculture	89 (59.3)	9 (6)	107 (71.3)
Wage labour	79 (52.6)	42 (28)	122 (81.3)
Govt. employment	15 (10)	13 (8.6)	5 (3.3)
Private Employment	14 (9.3)	22 (14.6)	8 (5.3)
MCL employment	20 (13.3)	97 (64.6)	
Business	13 (8.6)	12 (8)	6 (4)
Traditional occupation	9 (6)	-	-

*Source:* Authors' Own Compilation

### **5.3. Occupation of the Head of Households**

It has been reported that the only permanent source of employment for sample households in mining communities is mining-related activities. People of all ages and genders are either directly or indirectly involved in mining. But in control it is different. Currently, the villagers rely on agriculture and related activities. A detailed narration of the categories of occupation is as follows;

**Table 4: Main Occupation of the Head of the Household (Figures in Bracket %)**

<i>Occupation</i>	<i>Mining village</i>	<i>Control village</i>
Cultivation	1 (.7)	71 (47.3)
Dairy	1 (.7)	—
Goat and another animal rearing	1 (.7)	4 (2.7)
Daily wages-agricultural laborer	2 (1.3)	35 (23.3)
Skilled wage labourer	14 (9.3)	1 (.7)
Semi/unskilled wage labourer	43 (28.6)	25 (16.7)
Service-private sector	6 (4)	5 (3.3)
Service-govt. sector (mining)	78 (52)	3 (2)
Trade/business-from fixed premises	1 (.7)	1 (.7)
Other-self employed	3 (2)	5 (3.3)
Total	150(100)	150(100)

*Source:* Authors' Own Compilation

According to the above table, mining is the primary source of employment in mining villages, with the majority (52 per cent) of households employed in this sector. But in control villages, 47.3 per cent of the households are practicing agriculture. But in the case of daily wage agriculture labour, it is also high in control villages in compared to mining villages. However, in the semi/unskilled category wage labourers are higher in mining villages.

#### **5.4. Annual Income of Sample Households**

With the purpose of measuring the effects of mining on household income, an evaluation was prepared to find the difference between the pre-mining and post-mining income levels of sample households in mining villages. Further, it has compared with the income level of the control village. Though mining took place with huge scale displacement it endorses changes in the mining villages from a financial point. It was reported that the income level of mining villages is healthy, as many locals are employed at MCL mines directly and indirectly and receive a pretty income. The comparison of pre-mining and post-mining income levels of mining villages show that before mining most of the households 82 per cent were reengaged in agriculture and wage labour activities, so their income was below 30000 rupees. Another group of people who are dependent on business are coming under the 30000-50000 rupees income group, 2<sup>nd</sup> in the rank. And there are only 15.3 per cent of people whose income is above 50000 rupees. However, in the pre-mining period, no income group is available 1 lakh- 1.5 lakh rupees, which shows an extreme change in the post-mining period, the majority of 65 per cent of households are coming under this category. It is also surprising to see 10 per cent of households coming under the category of above 2 lakhs rupees, as both the categories are represented by MCL employees. It is established that families reliant on mining jobs have higher annual incomes than other sources. This is because the wage in coal mining is higher than in other sectors, which has improved the income discrepancy between mining and control villages. A caste-wise detailed annual income status is placed below both in the pre-mining period and post-mining period along with the control village.

**Table 5: Social Category Wise Annual Family Income in the Pre-mining Period  
(Figures in Bracket %)**

<i>Caste of the Households</i>	<i>Total Annual Family Income in the Pre-mining period</i>				
	<i>Below 20000</i>	<i>20000-30000</i>	<i>30000- 50000</i>	<i>Above 50000</i>	<i>Total</i>
General	18 (12)	5 (3.3)	10 (6.6)	7 (4.6)	40 (26.6)
OBC	44 (29.3)	21 (14)	9 (6)	11 (7.3)	85 (56.6)
SC	7 (4.6)	10 (6.6)	3 (2)	4 (2.6)	24 (16)
ST	0	0	0	1(.6)	1(.6)
Total	69 (46)	36 (24)	22 (14.6)	23 (15.3)	150 (100)

*Source:* Authors' Own Compilation



**Table 6: Annual Family Income in Post-mining Period (Figures in Bracket %)**

<i>Caste of the Households</i>	<i>Total Annual Family Income in the Post-mining period</i>				
	<i>Below 50000</i>	<i>50000-1 lakh</i>	<i>1 lakh-1.5lakh</i>	<i>Above 2 lakh</i>	<i>Total</i>
General	5 (3.3)	0	29 (19.3)	6 (4)	40 (26.6)
OBC	18 (12)	3 (2)	58 (38.6)	6 (4)	85 (56.6)
SC	6 (4)	5 (3.3)	10 (6.6)	3 (2)	24 (16)
ST	0	0	1 (.6)	0	1 (.6)
Total	29 (19.3)	8 (5.3)	95 (65.3)	15 (10)	150 (100)

*Source:* Authors' Own Compilation

According to the tables above, mining has a positive impact on the annual income of families in mining-affected villages. Prior to mining, the majority of households reported being low-income. However, the family's annual income changes dramatically after mining. In the pre-mining period, the majority of 46 per cent were earning 20000 – 30000 categories. But in the post-mining period, the majority of 65.3 per cent of families earned 1 lakhs – 1.5 lakhs category. Further, it is clear from the table that both General and OBC are more dominant caste in mining villages and earn more than SC and ST households. Particularly, OBC households are the dominant caste, and they are earning more than other households in the mining villages. But across caste and communities, all are monetarily benefitted because of coal mining operations in the region. The scenario shows 82 per cent of households earn below 30000 but in the post-mining era the figure has significantly come down and now to 19 per cent.

A huge contrast is found between households' annual income in mining villages and control villages. This is because the majority of the households from the mining villages are employed in mining and has a higher income than other non-mining sources of income. Whereas in control villages families practice agriculture and farm wage labour. The control village also has a similar representation to mining-affected villages i.e., both General and OBC caste are dominating on others. The caste wise annual income status is given below.

**Table 7: Annual Family Income in the Control Villages (Figures in Bracket %)**

<i>Caste of the Households</i>	<i>Total Annual Family Income in the Control Villages</i>				
	<i>Below 25000</i>	<i>25000-50000</i>	<i>50000- 1 Lakh</i>	<i>Above 1 Lakh</i>	<i>Total</i>
General	6 (4)	21 (14)	12 (8)	5 (3.3)	44 (29.3)
OBC	2 (1.3)	33 (22)	28 (18.7)	7 (4.7)	70 (46.7)
SC	1 (.7)	19 (12.7)	9 (6)	2 (1.3)	31 (20.7)
ST	0	5 (3.3)	0	0	5 (3.3)
Total	9 (6)	78 (52)	49 (32.7)	14 (9.3)	150 (100)

*Source:* Authors' Own Compilation

Thus, the introduction of mining has extended financial growth to many households of the locality and the nation by providing work both directly and indirectly in mines. Thus, it has resulted in increased purchase ability among the households. Also, mining created infrastructural development in the region.

### **5.5. Possession of Physical Assets**

Physical assets involve the essential physical services and product units expected to construct sustainable livelihood. The significant part of physical services, which are typically necessary for sustainable livelihood are reasonable conveyance, secure shelter and buildings, adequate water supply and hygiene, clean cheap energy, and access to information. Table 8 presents the effect of mining on physical capital assets. Here, mining affects physical resources in a mixed way. As the past segment appears, mining has a constructive effect on the annual income of the individuals. Thus, the family unit's ability to keep durable assets in the home is likewise more.

Possession of assets such as motorcycles, tractors, television, cycle, bullock cart, pump set, TV, etc. is higher in mining villages than in control villages. There are fewer households having livestock in pre-mining villages than in post-mining villages. Besides, it found that possession of livestock is less in post-mining villages compared to control villages. In the post-mining period, no grazing land was available for livestock rearing, as mining has claimed all lands. Hence, only 46 per cent of households owned livestock in mining villages compared to 58 per cent in control villages. As agriculture is not practised as a primary occupation in mining villages, the possession of the assets i.e. ploughs, and livestock are very low. Likewise, a few households (11.33 per cent) in the mining village own pump sets, as they engage in agriculture, while in the control villages, the percentage is less than one as they have less annual income.

The percentage of households possessing tractors as an asset is more in mining villages, as they engage in commercial purposes i.e., in mines and carrying of construction materials. Most households own TV, which is more in mining villages than in control villages. Also, it is evident that most households in mining villages own motorcycles, as they have a better financial condition than control villages.

**Table 8: Possession of Assets by Households**

<i>Assets</i>	<i>Before Mining</i>	<i>After Mining</i>	<i>Control village</i>
Cycle	124 (82.6)	136 (90.6)	117 (78)
Motor cycle	31 (20.6)	95 (63.3)	9 (6)
Tractor	5 (3.3)	11 (7.3)	0
Pump set	17 (11.33)	6 (4)	1(.6)
Plough	59 (39.3)	20(13.3)	79 (52.6)
Bullock cart	57 (38)	11 (7.3)	43 (28.6)
TV	38 (25.3)	115 (76.6)	24 (16)
Livestock	95 (63.3)	69 (46)	87 (58)

*Source:* Authors' Own Compilation

### 5.6. Landholding Size

Land is another vital physical asset and source of livelihood for many households. Table 10 presents that the percentage of sample households' land ownership in mining villages is lower in the post-mining period than in the pre-mining period, as land is acquired for the expansion of mines by MCL. Since a majority of households in control villages rely on agriculture, the percentage of household's land holding is more than mining villages. Most all the landholding households got landless because of mining. Around 94 per cent of households became landless (Table 10).

**Table 10: Landholding Size of Sample Households (Figures in Bracket %)**

Landholding size	Mining village		Control village
	Pre	Post	
Landless	42 (28)	141 (94)	28 (18.6)
Less than 1 acre	24 (16)	4 (2.6)	52 (36.6)
1-2.5 acre	50 (33.3)	5 (3.3)	61 (40.6)
2.5-5acre	20 (13.3)	—	8 (5.3)
5-10acre	10 (6.6)	—	1 (.6)

Source: Authors' Own Compilation

### 6. Conclusion and Policy Implication

In view of above, it is understood that rural livelihood at Talcher coalfield is going through a change. Mining led displacement has directly benefitted people from monetary perspective. In the pre mining period people have diversified sources of livelihood. But in the post mining phase, it has witnessed considerable modification. But it has impacted the rural livelihood pattern. It likewise finds that mining has increased the financial and off-farm assets of families. Yet, it has severely affected natural, human and social capital. With the start of coal mining, the economy and way of life have risen however individuals endure socially and ecologically. The constructive outcome of mining has changed numerous rich, however, the absence of access to natural assets is making few vulnerable. Mining led displaced has acquired all the agricultural patches. So earlier a producer now becomes a consumer and depends on the market. Because of exhaustion in forest assets, the job of the women is declined as they can't gather MFP and add to their family income. It is observed that in the wake of mining, significant increase in service opportunities for mining. Numerous local people who were denied employment as remuneration were functioning as wage labourers in mines, as the pay is higher than others. The families having land possession are eligible for compensation and rehabilitation; hence the landless families got no advantage and are left denied. The advantages of mining are short term. After mining they won't have their employments and cultivation will not be possible, as lands will not be in a condition for cultivation. The present research clearly reflected that mining has positive impact on the monetary aspect of the project affected communities. Simultaneously it has narrow down the conventional sources of rural livelihood in Talcher coalfield region.

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