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### **Uranium mining-induced displacement and resettlement of tribal community of Jharkhand: A case study of Turamdih mining area**

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#### **ABSTRACT**

The study was conducted among displaced tribal communities resettled in the areas surrounding the Turamdih Uranium mine and mill in the Indian state of Jharkhand. The objective of the study was to explore the quantum of displacement, land acquisition, distribution of compensation, resettlement, social security, and current livelihood status of the displaced tribal communities following the establishment of uranium mine and mill at Turamdih by the government-owned Uranium Corporation of India Limited (UCIL) in the district of East Singhbhum, Jharkhand. The in-depth interview was conducted with 30 victim respondents and a cross-sectional household survey was conducted among 411 uprooted families using simple random sampling. The findings depict that above 96 percent of the total surveyed households have lost at least one either usual house of residence, agricultural or non-agricultural land due to involuntary displacement. One member from 38 percent (158) of the total surveyed families get a menial job in UCIL, Turamdih; half of them were doing dangerous underground mining and digging to extract uranium ore. About 52 percent of the total displaced families were received scanty compensation amount in cash or cheque for their agricultural or forested land and houses. Overall, displacement and resettlement transform their economy and occupational structure; from traditional hunting and food gathering to manual wage labourer. However, livelihood and standard of living didn't change significantly.

**KEYWORDS:** displacement, resettlement, tribes, livelihood, social security

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## **INTRODUCTION**

As elsewhere in the world, the main uranium deposits are located on lands belonging to indigenous or tribal peoples.<sup>1</sup> In view of alternate sources of efficient energy generation, Uranium has gained enormous global importance driven by its medical, military, and civil applications, albeit with potential safety and environmental legacies.<sup>2</sup> In fact, economic development, progress, and prosperity of any country necessarily involve the creation of basic infrastructures like railways, roads, shipping, civil aviation, power station, irrigation facilities, means of communication, and the establishment of industries.<sup>3</sup> Such development projects are incessantly required as they improve standard of living of the people, generate employment and supply them better services. However, such projects have many negative consequences in the form of forced displacement, involuntary resettlement, and risk of livelihood to the affected people.

Jharkhand has a long painful history of forced displacement and the victims are mostly indigenous people, experience loss of land, livelihoods, and habitat even before the independence of the country. With the initiation of Five- Year Plan, the process of both development and displacement intensified from 1951; the rehabilitation policy remained to undermine. Its first draft was prepared in 1985 by a committee appointed by the department of tribal welfare when it found that over 40 percent of the Displaced Persons (DPs) and development project induced people were tribals.<sup>4,5</sup> However, the tribal people have been subjected to a large-scale land acquisition and exploitation initiated since 1947 by the non-tribals, moneylenders, and traders, intensive industrial/mining activities in tribal areas. Furthermore, inefficient and callousness of the state-owned agencies as well as also the high degree of land alienation and indebtedness have impoverished the tribal economy and traditional livelihood.<sup>6</sup> Displacement of people due to big mining project is inevitable. Therefore, it becomes the duty of the government and the project authorities to ensure that misery and suffering caused to the displaced population must keep at the minimum level.

In India, Uranium Corporation of India (UCIL), founded in 1967 under the Department of Atomic Energy, is responsible for the mining and milling of uranium ore. Jaduguda in the East Singhbhum district of Jharkhand is the first uranium mine and mill (processing plant) of India, which started its operations in 1967. Jharkhand accounted for 30% (50,978 metric tonnes) of the total Uranium ( $U_3O_8$ ) reserves (171672 metric tonnes) in India as on 30 June 2011.<sup>7</sup>

Keeping in view the nation's endeavour to expand nuclear energy infrastructure (20,000 MWe by 2020 from the present capacity of 2770 MWe), new uranium mines were being opened by UCIL in several parts of the country including in the Singhbhum Thrust Belt of Jharkhand.<sup>8</sup> In this context, a new uranium mine and mill was commissioned in 2003 at Turamdih, 24kms west of Jaduguda and 5kms south of the Tatanagar railway station. The Turamdih Processing Plant has

been set up to treat the ore from the Turamdih, Banduharang, and Mohuldih mines.<sup>9</sup> However, the setting up of uranium mine and mill at Turamdih cost involuntary displacement of thousands of native tribal families.

Following displacement, the study deals with many issues about- those concerning the loss of habitat and agricultural /non-agricultural land, compensation, provision of employment and social security, cultural identity, and reconstruction of the livelihoods for those families who have displaced by the UCIL, Turamdih. In this context, the present study also reviews the tribal land right, various acts, and rules of law related to land alienation, resettlement, their provision, and implementation on the ground focusing mainly on the state of Jharkhand.

## **METHODS AND MATERIALS**

The survey was conducted between January and June 2016 at UCIL, Turamdih Mine and Mill area, located north-west of the Jaduguda mine in Jamshedpur city of Jharkhand, India. (Figure. 1) The UCIL, Turamdih had been taken as a central point and surrounding villages resettled by the displaced tribal families were selected for the study. Further, based on the proportion of Schedule Tribe (ST) population in the designated villages, 11 villages (having more than 90 percent ST population) had been selected for conducting the survey. Both qualitative and quantitative data were collected for the study. Since, respondents of the study are displaced persons, household survey, In-depth Interview, and Key Informant Interview has conducted in the selected villages.

Since the proposed study focuses on displaced families, therefore only those households had selected for the survey, which have resettled after displacement in the sampled villages. Simple random sampling with Probability Proportion to size Sampling (PPS) method applied to select the households and respondents in the selected village to carry out the study.

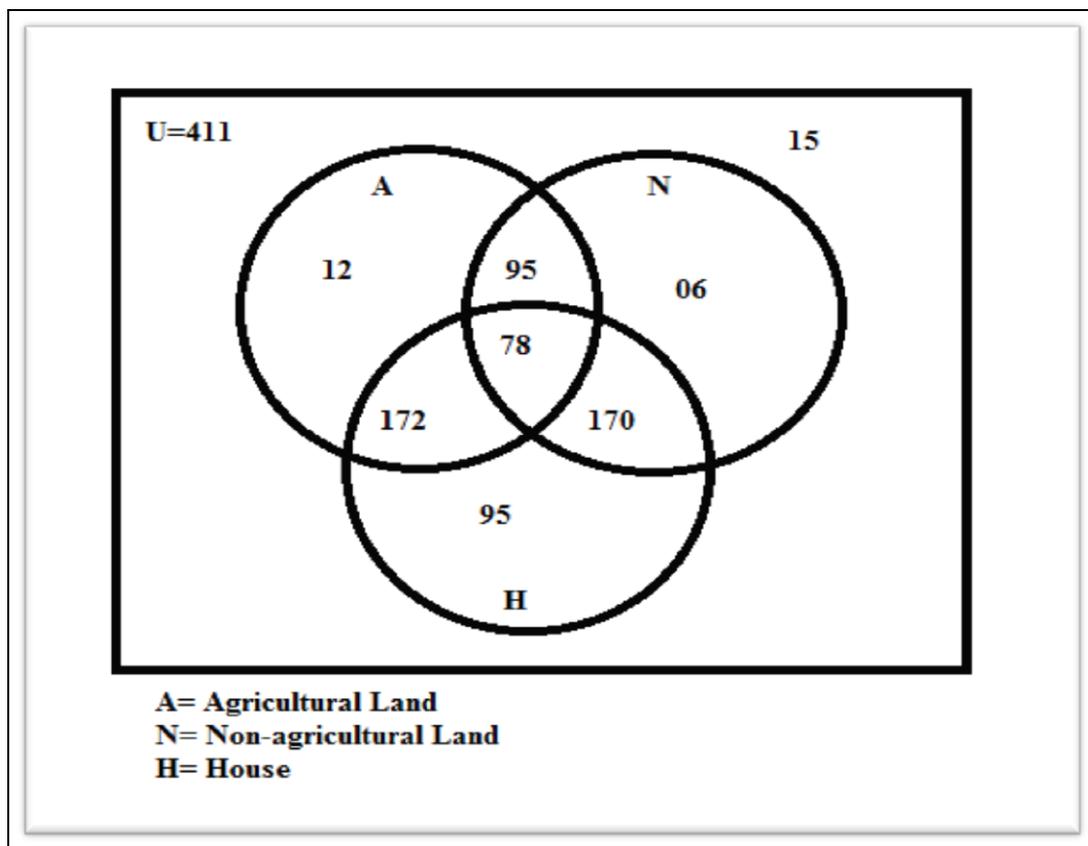
To assess the quantum of loss due to displacement, provision of resettlement, and current livelihood status of the displaced tribal families of the Turamdih uranium mining area, several questions were asked during the survey. Some of the important queries were following- “When did you and your family displace? Size of the home, land (agricultural/non-agricultural) and livestock lost due to forced displacement. Did you had legal document or registered land for the lost house and land? Did you and your family awarded with home/shelter anywhere by the Govt. or UCIL authority? Did you or any one of your family member get job/employment in UCIL, Turamdih? What type of employment they got? Did you or any one of your family member receive compensation amount? How much amount they received and how they utilized the compensation amount?” Further, several queries related to social security, vocational training, skill development, and cultural and community participation were asked during the survey. Collected data has been analysed using SPSS 20 software.

## RESULTS AND DISCUSSION

### *Displacement and Loss of land and habitat*

A sample of 411 affected households (HHs) had been surveyed surrounding UCIL, Turamdih Mine and Mill to study the quantum of loss due to displacement. The respondents asked for the loss of usual house of residence, agricultural and non-agricultural land due to forced displacement by the UCIL authorities. The displaced families mostly dominated by the Ho tribal community followed by the Santhal. Like any other tribe of India, communities of the Ho and Santhal schedule tribes too live in proximity with nature and mostly in and around forests.

**Figure 1. 1 Venn-Diagram showing number of families/households loss usual house of residence, agricultural and non-agricultural land due to displacement.**



**Table 1. 1 Summary of loss due to forced displacement.**

<b>Loss due to Displacement</b>	<b>Number</b>	<b>N %</b>
HHs lost their houses	361	87.8
HHs lost Agricultural land	201	48.9
HHs lost Non-Agricultural land	193	47.0
HHs lost house and Agricultural land	172	41.8
HHs lost house and Non- Agricultural land	170	41.4
HHs lost Agricultural-land and Non- Agricultural land	95	23.1
HHs lost all the three	78	19.0
HHs lost at least one	396	96.4
HHs lost nothing	15	3.60
HHs lost only House	97	23.6
HHs lost only Agricultural land	12	2.9
HHs lost only Non-Agricultural land	6	1.5
<b>Total Sample HHs</b>	<b>411</b>	<b>100</b>

Tribal life and culture is so interwoven and integrated with land and forests that once uprooted from these habitats they are severely disturbed. They face a total social, economic, and cultural disruption and crisis of identity. In the context of displaced communities surrounding UCIL, Turamdih, their loss of land and habitat have presented using Venn-Diagram method in Figure 1.1 and summarized in Table 1.1. The findings depict that above 96 percent of the total (411) surveyed households have lost at least one either usual house of residence, agricultural or non-agricultural land due to involuntary displacement to establish new uranium mine and mill at Turamdih. Almost 42 percent of tribal families had to leave their house as well as agricultural land in this forced displacement.

For tribal area and people, in particular, both the Centre and State had enacted several acts, rules, and laws related to land alienation, rehabilitation, and resettlement to protect their rights, social structure, tribal identity, livelihoods, and cultural hegemony. All the Land Acquisition Acts (LAA) seeks to achieve acquisition and not confiscation. Unfortunately, this has not happened on the real ground. Jharkhand, in particular, the 1908 Chotanagpur Tenancy Act (CNTA) meant to protect tribal land by restricting the sale of Adivasi land to non-Adivasis in 16 of Jharkhand's 24 districts. The Santal Pargana Tenancy Act (SPTA) 1949, the Coal Bearing Areas Act (Acquisition and Development) Act, 1957 (CBAA) and Atomic Energy Act, 1962 (AEA) - for mining of atomic minerals have the provision of non-transferability of indigenous lands that is also enshrined as a legal instrument.<sup>10,11</sup> Another one of the most important legislation e.g. the Panchayat (Extension to Scheduled Areas) Act, 1996 (PESA) enunciated, which protects the rights of the tribal people over their land and the natural resources, allowing the Gram Sabha to be consulted before the acquisition of land in Scheduled Areas for developmental projects.<sup>12</sup>

Even though having several such LAA, the poor tribal communities of Turamdih mining region (Ho and Santhal) not only lost their rights of forest, house and agricultural land but the source of daily livelihood too by implementing new sets of intermediaries and MoUs between Government

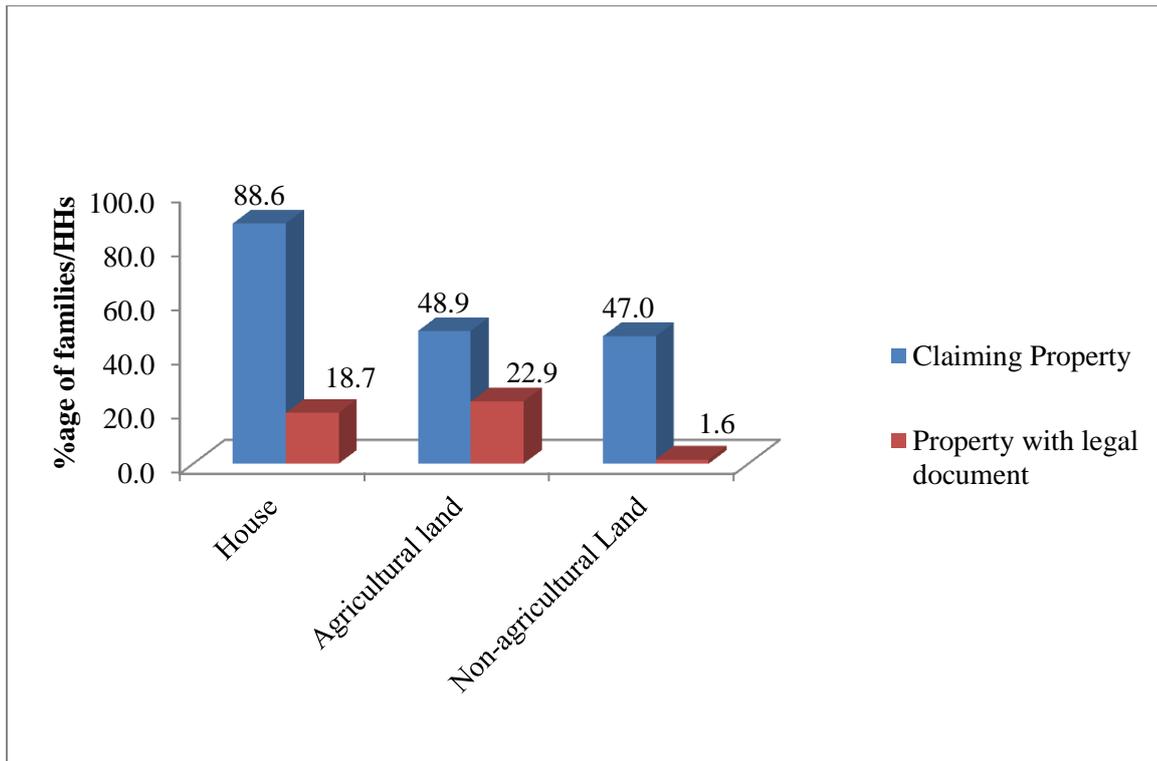
and big business houses. The villagers of Turamdih, Nandup, Talsa, and surrounding areas were against the establishment of uranium mine and mill. Lakhan Diggi of Nandup village one of the victims of UCIL, Turamdih Mill stated that-

***We have no choice but to hold protests. It has been 16 years since the plant was set up, but the majority of the residents have not received compensation, alternate land or jobs. We have lost our agricultural land the only source of feeding our family and face severe hunger. We have been denied jobs even after completing our course at the industrial training centre.” The UCIL authority refused those jobs, saying there are no vacancies.***

During the survey, the respondents had been asked about the size of their houses, agricultural and non-agricultural land as well as legal documents (registry) claiming for their property and compensation. Almost 90 percent of the total respondents claim their houses at Turamdih region, but only 19 percent of them had the land right recorded in the patta (a field register) i.e., legal document or registry of their houses. (Figure 1.2)

Similarly, 47 and 49 percent of the total respondents claimed for having agricultural and non-agricultural land respectively, but only 23 percent and less than two percent had legal documents for their land and property. (Figure 1.2)

Figure 1. 2 Distribution of families/HHs claiming their properties at Turamdih region and had their legal documents/registry.



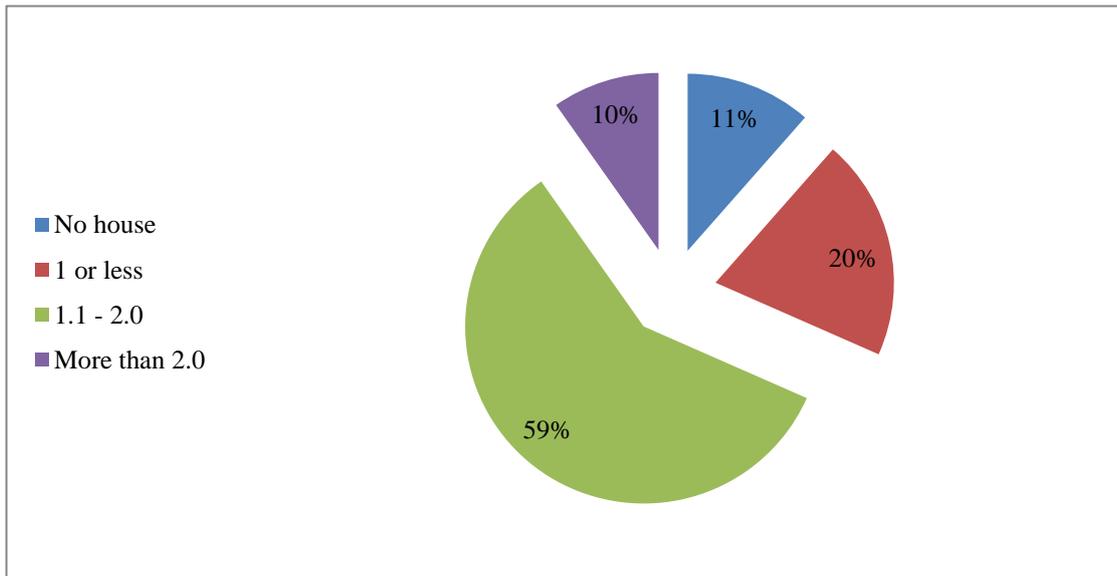
In fact, this UCIL, Turamdih uranium mine and mill region is a part of Chotanagpur Plateau (geographically) also known as Santhal Pargana region and the people of this land called as Adivasi or Moolvasi meaning the oldest or original inhabitant. They have been living there even before the independence of the country. Mostly, these tribal people are illiterate or lower educated, do not know the legal implication but only live from hand to mouth. On asking for registry/legal document, one of the respondents Mangal Ho (45) stated that-

***“I was living there with my brothers and sisters, parents, and grandparents up to age 17. Our ancestors were also born, live, and die there. We did not know about any legal paper, document or registry. We know only that the company had forcibly alienated our ancestral land and house.***

Further, during the survey, we have asked about the size of their homestead, agricultural land and non-agricultural land to assess their actual loss due to displacement. The size of land used for habitation was recorded in Kattha (1 Kattha= 720 Square Feet) and the size of agricultural and non-agricultural land was recorded in Bigha (1 Bigha = 20 Kattha = 14400 Square Feet). The study found that almost 80 percent of the houses made in the land size of 2 or less than 2 Kattha; (Figure 1.3) whereas, 11 percent of respondents did not have a home at the site. More than half of the respondents’ families did not hold agricultural land, and about 18 percent of them own less than one bigha and 7 percent had more than 3 *bighas* of cultivable land. (Figure 1.4) They used to grow paddy

in their land. Before displacement, about 24 percent of all respondents claimed that they had between 1 and 3 *bighas* of land under non-agricultural activities; (Figure 1.5) used in grazing of their livestock, collection minor forest product like Tendu leaves, Mahua, firewood, fruits, and flowers etc. Cultivation of paddy, hunting, and gathering of minor forest products are the major source of livelihood for tribal people not only for Chotanagpur Plateau /Santhal Pargana region but for all tribal population of North-Central states of India.

Figure 1. 3 Distribution of families had house by size (in Kattha)



The tribal people are intensely attached to the original dwelling where they supplement their household income by collecting firewood, minor forest produces, and by fishing, and hunting etc. Thus, besides causing serious economic deprivation, displacement also affects the very structure of the tribal society. As a group, they have life pattern within a social group that upon displacement they are scattered and disintegrated depriving them of their source of joy<sup>10</sup> and cultural identity.

Figure 1. 4 Distribution of Agricultural land holding by size (in Bigha)

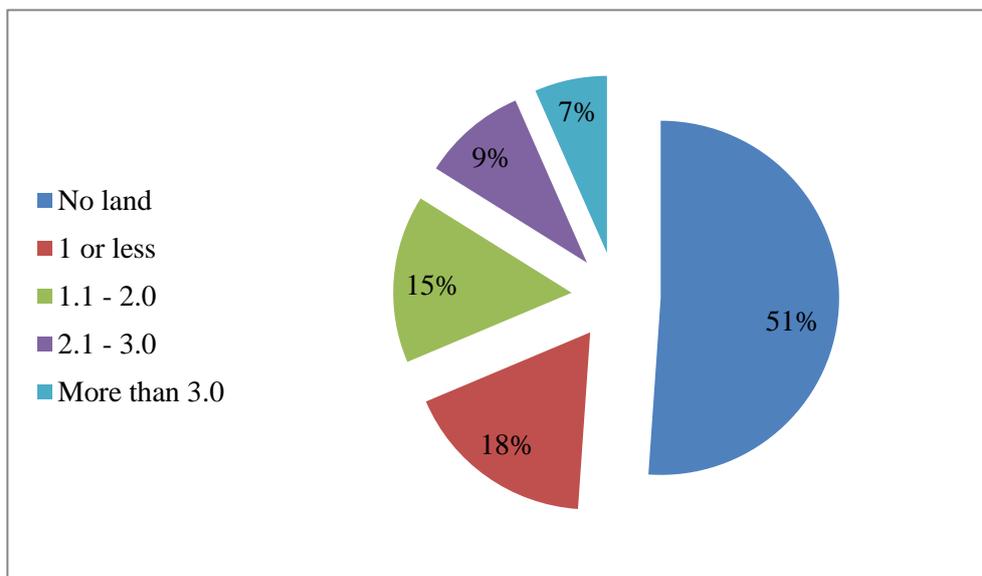
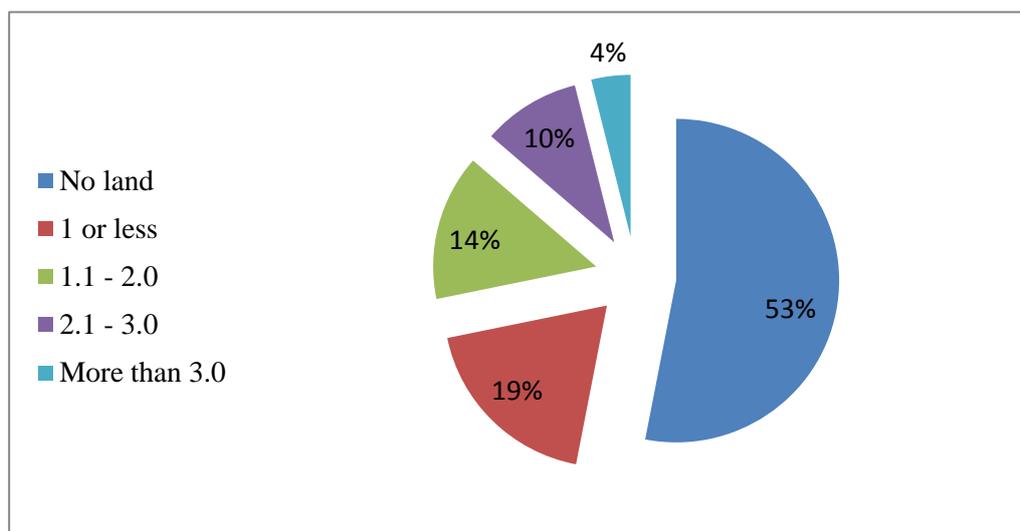


Figure 1. 5 Distribution of Non-agricultural land holding by size (in Bigha)



### Rehabilitation and Resettlement (R&R), and Compensation:

#### *House, land for agriculture and employment for the displaced tribal families*

In general, project authorities, NGOs, and funding agencies speak R & R in one breath, but they are two distinct realities. While resettlement is primarily an economic initiative, deals merely with physical implantation of displaced persons into a new colony. Whereas, Rehabilitation is total re-establishment of lost livelihood, i.e., the recreation of the physical, social and cultural environment required for a new life with dignity.<sup>14, 15</sup> The present study has assessed the process of R & R and financial, physical and social support mechanism being provided to the displaced tribal families by the UCIL Authorities and their impact on current livelihood status.

Table 1.2 depicts the story of R & R process, frequency, and distribution of financial, physical, and social support provided through compensation awards to displaced families. On the

query regarding the provision of shelter, 95 percent of the respondents were accepted that they had been offered a pucca house at the foothills of “Chandro Pahad (Hill)” around 5Kms away from Turamdih to their families by the UCIL Authorities. However, the offer of a shelter or camp house had been accepted by only 16 percent of the displaced HHs/families. Even among those families who started living at shelter home provided by the authorities, most of them return to their village and resettle adjacent the UCIL, Turamdih uranium mine and mill. (Table 1.2) They built their houses using locally available clay soil, bamboo sticks, the residue of paddy, baked soil-tiles, etc.

On asking the reason behind not settling at the camp houses, most of the respondents revealed that the small, single room poor quality house was the main reason for not settling at the camp houses. They had also complained about the lack of provision of several other essential amenities and facilities as the reasons to make the decision not to resettle at the given site.

**Table 1. 2 Frequency and distribution of Resettlement and Compensation awards provided to the displaced communities. (N=411)**

<b>Resettlement and Compensation</b>	<b>Number of Families/HHs</b>	<b>%</b>
Shelter provided after displacement to the families	391	95.13
Family settled in resettlement camp houses provided by UCIL authority	66	16.06
<b>Reason for not resettling at camp houses or return back</b>		
Far from the native place	99	
Small/Poor quality house	343	
No water facility	53	
No electricity	139	
Not connected with road or transport system	24	Multiple Responses
Not school nearby	22	
No Hospital nearby	19	
Far away from working place	91	
Others	1	
<b>Compensation awards</b>		
Families received land for agriculture	15	3.65
Family member get training/apprentice by UCIL	49	11.92
Family member get pension from UCIL	6	1.46
Family member get job in UCIL	158	38.44
<b>Type of Job they doing in UCIL, Turamdih</b>		
Mining/Digging	66	41.8
Guard/Watchman	3	1.9
Supervisor	17	10.8
Sweeper/Scavenger	17	10.8
Grinding/Milling	43	27.2
Others	12	7.6
<b>Total</b>	<b>158</b>	<b>100.0</b>

Those reasons were lack of drinking water sources, no separate kitchen, bathroom, and toilet facility, no separate room for their live stokes, far from their native and working place, lack of road

connectivity and no provision of electricity, schools for their children and hospital nearby, etc. (Table 1.2) One of the female respondent Babita Hembram (42) state that-

***“We were ten household members at the time of displacement. Now we are twelve. The company offered a single room small pucca house to each household without considering the family size. Even there was no electricity and hand-pump nearby. Therefore, we returned and build their own houses by locally available building materials and resettle adjacent boundary of the company.”***

Although, almost half of displaced respondents claimed that they had lost agricultural land, however, less than four percent respondents received land for agriculture from the UCIL authorities. Many of the displaced respondents had compensated by “Cash” in lieu of agricultural and forested land. Such a major modification was made in 1983 after the introduction of the forests Conservation Act when alienation of forestland for settlement purposes became difficult. This modification introduces the option of “Cash in lieu of land” if the land was not available.<sup>13</sup>

There are two main types of land acquisition. First is the direct acquisition of land by the State Government for its own projects such as infrastructure development. The state government pays the owners compensation according to the ratio prescribed by its Land Acquisition Department. Second is the acquisition of land for an agency or a corporation, which wants to use that land for a development project. The state government decides whether the proposed project falls into the category of public purpose. If the State Government acquires private property for a development project, owned by a corporation or a federal agency usually, the corporation or the agency decides the money to the state government to pay compensation.<sup>16</sup>

As per skill development and training was a concern, the UCIL authority had provided to only 12 percent of the displaced tribal family members. (Table 1.2) Only one member from each household was selected for the skill training development program. Merely two percent of the total respondents assured that one of the family members (aged 60+) is getting a monthly pension of Rs.300/- from the company. One member from 38 percent (158) of the total surveyed HHs get a job in UCIL, Turamdih uranium mine and mill. Being illiterate or lower educated almost all the workers got 3D (Dirty, Dangerous, Degraded) jobs at the company; 42 percent among them were doing dangerous underground mining and digging to extract uranium ore. (Table 1.2) Mostly, those did not get a job in the company after displacement, were working as daily wage labourer at the construction site on demand at the nearby urban area. Many times, they do not have jobs in the market and face severe hunger and hardship for livelihood.

### ***National Rehabilitation and Resettlement Policy, 2007***

However, the National Rehabilitation and Resettlement Policy, 2007 formulated with an objective to address concerns on involuntary displacement through a quantification of the costs and benefits. It will accrue to society, and of the desirability and justifiability of each project, after assessment of the adverse economic, environmental, social and cultural impact on affected families, assessed in participatory and transparent manner. The policy has been notified in the Official Gazette and has become operative with effect from the 31st October 2007. Based on this policy, State Governments have framed their own Rehabilitation and Resettlement Policies for implementing R & R measures.<sup>14</sup>

Salient features of Rehabilitation and resettlement policies of the State Government of Jharkhand are following:

- Administrator for Rehabilitation and Resettlement supervises R&R
- Every project required to carry out Social Impact Assessment (SIA)
- Common public hearing for Environment Impact Assessment (EIA) and SIA
- No physical displacement till completion of resettlement work
- Photo identity cards issued to all displaced persons
- Project proponent to deposit cash component with the Administrator
- Benefits include:
  - Alternate house site
  - Two bedroom pucca house or financial assistance of Rs3 lakhs
  - 1/10th of land lost to be allotted
  - One time assistance of Rs35000 for cattle shed
  - One time assistance of Rs15000 for shifting family
  - One time assistance of Rs 50000 for shops
  - Employment of one person per family
  - Skill development training
  - In case of persons who do not want compensation, annuity of not less than Rs1000 per month per acre of land lost
  - In case of commercial projects, 1% of annual net profits of the project to be distributed every year to affected family
  - Monthly subsistence allowance of 25 days minimum agricultural wages per month per year
  - Where more than 100 tribal families are displaced, a Tribal Development Plan to be prepared

- 25% higher compensation in case resettlement outside the district
- Common facilities and amenities in resettlement area
- Periphery development within the 15 km radius of the project
- Tribunal for grievance redressal

Even though having national and state level R & R policies especially for displaced/project affected tribal families to minimize adverse economic, environmental, social and cultural impact by implementing R & R measures, but the poor, slow, unorganized, and delayed implementation of the R & R measures give endless suffering to affected tribal families. The story of displaced communities of UCIL, Turamdih is not the different one.

Nevertheless, tribal labourers those got job and working in the UCIL, Turamdih Uranium Mine and Mill for last several years, most of them did not get permanent status and therefore deprived of company's welfare schemes and benefits like housing allowance, medical, provident fund, insurance etc. They are still working on a contractual basis as daily wage labourers in the company. One of the respondent Jamuda Diggi (aged 44 years) told in anguish that-

*“I am working in this company for the last 15 years as an underground miner, even though I do not get a permanent position in the company and devoid of their related benefits. We work under a contractor, who do not pay as per the minimum standard wage implemented by the UCIL authorities and even do not pay on time.”*

### **Compensation in cash/cheque**

Table 1.3 shows the frequency and distribution compensation as financial assistance in cash paid to tribal families by UCIL authority after displacement from their houses and land at Turamdih uranium mining area. The study found that only 52 percent of the total displaced HHs (411) were received compensation amount in cash or cheque for their agricultural or forested land and houses. Even, the compensation amounts in “Cash” received by the tribal displaced families were scanty. Around 78 percent of the total receiver paid off between Rs.6000 and 30,000 only. Whereas, only five respondents (2.3%) had accepted of receiving compensation in cash more than Rs.60,000. In most of the cases, the Company/UCIL authority took the decision of compensation awards and amount for every displaced family.

**Table 1. 3 Compensation to the displaced families/HHs (N=411).**

Compensation	Number of Families/HHs	%age Distribution
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Compensation amount received in Cash/Cheque	214	52.1
<b>Compensation in Cash/Cheque (in Rs.)</b>		
6000 – 30000	166	77.6
30000 – 60000	43	20.1
More than 60000	5	2.3
<b>Total</b>	<b>411</b>	<b>100.0</b>
<b>Decision of compensation awards and amount taken by-</b>		
Household Head or Land Owner	2	0.9
Company/UCIL Authority	196	91.6
Bilateral Decision	16	7.5
<b>Total</b>	<b>214</b>	<b>100.0</b>
Financial assistance for cattle shed	00	00
Financial assistance for shifting families/house	00	00
Financial assistance for shops	00	00

Notably, the usual approach to offer compensation is based on the current value of the land at the time of notification, which might be much less than its value at the time of dispossession. Further, the bureaucratic corruption reduces the amount of compensation substantially less than the price of replacement land and property.<sup>18</sup> Nevertheless, almost all the displaced respondents told that they did not receive any financial assistance for cattle shed, shifting families/house and shops. Even they didn't know about their rights and the benefits covered by the R & R policy.

The distribution of cash compensation was too small to maintain a basic living amenities and standard. The objective of R & R of any project or unit has to provide a better standard of living to displaced families compared to that before displacement by ensuring “resource for resource” rehabilitation and an alternative source of livelihood along with a share in the project benefits. However, the study found lacuna and huge mismanagement in the implementation of R & R measures and consequent plight and misery in the livelihood to the entire displaced tribal communities.

**Table 1. 4 Utilization of Cash Compensation by the displaced tribal families/HHs (N=214).**

<b>Utilization of Cash Compensation</b>	<b>Families/HHs</b>	
a.) Purchase of Land	27	Multiple Responses

b.) Amount spent for agricultural land/production/items	16
c.) Purchase of house building materials / house construction	76
d.) Purchase of miscellaneous movable assets*	52
e.) Establishment of business and household industries	2
f.) Repayment of Old Debt	8
g.) Saving in Banks or Post-Offices	5
h.) Family Functions like Marriage or social function	3
i.) Consumption (Food items, Clothes)	35
j.) Alcohol, Tobacco, Gambling..etc	13
k.) Distribute/Share to family members	101
l) Others	3

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*\*Movable assets include - Cattle and poultry, Furniture, utensils, Motorcycle, scooter, car or other vehicle, Refrigerator, TV, Radio, AC or other electronic items, Ornaments (Gold, Silver..etc)*

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### ***Utilization of cash compensation by displaced tribal families***

The way of investment and utilization of cash compensation by a displaced family decides their future livelihood pattern. Table 1.4 reveal the utilization of cash compensation awarded to the displaced tribal families after displacement by the company/UCIL authorities. The respondents were given multiple choices to respond. We found that distribution of cash among family members (101) were most common response followed by use of compensation amount into purchasing of house building materials or house construction (76) and purchasing of miscellaneous movable assets (52) for the household. However, thirteen respondents told that they had lost a maximum share of compensation (in some cases all the cash) into alcohol consumption, drug/tobacco use, and gambling. Both Ho and Santhal tribal communities are very fond of taking alcohol, country liquor; locally known as Hadia, made of rotten boiled rice; and Mahuwa made of fermented flowers of Mohuwa (Scientific name: *Manduca Longifolia*). Even, Mahuwa is an essential drink for both tribal men and women during celebrations.<sup>19, 20</sup>

Actually, the economy and subsistence livelihood of the tribes in the Santhal Pargana region depend mostly on forest products like leaves, vegetables, fruits, tubers, roots, firewood etc. and hunting and fishing. Simultaneously, having a low level of education and less exposure to business and market make them unfit to proper utilization of the cash compensation into productive activities. Table 1.4 also depict that very less number of respondent families had used their compensation amount in productive manners like an establishment of business and household industries or amount spent for agricultural land, production or related items and tools.

## Changes in Sources of Economy and livelihood: Forest and Livestock system

UCIL, Turamdih Uranium Mine and Mill lies south of Jharkhand and forms the major part of the Chotanagpur plateau, which is one of the oldest regions of the world (Gondwana land). The region not only comprises in rich flora and fauna of different varieties but also has the richest cluster of mines and minerals in the country. Earlier, like many tribal groups in India, Ho and Santhal communities of the uranium mining region of East Singhbhum were too completely dependent on forest products (collection of firewood, leaves, fruits, flowers, and other miner produces, and hunting of wild animals), live stokes products (meat, eggs, and milk) and somewhat on paddy cultivation.<sup>21</sup> The establishment of the Uranium mine and mill at Turamdih region also led to ruthless cutting and plunder of the forest and timber species like sal, sissoo, basal, teak, aamla, acacia species, asan, bamboo, etc. as well as danger to the extinction of various animals and birds species in which Chotanagpur excelled.<sup>19</sup> These developments not only disturbed the vegetation cover and ecology of the region, but the very fabric of socio-economic life was set out of tune.

Table 1.5 shows that how the source of economy and livelihood of the native Ho and Santhal communities had gone through a transformation from traditional hunting, gathering and paddy cultivation to poor wage labourers. Each respondent was asked, “How many members aged 10 and above engaged in economic (earning) activities in your household and what type of job they do?”

**Table 1. 5 Frequency distribution of workers aged 10 and above (n=913) engaged in different sources of economy among surveyed households (N=411).**

Sources of Economy and Livelihood	workers# (n=913)	Sex (M/F*)
<b>Job in UCIL (n=158)</b>		
Sweeper/Mining/Digging/Milling labourer	106	M/F
Supervisor/watchmen/repairing and others	52	M
<b>Daily wage labourers (n=305)</b>		
Agriculture labourer	24	M/F
Mining/Digging labourer	126	M
Building Construction labourer	124	M/F
Labourer at Shop	31	M
<b>Household based business/industry (n=59)</b>		
Making Puffed Rice (Mudhi)	11	M/F
Potters/Handicraft	7	M/F
Selling vegetables	13	M/F
Tea stall or Paan/Gutka/Cigar shop	15	M/F
Trading Mahuwa/Hadia (Deshi Daru)	5	M/F
Bicycle/Motorcycle repairing	8	M
<b>Collection of Minor forest produces</b>	391	F
<b>Other Sources of Economy</b>		
Live stokes produces (milk, meat and eggs)	N/A	M/F
Horticulture/ Fruits and Flower (seasonal)	N/A	M/F
Honey collection and selling (temporary/seasonal)	16	M

\*M/F=Male/Female N/A= Data not available

#Number of workers include both paid and unpaid male/female age 10 and above.

They had also asked about their engagement in the collection of minor forest products, household-based business or industry, live stokes products, honey collection etc. to assess the current livelihood pattern and socio-economic and cultural settings. The findings demonstrate that a large number of labour forces have now shifted from traditional hunting, gathering, and slash and burn cultivation economy to daily wage labour and household based business or industries (manufacturing) economy. (Table 1.5)

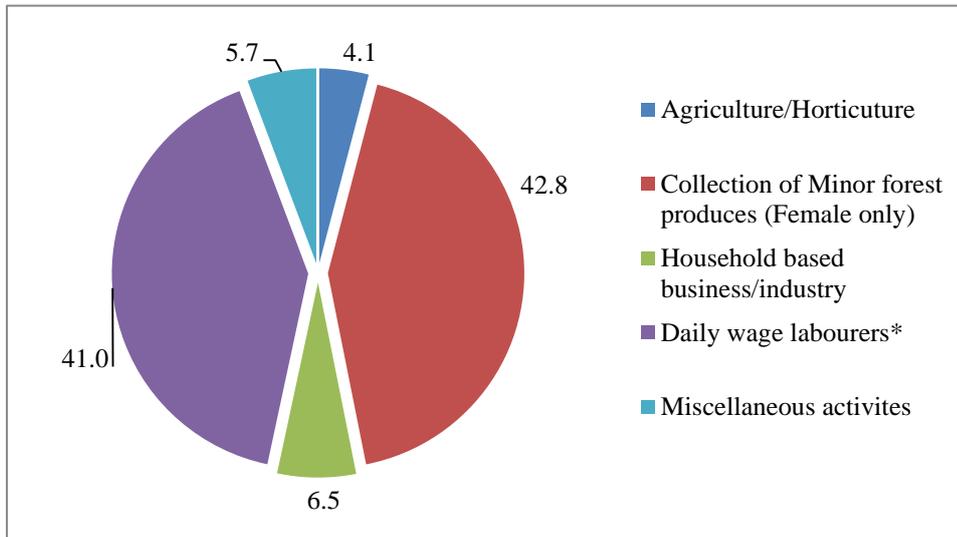
Though employment to a few numbers of displaced tribal people in the UCIL, Turamadih plant have elevated their income and standard of living, the total tribal communities as a whole have lost an earlier life of contentment in a self-sustaining and self-contained economy and cultural settings. Therefore, now a day most of the displaced tribal families are in ecological hardship because of the economic condition deterioration and compelled to change the traditional economic life and adopt unconventional economic life for survival.

Table 1.5 not only depict the diversification in the economic activities among displaced tribal communities of UCIL, Turamdih region but also the role of women in the family's survival and earning the livelihood. Tribal women occupy a relatively higher status as compared to the women in other Indian societies. Even today, the collection of firewood for daily cooking and other minor products of the forest is the primary source of livelihood, generally collected by tribal women. Because of displacement as well as vast deforestation, denudation, and disturbances in the ecosystem, the tribal women face severe stress. Beside, rearing and caring for their children and family members, they have to collect water, firewood, and fodder daily by travel long distances and spending twice time and energy than earlier. They also equally participate with their counterpart as a labour force in agriculture, mining and running the household based business and manufacturing sectors. (Table 1.5)

Livestock is another and most important source of livelihood for whole indigenous people in India and Ho and Santhal communities in particular in the study area as well. Both the Ho and Santhal are non-vegetarians and eat fish, chicken, and meat including pork and meat of rats, but they do not eat beef and buffalo meat. <sup>22</sup> The survey asked the respondent about the number of different types of livestock in each household they had before and after displacement. The survey found that hen, cock, goat, and cow were the most common livestock among the tribal households of the study area. Beside above pets, ox, Bullock, buffalo, duck, sheep, and pig were also owned in many tribal houses. However, the findings show that on an average the number of livestock has been a decline after displacement among most of the tribal households in the Turamdih mining areas. Transformation of traditional agriculture, hunting, and food gathering economy into intensive manual labour economy due to the establishment of the uranium mine and mill and other industrial

units in the study area might be the main reason for the decline of the livestock farming among the surveyed tribal communities.

Figure 1. 6 Current sources of livelihood among displaced tribal communities of UCIL, Turamdih Region, 2016.



\*Daily wage labourers include workers engaged in mining/digging/quarrying and road/bridge or building construction.

Traditionally, Ho was mainly a landowning community and was primarily engaged in agriculture. They sell firewood, collect forest produce, fishing occasionally, and sell rice beer; whereas, the Santhal was traditionally a hunting and food gathering community. Forest resources like animals, leaves, wood, honey, fruit etc. collection were also the source of their income.<sup>20, 21</sup> Before displacement by UCIL, more than 90 percent of them were engaged in their tradition economy for their livelihood. But, displacement and resettlement transform a lot their economy and occupational structure. Figure 1.6 shows the summary picture of the current occupation and source of livelihood of the displaced tribal communities of Turamdih region. Now more than fifty percent of the workforce engaged in non-traditional activities e.g. daily wage labourers (41%), household-based industry or manufacturing (6.5%) and other miscellaneous activities (6%) as the source of income and economy. Landlessness along with poverty and lower level of education compel the marginalized tribal people to do mining and digging mostly under dominating contractors in UCIL, Turamdih and as manual labourers in various unorganised sectors and construction sites on daily or weekly wages.

## SUMMARY AND CONCLUSION

The findings depict that almost all the surveyed tribal HHs have lost at least one either usual house of residence, agricultural or non-agricultural land due to involuntary displacement to establish new uranium mine and mill at Turamdih. In the name of resettlement, the shelters provided by the UCIL authority had been left out of several reasons. Those reasons were lack of drinking water sources, no separate kitchen, bathroom, and toilet facility, no separate room for their live stokes, far

from their native and working place, lack of road connectivity and no provision of electricity, schools for their children and hospital nearby, etc. Very few of displaced tribal families were given land for agriculture, but lack of irrigation and fertilizers made their land unused.

Being illiterate or lower educated almost all the workers got 3D (Dirty, Dangerous, Degraded) jobs at the company; half of them were doing dangerous underground mining and digging to extract uranium ore. Nevertheless, tribal labourers those got job and working in the UCIL, Turamdih for last several years, most of them did not get permanent status and therefore deprived of company's welfare schemes and benefits like housing allowance, medical, provident fund, insurance etc. They are still working on a contractual basis as daily wage labourers in the company. Mostly, those did not get a job in the company after displacement, were working as daily wage labourer at the construction site on demand at the nearby urban area. Many times, they do not have jobs in the market and face severe hunger and hardship for livelihood.

More than half of the total displaced families were received scanty compensation amount in cash or cheque for their agricultural or forested land and houses. The distribution of cash compensation was too small to maintain a basic living amenities and standard. Meanwhile, the study found lacuna and huge mismanagement in the implementation of R & R measures and consequent plight and misery in the livelihood to the entire displaced tribal communities.

Overall, displacement and resettlement transform their economy and occupational structure; from traditional hunting and food gathering to manual wage labourer. However, livelihood and standard of living didn't change significantly even after resettlement, compensation, and job provided to some of the native tribal families by UCIL, Turamdih.

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