

Livelihoods of Marginal Mining and Quarrying Households in India

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Presenting an exploratory approach by which quantitative data from the National Sample Survey can be analysed to throw light on the most marginal households whose primary occupation is recorded as mining and quarrying, this paper finds that a large portion of mining and quarrying is carried out informally by marginal households from disadvantaged social groups. The majority of them are concentrated in stone and marble quarries, living on the edge of poverty, earning irregular incomes, and with poor access to services and utilities. Considering the likely numbers involved and their vulnerability, the paper suggests that mining and quarrying households should receive better policy attention.

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A 2005 estimate by an international agency indicated that more than 20 million people in developing countries depend on a diverse range of mineral resource extraction activities—as wage workers and individual entrepreneurs—for their living (CASM 2005). Estimates vary depending on how the economic activity “mining and quarrying” is defined, and most global estimates focus on the informal extraction of high-value materials such as gold and diamonds. One can only imagine what the employment figures would be if industrial commodities (for example, coal, stone, sand, and gravel) are included in these estimates.

In India, the definition, in the Mines and Minerals (Regulation and Development) Act, 1957 (MMRD Act) and the Mineral Conservation and Development Rules (MCDR) of 1988,¹ of “large-scale” and “small-scale” mines tends to limit seeing the millions toiling away in innumerable quarries of various kinds all over the country. That some of these minerals are “minor,” making them state subjects, adds to the difficulty of estimating the number of people whose primary livelihoods depend on mineral extraction. The difficulties are compounded by the Census of India categorisation of mining and quarrying as one industrial activity. This implies no assumed difference between a salaried mine worker employed by, say, Coal India, and someone working on a piece-rate basis in a stone quarry. Add to this that many of these labourers might hold a small piece of land and earning seasonal and unreliable incomes from both farming and quarrying, and do not identify themselves as “workers” but “farmers” when asked by enumerators (Lahiri-Dutt 2014). The long history of extractive practices and the complementarity in occupations have not been recognised in mineral laws or by those who collect and classify official statistics, making mineral-dependent livelihoods largely invisible (Lahiri-Dutt 2004).

The result of definitional difficulty and lack of data specific to this economic activity is an invisibility, an obscurity, of the workers toiling away in India’s innumerable stone and “minor mineral” quarries, such as marble. The quarries are licensed operations in most instances but are loosely governed, and data about them are poorly recorded. It might be noted that due to their significant roles in commodity-production networks, these workers comprise an integral part of the informal economy of India, but are among those located literally at the “tail-end” of a reserve army of dispossessed labour whom Breman (2000: 25) describes as “outcast” labour. Besides the invisibility of quarry workers, the conflation of the “informal”

REVIEW OF RURAL AFFAIRS

and the “illegal” in mining helps to create a shroud of illegitimacy (Lahiri-Dutt 2007). The absolute (and highly contested) ownership of mineral resources by the state (Sundar 2009), the more recent adverse environmental and social effects corporatised mineral enterprises have had (Lahiri-Dutt et al 2012), and the poor attention paid by trade unions so far to protecting the interests of quarry workers (Roy 2013) further push the welfare of this labouring group away from development policy.

Our objectives are, first, to find a way to track down the poorest households in informal and small-scale mining and quarrying from official statistics, and, second, to find what can be discerned about the social and economic conditions of these households from these data. For these purposes, we have used the 68th round of the National Sample Survey (NSS) on consumption expenditure data (2011–12). The hypothesis is that a significant number of India’s poor depend on mining and quarrying for their livelihoods. Official data do not readily present this, nor do reports on the informal sector. For example, the 2009 National Commission for Enterprises in the Unorganised Sector (NCEUS) report mentions quarrying only in connection with the prevalence of contract labour and poor physical work environments (2009). This exercise assumes significance, given that it is difficult to elicit any robust information from various sources of official data.

The method here investigates the extent to which mining and quarrying households with irregular incomes can be quantitatively characterised from existing data sets. The foremost challenge is to accurately identify households that do not have a “regular” income from mining and quarrying, yet report this activity as their primary source of income.

This complements an action-research study being undertaken by one of the authors as part of an Australian Research Council-funded project. Entitled “Beyond the Resource Curse,” this investigates, through qualitative methods, the individual workers’ various conditions. Examples of such a qualitative, exploratory, case study approach can be seen elsewhere (Lahiri-Dutt et al 2014a, 2014b). This quantitative study also has a predecessor (Mukhopadhaya and Lahiri-Dutt 2014) in which “marginal workers” in the Indian census data were used as a proxy for casual employment in the small-scale mining sector; that paper focused on women’s labour.

This article is divided into two parts. The first outlines the method we followed to zero in on the poorest of poor households that depend on mining and quarrying as shown in the recent NSS data. The second part outlines the characteristics of these mining and quarrying households, which can be split into marginal (that is, without regular salaries) and non-marginal. The characteristics included income, caste identity, and access to health services, education, and energy use.

1 Identifying Mining and Quarrying Households

The NSS conducts extensive periodic surveys of households focusing on aspects such as consumer expenditure, employment, health, agriculture, and so on in each round. These surveys are extensive enough to allow data to be disaggregated to the state level. Each NSS survey on consumption expenditure

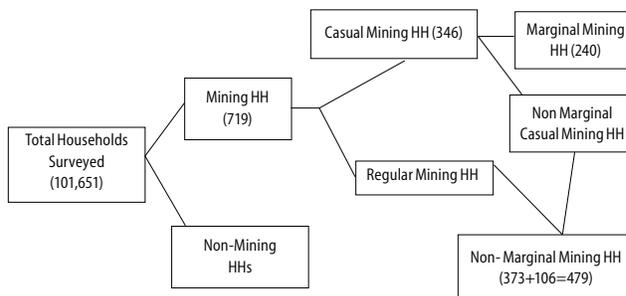
of households has a variable called the “principal industry” from which households derive the bulk of their income.

We select households that reported non-petroleum mining and quarrying as their primary income source. From this, we isolate households where mining is a casual employment, and based on the nature of occupational activities in the mining and quarrying sector, we identify “marginal” as a sub-category within casual mining households. In the second part, we discuss household characteristics such as social grouping, economic status, and access to amenities and infrastructure.

Regular and Casual Mining and Quarrying Households: To start with, we separate households that have regular incomes from mining and quarrying from those who have only casual incomes. To identify casual mining and quarrying households, we focus on households with non-petroleum mining as their principal industry. The principal industry households is denoted by a five-digit National Industrial Classification (NIC) code (MOSPI 2008). We classified households in two categories—non-petroleum mining households and others—on the basis of their NIC classification in the data. We found 719 of the 1,01,651 households surveyed by the NSS had non-petroleum mining as their principal economic activity.

NSS data also provide information on whether any member of a household is employed on a regular basis. We use this to divide mining and quarrying households into two categories—those with no person employed regularly, and those with members in regular jobs. We denote the first group as casual mining households, and this study focuses on them. There were 346 households among those surveyed that were identified as casual mining households (Figure 1).

Figure 1: Schematic Representation of Steps Taken to Identify Marginal Mining and Quarrying Households



Actual numbers are in brackets; the four blocks on top are relevant here.

Marginal and Non-Marginal Households in the Casual Group: To identify marginal mining and quarrying households in the group earning casual incomes from mining and quarrying, we examine their main occupational activities. This is because casualness itself does not imply marginality—as many of the households could be involved in high-end technical contracting and/or in managerial/administrative activities on a casual basis. It is quite likely that they could be included in the casual mining and quarrying households group if their earnings, though possibly quite high, are not in the form of a regular salary.

To further filter the data, we examine the National Classification of Occupations code of the households (NCO 2004) for a

more precise indication of the nature of their occupations. The occupational categories of the 346 casual mining households are provided in Table 1.

Table 1 shows that not all casual mining households that reported that none of their members were employed on a regular salary are from economically vulnerable categories. For example, the occupational categories 121 (directors and chief executives), 122 (production and operations department managers), and many others in Table 1 are clearly top-end professionals employed by mining companies on a casual basis. Thus, we need to identify the occupational categories that are the most vulnerable in the mining and quarrying sector.

We select three occupational codes in Table 1 (in bold) to represent the most vulnerable or marginal mining households. They are 711 (miners, shot-firers, stone cutters and carvers), 931 (mining and construction labourers), and 933 (transport labourers and freight handlers), as we believe, on the basis of field experience, that these activities are at the lowest and most hazardous end of the value chain in the mining and quarrying industry. Thus, we are left with 240 households that can be classified as marginal, the rest being non-marginal.

The NSS data provide sampling weights and the size of each household, which can be used for a projection on the entire population or sub-populations. If we apply this to our small data set, the 240 marginal mining and quarrying households represent a total of about 6,10,000 households or, alternatively, approximately 2,70,000 people.² This number could be a conservative estimate of the population that is actually dependent on mining and quarrying for their livelihoods because the consumption expenditure survey of the NSS is not designed to capture a household's principal occupation or industry. The primary purpose of the survey is to represent households of all socio-economic strata, but without appropriate attention paid to their industry and occupation. Nevertheless, these data, with all their shortcomings, allow us to look into the socio-economic

Table 1: Distribution of Casual Mining and Quarrying Households on the Basis of Their Principal Occupation

Occupation Code	Occupation description	Number of Casual M&Qs Surveyed
121	Directors and chief executives	40
122	Production and operations department managers	3
241	Business professionals	2
342	Business services agents and trade brokers	1
419	Other office clerks	1
611	Market gardeners and crop growers	1
711	Miners, shot-firers, stone cutters and carvers	99
712	Building frame and related trades workers	1
713	Building finishers and related trades workers	1
714	Painters, building structure cleaners, and related trades workers	4
723	Machinery mechanics and fitters	1
811	Mining and mineral processing plant operators	8
832	Motor vehicle drivers	3
913	Domestic and related helpers, cleaners and launderers	2
920	Agricultural, fishery and related labourers	28
931	Mining and construction labourers	124
932	Manufacturing labourers	10
933	Transport labourers and freight handlers	17
Total number of casual mining households surveyed		346

Source: Authors' calculations from NSS 68th round consumption expenditure data.

characteristics of mining and quarrying households across the country. Field-based studies, though rich in ethnographic information and insights, focus on a specific locality. On the other hand, large-scale quantitative data help us to map the regions and numbers of people who depend on marginal/illegal mining and quarrying activities in the country.

Spatial and Material Break-up of Marginal Mining and Quarrying Households: Having identified the marginal households, we now look at their spatial distribution. Table 2 gives the break-up of the estimated number of mining and quarrying households in the 2000s in accordance with their marginality and rural/urban location.³

Table 2: Distribution of Marginal and Non-Marginal Mining and Quarrying Households (in '000s)

Region	Marginal	Non-Marginal	Total
Rural	527.6 (59.8%)	354.8 (40.2%)	882.4 (100%)
Urban	81.4 (15.1%)	458.2 (84.9%)	539.6 (100%)
Total	609 (42.8%)	813 (57.2%)	1,422 (100%)

Source: Authors' calculations from NSS 68th round consumption expenditure data.

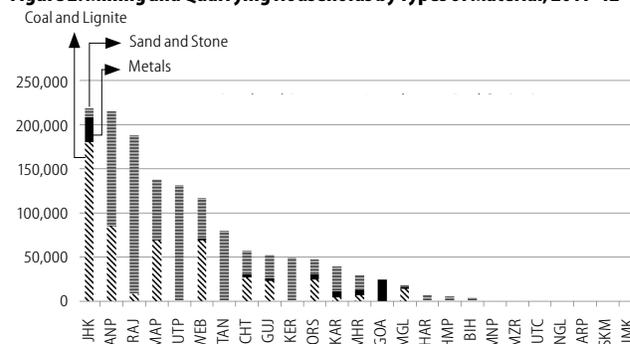
Close to 43% of the 1.42 million estimated mining households are marginal mining and quarrying households. About 84% of the 5,39,572 urban mining and quarrying households fall in the non-marginal category. In rural areas, only 40.2% of a total of 8,82,413 mining and quarrying households are in the non-marginal category, implying that close to 60% of the mining and quarrying households are marginal. The majority, 86.6% of the 6,09,000 marginal mining and quarrying households, reside in rural areas.

Column 1 of Table 3 (p 30) lists the estimated number of marginal mining and quarrying households in the states in decreasing order. Rajasthan has the highest number of marginal mining and quarrying households, followed by Andhra Pradesh (93,960), Uttar Pradesh (75,069), and Tamil Nadu (62,536).

Within marginal mining and quarrying households, there are diverse occupational activities. It is possible to further dissect the data into a state-wise break-up of different occupational activities such as mining, stone cutting and carving, and ancillary activities such as transportation, and so on. However, this note does not present that data.

Let us now turn to the types of materials that are being mined and quarried in the states by principal mining and quarrying households as seen from the data. Figure 2 gives a material-wise break-up, showing that the number of all households

Figure 2: Mining and Quarrying Households by Types of Material, 2011–12



Source: Authors' calculations from NSS 68th round consumption expenditure data.

REVIEW OF RURAL AFFAIRS

Table 3: Estimated Number of Mining and Quarrying and Other Households by State in 2011–12

State	Mining and Quarrying Households		Other Households	Total
	Marginal	Non-Marginal		
Rajasthan	165,670	18,012	1,23,86,739	1,25,70,422
Andhra Pradesh	93,960	1,18,729	2,24,99,776	2,27,12,464
Uttar Pradesh	75,069	54,124	3,42,43,566	3,43,72,759
Tamil Nadu	62,536	17,290	1,88,15,243	1,88,95,068
Madhya Pradesh	43,421	94,874	1,40,75,997	14,214,292
Jharkhand	39,457	1,77,232	56,02,565	58,19,254
Kerala	30,197	20,623	78,33,279	78,84,100
West Bengal	25,136	91,771	2,09,32,816	2,10,49,724
Chhattisgarh	19,015	39,321	50,80,404	51,38,741
Karnataka	13,407	27,255	1,33,01,300	1,33,41,962
Odisha	11,979	34,952	90,91,446	91,38,377
Meghalaya	10,592	7,917	5,06,667	5,25,177
Maharashtra	5,846	25,283	2,51,72,398	2,52,03,528
Haryana	5,672	1,078	52,87,826	52,94,576
Gujarat	3,749	48,125	1,26,20,897	1,26,72,771
Mizoram	1,066	0	2,00,162	2,01,228
Manipur	1,006	105	4,60,701	4,61,812
Goa	536	24,849	3,06,611	3,31,996
Nagaland	403	0	2,31,036	2,31,439
Arunachal Pradesh	174	68	2,29,005	2,29,246
Jammu and Kashmir	53	0	19,12,411	19,12,463
Sikkim	36	81	1,35,148	1,35,264
Himachal Pradesh	0	5,844	15,44,768	15,50,612
Punjab	0	0	56,83,113	56,83,113
Chandigarh	0	0	2,34,487	2,34,487
Uttarakhand	0	899	21,32,348	21,33,247
Delhi	0	0	31,87,346	31,87,346
Bihar	0	4,573	1,80,00,980	1,80,05,553
Tripura	0	0	8,75,197	8,75,197
Assam	0	0	57,87,886	57,87,886
Daman and Diu	0	0	56,894	56,894
Dadra and Nagar Haveli	0	0	76,352	76,352
Lakshadweep	0	0	10,645	10,645
Pondicherry	0	0	3,35,771	3,35,771
Andaman and Nicobar Islands	0	0	88,822	88,822
Total	608,980	813,005	24,89,40,604	25,03,62,589

Source: Authors' calculations from NSS 68th round consumption expenditure data.

(including marginal and non-marginal mining and quarrying households) involved in quarrying coal and lignite is the highest in Jharkhand while stone quarrying dominates in Rajasthan, Uttar Pradesh, and Tamil Nadu.

Jharkhand, Andhra Pradesh and Rajasthan have the largest number of mining and quarrying households. Rajasthan tops the list of marginal mining and quarrying households and most of them are involved in sand and stone mining and quarrying (Figure 2), followed by Andhra Pradesh and Uttar Pradesh.

Figure 3 shows that the incidence of marginality is high (65%) in sand and stone mining—88% of the 6,10,000 marginal mining and quarrying households are in it. About 13% (or 64,629) of the total households involved in coal and lignite mining are marginal mining and quarrying households. For metal mining and quarrying, the figure is smaller (7% or 6,222).

2 Household Characteristics

We turn our attention to the socio-economic characteristics of the mining and quarrying households identified from the NSS data. Table 4 gives a break-up of marginal and non-marginal mining and quarrying households on the basis of broad social categories. Nearly half (48.3%) of the marginal mining and

quarrying households have disadvantaged social backgrounds (are Adivasis, or Scheduled Tribes; Dalits, or Scheduled Castes, or Muslims). The next large category is non-Muslim Other Backward Classes (OBCs) (46.3%). Others, those with social advantages, are a small minority of mining and quarrying households (5.5%). Even among non-marginal mining and quarrying households we see similar trend but the differences are less glaring.

Breaking these data down further, we assess how different groups are involved in marginal mining. In Figure 4, the heights of the bars illustrate the estimated number of mining and quarrying households in each social category and the split between marginal and non-marginal ones in various social groups. In absolute

numbers, non-Muslim OBCs dominate both marginal and non-marginal mining and quarrying activities. More than 55% Dalit households are marginal mining and quarrying households, followed by Muslim OBCs (50.5%), and non-Muslim OBCs (46.9%).

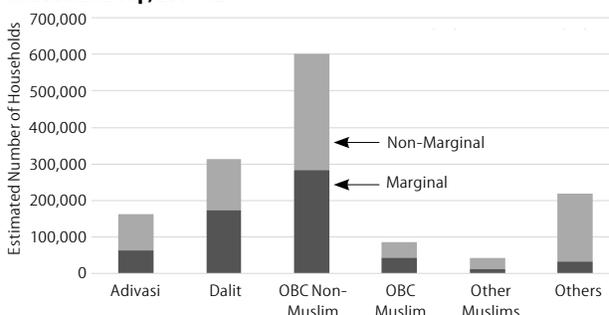
The NSS monthly per capita consumption expenditure (MPCE) is usually used as a measure of the economic status of households. Table 6 (p 31) shows that there is a significant gap in the MPCE of marginal and non-marginal mining and quarrying households. It is relevant to note that the MPCE relates to poverty. There is more than one poverty line, and different reports by expert groups provide different cut-off values. For example, the Planning Commission used an MPCE of Rs 816 and Rs 1,000 for rural and urban areas, respectively, in 2011–12 (GoI 2013), while a more recent expert group (headed by C Rangarajan) recommended an MPCE of Rs 972 and Rs 1,407, respectively (GoI 2014).

Table 4: Distribution of Mining and Quarrying Households by Broader Social Category, 2011–12

Mining and Quarrying Household Type	Disadvantaged Social Group	Non-Muslim OBCs	Others	Total
Marginal	48.3	46.25	5.45	100
Non-marginal	38.04	39.21	22.76	100
Total	42.43	42.23	15.34	100

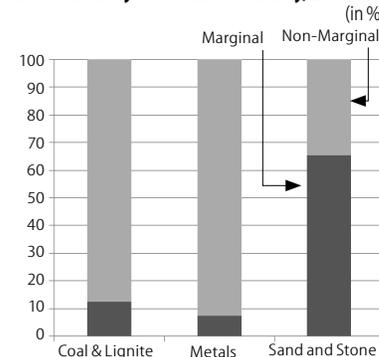
Source: Authors' calculation from NSS 68th round consumption expenditure data.

Figure 4: Distribution of Mining and Quarrying Households by Marginality and Social Group, 2011–12



Source: Authors' calculation from NSS 68th round consumption expenditure data.

Figure 3: Distribution of Mining and Quarrying Households by Sector and Formality, 2011–12 (in %)



Source: Authors' calculation from NSS 68th round consumption expenditure data.

Table 5 shows the precarious situation of marginal mining and quarrying households. The intensity of poverty depends on the poverty line used. Poverty among marginal mining and quarrying households range from 9.66% to a high of 52.4% depending on how the poverty line is defined. Clearly, the MPCE of marginal workers hovers around these poverty lines. In other words, marginal mining and quarrying households are likely to live at the edge of poverty and the slightest economic shock could lower them into poverty, making them vulnerable.

Table 5: Poverty Levels among Mining and Non-Mining Households by Different Poverty Lines, 2011–12 (Percentage)

Groupings	Official	Rangarajan	McKinsey
Marginal M&QHs	9.66	25.07	52.36
Non-marginal M&QHs	5.64	14.53	23.37
Non-mining households	12.24	24.42	42.40
Total	12.21	24.39	42.36

Source: Authors' calculations from NSS 68th round consumption expenditure data.

The gap between marginal and non-marginal mining and quarrying households is lowest among Adivasis and Other Muslims (those who are not Dalit or OBC) (Table 6). In other words, the MPCE of these social groups working in the informal/non-marginal mining and quarrying sector is very similar to those in the formal mining and quarrying sector. This implies that even when members of these households are in non-marginal mining and quarrying activities, they are generally employed in low-paying positions. The gap is widest for "Others," the most socially advantaged group, implying that people of households with better social status are generally employed at higher levels in the non-marginal sector where salaries are better. Moreover, Other Muslims in marginal mining and quarrying households earn the least, and on an average Adivasi and Dalit households are at a low level, whereas those in the Others category have a higher MPCE. Clearly, even in marginal and non-marginal mining and quarrying households, there is a social component that becomes evident in Table 6. Therefore, we can see that a dichotomous categorisation of mining and quarrying households into marginal and non-marginal is not enough, and analysis of data must recognise the role of social hierarchy in determining the economic status of households. One exception to this general observation is Muslim OBCs—they have significantly higher MPCEs in the marginal category. We are unable to clearly identify the reason for this.

Table 6: Monthly Per Capita Household Expenditure among Mining and Quarrying Households by Social Group, 2011–12 (Rs per month)

Social grouping	Marginal	Non-marginal	Total
Adivasi	1,351	1,545	1,473
Dalit	1,315	2,081	1,694
Other OBC	1,303	2,060	1,677
Muslim OBCs	1,751	1,803	1,778
Other Muslims	1,251	1,392	1,347
Others	1,411	3,012	2,717
Total	1,348	2,128	1,786

Source: Authors' calculations from NSS 68th round consumption expenditure data.

Table 7: Access to Household Amenities/Facilities in 2011–12 (Percentage)

M&QH type	Access to Electricity	Clean Cooking Facility	Ownership of Ration Cards	Ownership of Non-Homestead Land
Marginal	85	11	85	31.53
Non-marginal	92	45	65	37.13
Total	89	30	74	34.73

Source: Authors' calculations from NSS 68th round consumption expenditure data.

Table 7 indicates the degree to which mine workers have access to basic facilities and whether they own any land. The data destroys the myth that mining and quarrying households in general have no links with agriculture. A significant portion of marginal mining and quarrying households own non-homestead land—31.5% have some land. A slightly higher proportion, 37%, of non-marginal mining and quarrying households also have some non-homestead land. NSS data show that 27.5% of the marginal mining and quarrying households were cultivating some land during 2011–12 while mining and quarrying remained the major source of their livelihood. The corresponding number for non-marginal mining and quarrying households stood at 22.8%. This indicates that non-marginal mining and quarrying households are relatively more dependent on incomes from mining while marginal mining and quarrying households, the more vulnerable households, are relatively more linked to the land. This substantiates the point made earlier about the complementary relation between labour in farming and quarrying. It, however, remains to be established from the data whether the households moved to mining and quarrying to improve their livelihoods or it was a choice made under conditions where they had little choice.

Looking at the access to amenities and facilities between the two groups in Table 7, we see that while the gap with regard to access to electricity between marginal and non-marginal mining and quarrying households is quite small, the disparity is much wider in the case of having a clean cooking facility (that is, access to either kerosene or gas as a cooking fuel).

Interestingly, compared to non-marginal mining and quarrying households, a larger proportion of marginal mining and quarrying households (85%) own ration cards. The ownership of a ration card is crucial as a formal document to prove identity and residential status. Second, ration cards recognise their need to access cheaper food from the public food distribution system.

We also examine if women-headed households are over-represented among marginal mining and quarrying households as they are generally considered to be the most vulnerable. The proportion turns out to be slightly higher (5.7%) than for non-marginal mining and quarrying households (5.2%) but this difference is not significant. The data probably indicate that many marginal mining and quarrying households continue to follow the "family labour system" where the husband and wife work together as a unit of labour.

Comparing the burden of expenditure on non-food essential items, such as education, health, and energy, between non-marginal and marginal mining and quarrying households should show the general level of destitution, if any, among marginal mining and quarrying households. This is shown in Table 8. The high burden of expenditure on education among non-marginal mining and quarrying households may be because of private schooling and tutoring, which is unaffordable to marginal mining and

Table 8: Per Capita Expenditure of Mining and Quarrying Households on Education, Health, and Energy, 2011–12 (as a percentage of MPCE)

Mining and Quarrying Household Type	Education	Health	Energy
Marginal	2.22	18.95	39.62
Non-marginal	5.40	17.29	28.95
Total	4.35	17.84	32.49

Source: Authors' calculations from NSS 68th round consumption expenditure data.

REVIEW OF RURAL AFFAIRS

quarrying households given their lower MPCE. The burden of expenditure on health is roughly the same in absolute terms for all mining and quarrying households, but the MPCE of marginal mining and quarrying households is only about two-thirds that of non-marginal mining and quarrying households (Table 6). The burden of expenditure is difficult to capture through direct expenditure as non-marginal mining and quarrying households often have access to free and better quality medical facilities provided by their employers, while marginal mining and quarrying households are left to the vagaries of privately run clinics, untrained quacks, or even self-medication. The burden of expenditure on energy of marginal mining and quarrying households (40% of the MPCE) is considerably higher compared to non-marginal mining and quarrying households (29%). In our field observations, we found that people dependent on non-clean cooking fuels (firewood and other biomass) ended up spending more money on fuel than those with access to clean cooking fuel. Given that only 11% of marginal mining and quarrying households have access to clean cooking fuel compared to 45% of non-marginal mining and quarrying households, their high energy expenditure is plausible. It is important to note that households are usually classified as energy poor in Organisation for Economic Cooperation and Development (OECD) countries if they spend more than 10% of their expenditure on fuel.

Conclusions

We examined NSS data to identify households where mining is casual employment, and from the nature of that employment, we identified “marginal” as a subset. The results indicate that more than 42% of the estimated 1.4 million mining and quarrying households are marginal, or extremely vulnerable, without secure jobs. This figure is quite large, and needs to be taken into consideration when discussing informal sector employment and poverty. The analysis also throws light on the caste of these workers, and OBCs appear to be the single largest social group among mining and

quarrying households. Our results show that most marginal mining and quarrying households are involved in mining and quarrying stone and marble. Being marginal, these households are unable to spend adequately on health, education, and energy, as their limited MPCE shows. Field experience shows that many members of such households suffer from occupational diseases related to poor air quality, dust inhalation, and fatigue, and that there is limited access to medical assistance. The analysis thus at least partially illuminates the true nature of casual employment in mining, often presented as the harbinger of economic progress and jobs in India. The acute poverty of marginal mining and quarrying households also throws light on what actually constitutes mining in the country—an industry that stands largely on the shoulders of lower-caste quarry workers from very poor households.

The current method has wider implications. It provides an invitation to locate the marginal households in several other poorly studied segments of work, which together comprise the amorphous and large informal economy of India. Such an analysis would help academics and planners understand relative degrees of vulnerability that prevail within different segments of work in the informal sector. This might make a more targeted and prioritised policy response possible.

Importantly, the study presents an analytical challenge in considering how occupational data can be broadened to capture the immense variety and diversity of ways by which the poor earn what Bryceson (2002) calls “multiplex livelihoods” in a country where the primary sector is agriculture. Many quarry workers may not self-identify as anything but farmers, and some may even own small farms that they cultivate seasonally if the situation permits. Unless official data are able to present a fuller picture of the complex ways in which households at or around the threshold of poverty subsist, putting them into unambiguous occupational categories could be counterproductive.

NOTES

- 1 The MMRD Act of 1957 is the principal legislation governing mineral prospecting, exploration, and mining. The MCDR divides all minerals into “major” and “minor,” and gives the responsibility of mining major minerals (such as coal) to the central government while the minor minerals are governed by individual states.
- 2 Projection of the number of households and people belonging to these households is on the basis of sampling weights provided by NSS, accounting for the size of each household within that category.
- 3 The definition of “urban” in the NSS is the same as in the census, that is, (a) all places with a municipality, corporation or cantonment and places notified as a town area, or (b) all other places which satisfy the following criteria—a minimum population of 5,000, at least 75% of the male working population working as non-agriculturists, and a density of population of at least 390 per square kilometre (1,000 per square mile).

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