

## Socio-Economic Impact Study of Jamuna Kotma Coal Field Region Anuppur District MP

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### -----ABSTRACT-----

*The present paper makes a realistic attempt to examine the socio economic impact rendered by the mining operations carried out in the Jamuna Kotma Coal Field Region in the district of Anuppur, Madhya Pradesh (India). Based on the participatory field methods used with the impacted population and Kendall's ranking coefficient method, the study area has been categorized into different socio-economic development regions that may indicate the impact of ongoing mining activities in the area. Regional disparities in the levels of development have become a major concern for any type of spatial planning development. This is a multi dimensional phenomenon which is governed by several factors an area In order to reduce or eliminate such regional disparities it is essential to pay attention to the regions of low development because population and society are dynamic factors of region .The villages that are highly developed in terms of their social, economic and demographic factors can also show significant growth and development in terms of optimum land use and agricultural efficiency.*

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### I. INTRODUCTION

Mining is a site-specific activity and is done at the sites where minerals exist. Also, Mining is considered as an environmentally unfriendly activity. Globally, attention has been drawn towards the environmental impacts of mining and associated activities in mining complexes, and the action that are required to be taken for minimization prevention and mitigation of these impacts. The activities in mining complexes affect all the components of the environment and these effects could be temporary or permanent reversible or irreversible repairable or irreparable and beneficial or harmful. Mining activities also impacts on socio-economic conditions of the area from beginning and end of the operations. It enhances the economic status of the people and provides the other facilities like health, education and other infrastructures.

*Jamuna Kotma* area situated in *Anuppur* District of M.P. Area falls under SOI toposheet No. 64E/16 and 64I/4 in range of latitude in between 23°0' and 23°15' and longitude in between 81°45' and 82°05'. *Anuppur - Chirimiri* section of SECL Railway is passing through it. National Highway 78 is also passing along northern side of the area. Mine area headquarter is situated about 6.5 km south of *Kotma* railway station (Fig1). *Kewai* River is passing along the north – south of the study area.

The area is gently undulating with the general slope towards River *Kewai*. The surface attains maximum and minimum elevation of 573.47 and 512.42 m respectively from msl (Mean Sea Level). At places, particularly, the areas at the fringes of river *Kewai* exhibits “bad land” topography. *Haraful Nala*, perennial stream, traverses the eastern part of the colliery and drains into river *Kewai* that mainly controls the drainage in the area. The temperature varies from 4.9° to 44° c. Average annual rainfall is 1430 mm. Topography of the area is gently undulating. The locations of the villages are shown in fig.2.

### II. METHODOLOGY

For regional disparities analysis, socio economic data obtained from the competent mining authority and the data collected from the primary survey through questionnaire and personal interviews with the various groups (PRA technique) were utilized. With the help of Kendall's ranking coefficient method, the identification of regional disparities was made. These indicators were broadly divided into social, economic and demographic. Because of the different approaches of various authors viewing development from various angles, the selections of these indicators here were purely made on an arbitrary base (Aslam1986, Coutinho1989. Landau, and Everitt, 2004. Luecht, *et. al*, 1989. Martin, 1994, Nagaraj and Krashna Murthy 2007, Nagarajan 1993 Sahu, 1986) Present study includes 11, 14 and 5 indicators of social, economic and demographic respectively (Table 1).

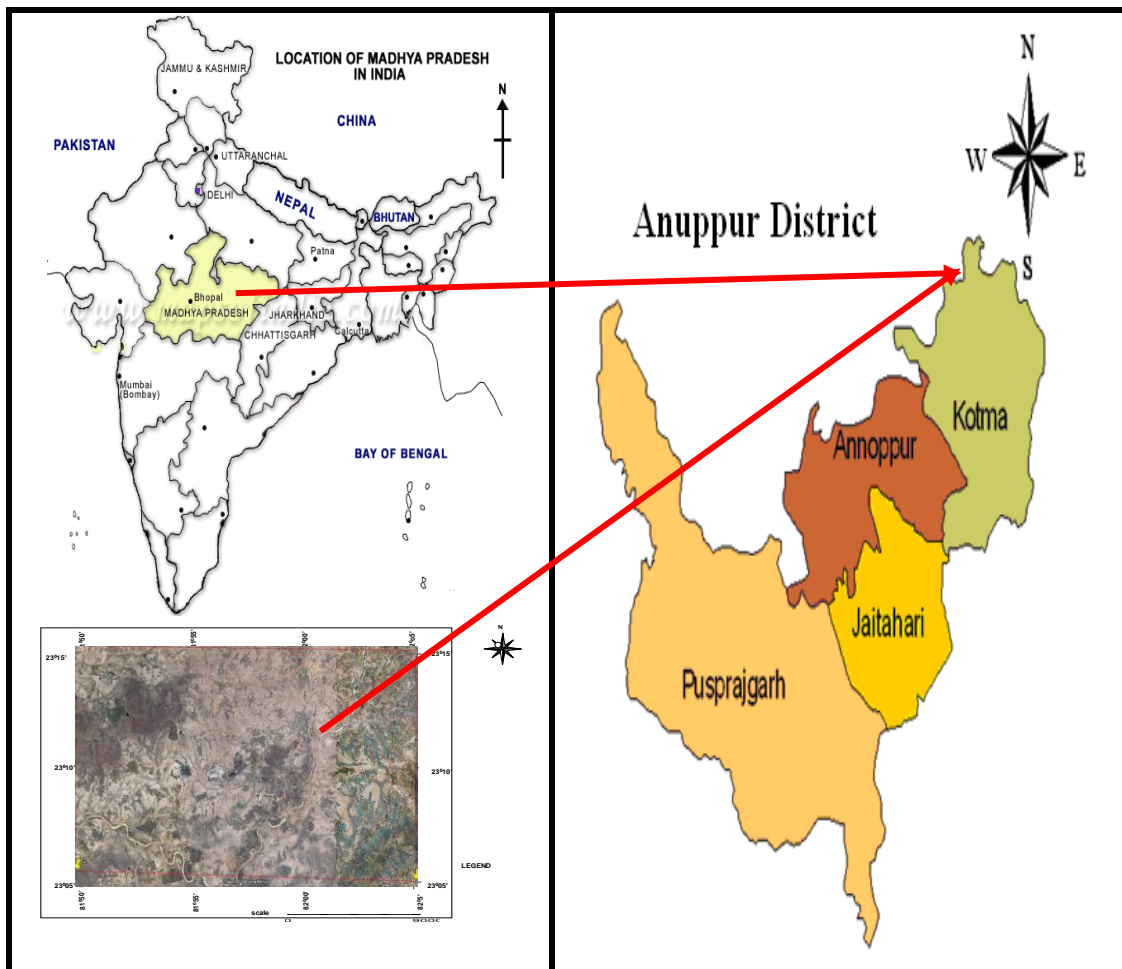


Fig.1 Location Map of Study Area

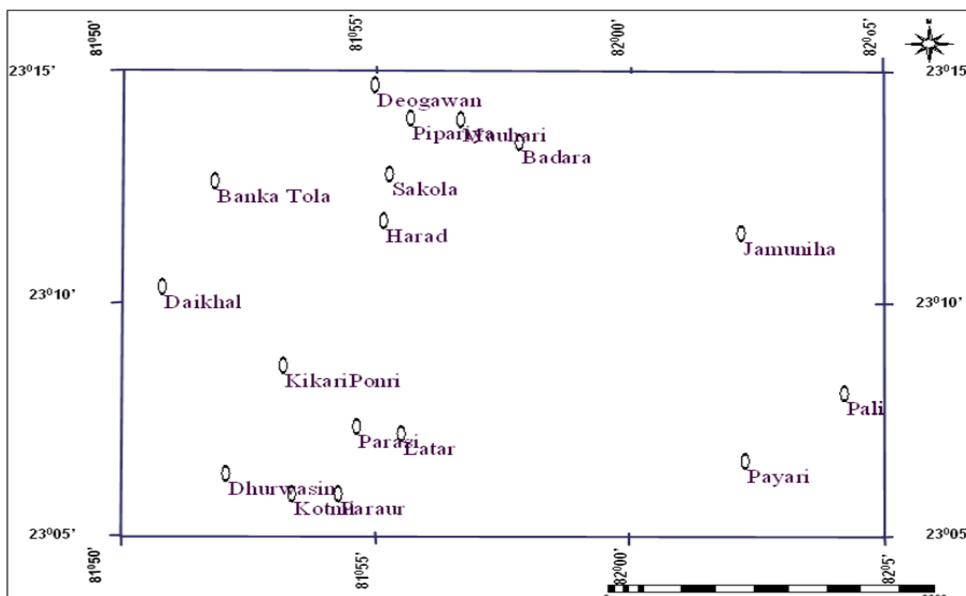


Fig.2 Village location Map

**Formula used in socio economic study**

Population Density = (Population/Area) \*100

Work Density = (Total worker/Population)\* 100

Crop Intensity = Grass Cropped area/ Net area shown

Land Use Intensity = Total Cultivated area/ Total culturable area

Culturable Area = Cultivated area + culturable waste

Table1, 2, 3, 4 and 5 had showed the various indicators that had been used for analysis of socioeconomic study. We had used following indicators:

**Table 1 – Indicators (Social, Economic, Demographic)**

S. No.	Social (TS)	Economic (TE)	Demographic (TD)
1.	Number of primary school (PS)	Forest Land	Population
2.	Number of middle school (MS)	Irrigated Land(Ha)	Area
3.	Number of high school (HS)	Grass Irrigated	Density of population
4.	Electricity for domestic purpose (ED)	Unirrigated Land	Total worker
5.	Electricity for All purpose (EA)	Net crop area	Literacy (% of total population)
6.	River water (R)	Culturable waste	
7.	Tank water (TK)	Co operative society	
8.	Nala water (N)	Godown	
9.	Post office (PO)	Bank	
10.	Telegraph office (TO)	cultivated/culturable	
11.	Other facilities (O)	Number of well	
12.		Number of Hand pump	
13.		Number of Road	
14.		Number of Tank Water	

### III. ANALYTICAL FINDINGS

Regional disparities in the levels of development have become a major concern for any type of spatial planning development. This is a multi dimensional phenomenon which is governed by several factors an area (Joshi 1979). Now a days the central theme of research and planning relates to the socio economic upliftment of the rural sector the modes of development like planning, industrialization, rapid development of transport and communication, development of banking facilities (with branches in most villages, towns and cities) and establishment of different types of educational institutions, health facilities, technological and institutional innovations in agriculture are the major factor contributing to regional development (Nagraj 2007). However, in actual practice these infrastructural facilities may not be available in a uniform distribution pattern in a region. As a result, regional disparities do occur in a given time and space.

**Table 6**

Year	1991		2001	
Class	Rank	Village	Rank	Village
Very High	<25.18045	Banka Tola, Deogawan	<30.85147	Kotmi,Banka-tola,Pali,
High	25.18045 - 31.00855	Padaur,Pali, Pipariya,Kikari Ponri, Harad, Kotmi Sakola,	30.85147-38.27747	Jamuniha Padaur, Kikari-pond,Harad,sakola Deogawan
Medium	31.00855-36.93366	Jamuniha, Daikhal, Payari, Dhurvasin, Latar, Parasi	38.27747-45.70347	Mauhari, Payari, Dhurvasin, Parasi, Badra, Piparia, Daikal,
Low	36.93366-42.7647	Beliya,Badra,	45.70347-53.12947	Latar
Very Low	>42.7647	Mauhari	>53.12947	Beliya
	Mean = 31.00855		Mean = 38.27747	
	SD = 5.8281		SD = 7.426	

### IV. VERY DEVELOPED REGION

Socioeconomic table 6 deciphered that during both period (1991 and 2001) *Banka Tola* was very high developed, while the *Deogawan* which was very high developed, in 1991, falls down under the high developed village. In 2001 two villages (*Kotmi* and *Pali*) were comes under the very high developed village due to the development of new mines area in *Pali* and *Kotmi*. Development of these region was due to the establishment of primary school, middle school, High school and agricultural implement, regulated markets major cause of development and it is only due to the mining activities going on this region.

## **V. HIGH DEVELOPMENT REGION**

In 1991, seven villages namely *Padaur, Pali, Pipariya, Kikari Ponri, Harad, Kotmi* and *Sakola* fall under this categories while six villages viz *Jamuniha Padaur, Kikar – pond, Harad, sakola Deogawan* during 2001. These villages are leading in some of indicators like agriculture co-operative society, primary school and middle school, number of literacy of total population, use of agricultural implements and net shown area (Table 6). Besides these it seems that mining activities also play an important role in the development of the region.

## **VI. MEDIUM DEVELOPED REGION**

Six villages namely *Jamuniha, Latar, Parasi, Dhurvasin, Payari, and Daikhal* fall under these categories in 1991. Seven villages namely *Bhadra, Payari, Mauhari, Parasi, Dhurwasin, Daikhal, Pipariya* falls under this categories in 2001. (Table 6)

## **VII. LOW DEVELOPMENT REGION**

Two villages namely *Badra* and *Beliya* during 1991 and only one village namely *Latar* in 2001 fall under these categories. This group had the least rank score in many of the indicators. The low development can be also explained by the physical constraints of the roughed terrain, the less fertile soil and less rain fall area. (Table 6)

## **VIII. VERY LOW DEVELOPMENT REGION**

*Mauhari* in 1991 and *Beliya* in 2001 was very low development region. Demographic, social and economic indicators are responsible for this. (Table 6)

## **IX. CONCLUDING REMARKS**

No doubt mining activities have both type of impact have shown on this area. Positive impacts especially on the socioeconomic conditions of the people have increased many times but it is not equally distributed amongst the neighboring villages. In order to reduce or eliminate such regional disparities it is essential to pay attention to the regions of low development because population and society are dynamic factors of region. The villages that are highly developed in terms of their social, economic and demographic factors can also show significant growth and development in terms of optimum land use and agricultural efficiency. The reverse may be the case in those villages in which the regional infrastructure is poor. It is believed that the regional disparities- in this study based on 37 factors- can also have an indirect influence on the level of agricultural development (Nagraj 1997; Srivastav1983).

The ranks of all villages of Jamuna Kotma region with respect to each selected indicator and the total rank order scores of the levels of development is given in (Table 2, 3, 4 and 5). The standard deviation grouping technique is applied to divide the Jamuna Kotma region into very high, high, medium, low and very low developed regions based on combined rank scores of 37 indicators (Table 1).

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