

Impact Assessment of Mega CSR Projects Carried out at 06 Villages at Bhandara District

Report Prepared For



Report Prepared By



Surya Envirotech, Nagpur

September - 2020



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District**

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FOREWORD

M/s Bharat Heavy Electricals Limited, Power Sector-Western Region, Nagpur; has resolute to conduct “**Impact Assessment of Mega CSR Projects Carried out at 06 Villages at Bhandara District**” ” to identify the implementation of impact assessment for the study area.

In order to identify the impact assessment for the study area of the people for enhancement of their Quality of life; **M/s Bharat Heavy Electricals Limited, Power Sector-Western Region, Nagpur;** retained **M/s Surya Envirotech, Nagpur** to undertake Report for “**Impact Assessment of Mega CSR Projects Carried out at 06 Villages at Bhandara District**”.

The timely co-operation and assistance rendered by officials of **M/s Bharat Heavy Electricals Limited, Power Sector-Western Region, Nagpur,** is gratefully acknowledged.

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Chapter I

Introduction

Bharat Heavy Electricals Limited

1.0 Introduction

BHEL is one of the largest engineering and manufacturing companies of its kind in India engaged in design, engineering, construction, testing, commissioning and servicing of a wide range of products and services with over 180 product offerings to meet the ever-growing needs of the core sectors of economy.

BHEL was established in 1964 ushering in the indigenous Heavy Electrical Equipment industry in India. Heavy Electricals (India) Limited was merged with BHEL in 1974. In 1991, BHEL was converted into a public limited company. Over time, it developed the capability to produce a variety of electrical, electronic and mechanical equipment for all sectors, including transmission, transportation, oil and gas and other allied industries. However, the bulk of the revenue of the company is derived from sale of equipment for power generation such as turbines, boilers, etc. As of 2017, BHEL supplied equipment contributed to about 55% of the total installed power generation capacity of India. The company has also supplied thousands of Electric Locomotives to Indian Railway, as well as defence equipment such as the Super Rapid Gun Mount (SRGM) naval guns manufactured in partnership with the Indian Ordnance Factories and Defence Simulators to the Indian Armed Forces.

The impact of implementation of Mega Corporate Social Responsibility Project in the village viz. Andhalgaon, Warthi, Karadi, Sihora, and Taluka Pauni and Sakoli is assessed and come to conclusion to find out the quality of life of the study area. The assessment is done on the basis of satisfactory level of the villagers and citizens in regard of transportation, communication, health, education and infrastructural resource based development.

1.1 Objectives of the study

The study area selected by BHEL is undeveloped. The Authority of the BHEL wants India to be a developed country soon hence they had utilised there CSR Fund for development of backward area in Bhandara district. The development the area begins with Infrastructural Development, Communication and Transportation. The Authority of BHEL decided to construct concrete road in the study area. This road has become a life line of development for the beneficiary.

The objectives and methodology of the study were decided in the discussion of “Impact Assessment of CSR: Bhandara” Project coordinator of Surya Envirotech and Deputy Manager (HR) BHEL PSWR.

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This would have very advantageous impact on the people on the study area. For the assessment of this impact it would be of prime importance to acquire detailed and sound database to evaluate the subjective and objective quality of life. The infrastructural facilities like Cement concrete road were provided to the study area for the upliftment of the beneficiary under Corporate Social Responsibility scheme. The present study for Mega Project of Corporate Social Responsibility, is precisely undertaken with the following objectives:

- To prepare a demographic profile of the study area
- To assesses Existing Socio-Economic status of people in the study area
- To Identify and quantify nature of employment existing and future opportunities
- To assesses Quality of Life of people in the study area
- To evaluate infrastructure resource base, viz. medical, education, water resources, power supply
- To evaluate economic resource base, viz. agriculture, industries, forest, trade and commerce
- To evaluate health Status, viz. morbidity pattern with reference to prominent and endemic diseases (e.g. Covid – 19, Swain Flue, Dengue, Fluorosis, Malaria, Filarial)
- To evaluate cultural and aesthetic attributes in the study area including places of historical/ archaeological importance
- To evaluate occupational pattern, employment status and income category of people in the study area
- Quantification of economic resources, Health status, Cultural and Aesthetic attributes etc.
- To carryout impact assessment of CSR plan of the people in the study area

1.2 The study area

The present study area for the Mega Project of Corporate Social Responsibility at Bhandara district which comprises of two urban area of Sakoli as well as Pauni and four villages i.e. Andhalgaon, Warthi, Karadi in Taluka Mohadi and Sihora in Taluka Tumsar. The map showing villages under study area is shown in **Figure 1.1**.

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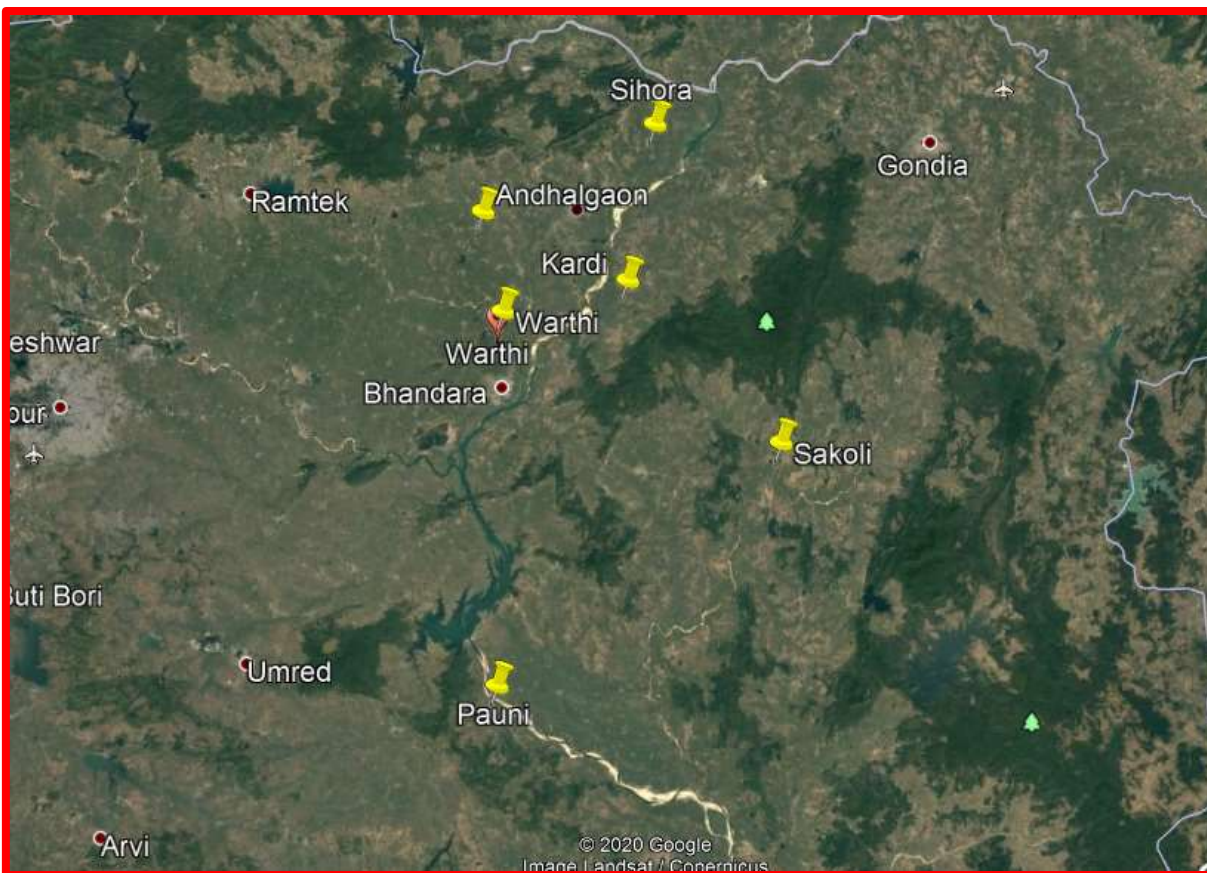


Figure 1.1 Study Area Map

Entire study area predominantly depends upon primary or secondary employment from agriculture, forest, and trade. Primary employment consists of direct employment in the activities like Agriculture, Forest, Trade and infrastructural development. In Sakoli there are few industries which gives direct employment to the people in the study area whereas the secondary employment is the employment through contractors in the study area or for completion of CSR work in the surrounding villages. Secondary employment even consists of house renting to migrants, vegetables and daily needs shops, local transportation, and dairy etc. in the study area.

Main crop cultivated in the study area comprises of Paddy, Wheat, Wari, Chana, Tur, Sugarcane and different seasonal vegetables as well as fruits.

1.3 Corporate Social Responsibility (CSR)

The concept of CSR in India is not new, the term may be. The process though acclaimed recently, has been followed since ancient times albeit informally. Philosophers like Kautilya from India promoted ethical principles while doing business. The concept of helping the poor and

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disadvantaged was cited in much of the ancient literature. In India, in the pre independence era, the businesses which pioneered industrialization along with fighting for independence also followed the idea. They put the idea into action by setting up charitable foundations, educational and healthcare institutions, and trusts for community development. The term CSR itself came in to common use in the early 1970s although it was seldom abbreviated. By late 1990s, the concept was fully recognized; people and institutions across all sections of society started supporting it. This can be corroborated by the fact that while in 1977 most of the corporate embraced CSR as an essential element in their organizational goals, and actively promoted their CSR activities in annual reports.

As a consequence of rising globalization and pressing ecological issues, the perception of the role of corporate in the broader societal context within which it operates, has been altered. Stakeholders today are redefining the role of corporate taking into account the corporate broader responsibility towards society and environment, beyond economic performance, and are evaluating whether they are conducting their role in an ethical and socially responsible manner. They use the term Corporate Social Responsibility to define organization's commitment to the society and the environment within which it operates.

The rationale for CSR has been articulated in a number of ways. In essence, it is about building sustainable businesses, which need healthy economies, markets and communities. The major reasons for CSR can be outlined as: Globalization. As a consequence of cross-border trade, multinational enterprises and global supply chains, there is an increased awareness on CSR concerns related to human resource management practices, environmental protection, and health and safety, among other things. Reporting on the CSR activities by corporate is therefore increasingly becoming mandatory. In an increasingly fast-paced global economy, CSR initiatives enable corporate to engage in more meaningful and regular stakeholder dialogue and thus be in a better position to anticipate and respond to regulatory, economic, social and environmental changes that may occur. There is a drive to create a sustainable global economy where markets, labour and communities are able to function well together and companies have better access to capital and new markets. Financial investors are increasingly incorporating social and environmental criteria when making decisions about where to place their money, and are looking to maximize the social impact of the investment at local or regional levels.

The corporate is also realizing that their reputation is intrinsically connected with how well they consider the effects of their activities on those with whom they interact. Wherever the corporate fail to involve parties, affected by their activities, it may put at risk their ability to create

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wealth for themselves and society. Therefore, in terms of business, CSR is essentially a strategic approach for firms to anticipate and address issues associated with their interactions with others and, through those interactions, to succeed in their business endeavours. The idea that CSR is important to profitability and can prevent the loss of customers, shareholders, and even employees is gaining increasing acceptance. Further, CSR can help to boost the employee morale in the organization and create a positive brand-centric corporate culture in the organization. By developing and implementing CSR initiatives, corporate feel contented and proud, and this pride trickles down to their employees. The sense of fulfilling the social responsibility leaves them with a feeling of elation. Moreover it serves as a soothing diversion from the mundane workplace routine and gives one a feeling of satisfaction and a meaning to their lives.

Corporate Social Responsibility (CSR) is a continuous commitment to behave fairly in contributing to the economic and social development, improving the quality of life of the workforce and peripheral development and also providing respectful treatment to the environment. Community or the society plays a very important role in the success of any organization. “Corporate Social Responsibility is the continuing commitment by industry to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large”. The primary focus should be on women, children and youth and below poverty line families for achieving overall sustainable development of the community.

Corporate Social Responsibility (CSR) policy must give special emphasis on triple bottom line – social, economic, cultural up-liftment and environmental initiatives to make it sustainable.

1.4 Corporate Social Responsibility (CSR) Policy

BHEL, a global engineering enterprise providing solutions for a better tomorrow, is committed towards holistic welfare of the society by undertaking CSR activities within the ambit of Schedule-VII of the Companies Act, 2013, as amended from time to time. However, thrust areas for CSR activities will be:

Inclusive India: - Mitigation of hunger and poverty through livelihood promotion/
Augmenting income generation, imparting vocational Skills

Healthy India: - Promoting health care including preventive health care and sports;

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Clean India: - Sanitation and making available Safe Drinking Water, Cleaning and preserving the Rivers, Clean surroundings; toilets in schools specially for girls;

Educated India: - Promoting education with thrust on informal education to reduce dropouts at primary school level, value education, digital education;

Responsible India: - Women Empowerment, Setting up old age homes, day care centre and such other facilities for senior citizens, Rural Development Projects and Slum Development Projects

Green India: - Ensuring environmental sustainability with emphasis on projects based on Solar Energy;

Heritage India: - Protection of national heritage, art and culture;

In the above thrust areas priority will be given to under privileged, neglected and weaker sections of the society. The company shall give preference to the local areas for spending at least 75 % of the amount earmarked for CSR activities. The remaining amount may be utilized beyond local areas. However, contribution made to the Central Government Schemes, where defining the area as well as the scope is not possible for the company will be excluded while arriving 75:25 ratio. It is desirable that CSR initiatives should be taken up in project mode, to the extent possible. However, it shall exclude any contribution made to the Central Government Schemes.

Periodic review of this policy shall be done to ensure its continued suitability, adequacy and efficacy.

CSR Overview of BHEL

Corporate Social Responsibility in BHEL is a continuing commitment to behave ethically and contribute to harmonious and sustainable development of society and planet through business, while improving the quality of life of the community and the society.

CSR is, therefore, the organization's commitment to operate in an economically, socially and environmentally sustainable manner, while recognizing the interest of its stakeholders.

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CSR Mission

To sincerely & effectively discharge company's responsibility in the identified CSR thrust areas and other areas listed out in the Companies Act, 2013.

Objectives

The objectives of this policy are:

- To define CSR projects or programs which BHEL plans to undertake and which fall within the purview of the Companies Act 2013, the Companies (CSR Policy) Rules, 2014 and the prevailing DPE Guidelines;
- Modalities of execution of such CSR projects or programs;
- Monitoring process of such CSR projects or programs;
- To make the stakeholders aware about CSR practices in BHEL.
- To work keeping in mind the larger objective of sustainable development in conduct of business and in pursuit of CSR agenda.

1.5 Impact Assessment of CSR Action Plan in the Study Area

The management of Bharat Heavy Electricals Ltd, BHEL had started implementation of CSR in the study area for the upliftment of the villagers to enhance their Quality of Life. According to need base analysis the CSR Action Plan is implemented in the study area from 2014. The amount budgeted for CSR implementation is **Rs. 2,98,42,820.00 (Rs. Two corers Ninety Eight Lakhs Forty Two Thousand Eight Hundred and Twenty Only)** as per the company policy. The impact assessment is done by comparing Quality of Life of study area before and after implementation of CSR Action Plan.

1.6 Methodology

The study team keeping the objectives of Impact assessment of corporate social responsibility (CSR) in view has used a variety of data collection methods. The study of such nature requires a primary household survey. However for the limited purpose of CSR study the team collected data from two sources. Firstly, household survey of the project affected people of the study area, Secondly local offices as well as non-official source. Secondary Data from Government offices has been also collected to evaluate the quality of life of villages considered

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for survey by the management of BHEL. The methods applied for the data collection comprise of structured questionnaire, in depth interviews and focus group discussion.

The team went in each village at different days to conduct focused group discussions (FGD) of the villagers. Each of these FGDs comprises different group of Panchayat members, school teachers, leaders of informal / formal organization & village representatives. Each of the FGDs has very extensive lasting for at least 2 to 3 hours of duration. Besides, a keen personal observation of the team was a part of CSR. Moreover, secondary sources of data comprised various government department (local & district level) and project authorities.

Chapter II

Demographic profile of the Study Area

2.0 Socio-economic Environment

The study of socio-economic environment incorporating various facets related to prevailing social & cultural conditions and economic status of the project region is an important part of the study. The socio-economic study in the present case includes demographic structure, population dynamics, infrastructure resources, status of human health and economic attributes like employment, per-capita income, agriculture, trade, industrial development etc. in the project region.

The aesthetic component of environmental study refers to the scenic value if any in the study area, tourist attraction, and wildlife, historic and cultural monuments. The study of these parameters helps in identification, prediction and evaluation of likely impacts on socioeconomics and parameters of human interest due to proposed project.

2.1 Baseline Status

To assess impact on socio-economic environment, it is essential to collect the following data:

- Demographic structure of the study area male/female ratio, occupational pattern, employment and income
- Infrastructural resource base, viz. medical, education, water resources, power supply
- Economic resource base, viz. agriculture, industries, forest, trade and commerce
- Health Status, viz. morbidity pattern with reference to prominent and endemic diseases
- Socio economic status with reference to Quality of Life Cultural and Aesthetic attributes in the study region including places of historical/archaeological importance.
- Assessment of impacts on places of historical/ archaeological importance and aesthetic impairment
- Awareness, opinion and expectation of the people from BHEL.

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All the aforesaid social parameters have been used for identification, prediction and education of significant impacts modelling of environmental quality has also been undertaken to predict the impacts due the existing and proposed activities in the region.

2.1.1 Demographic Structure

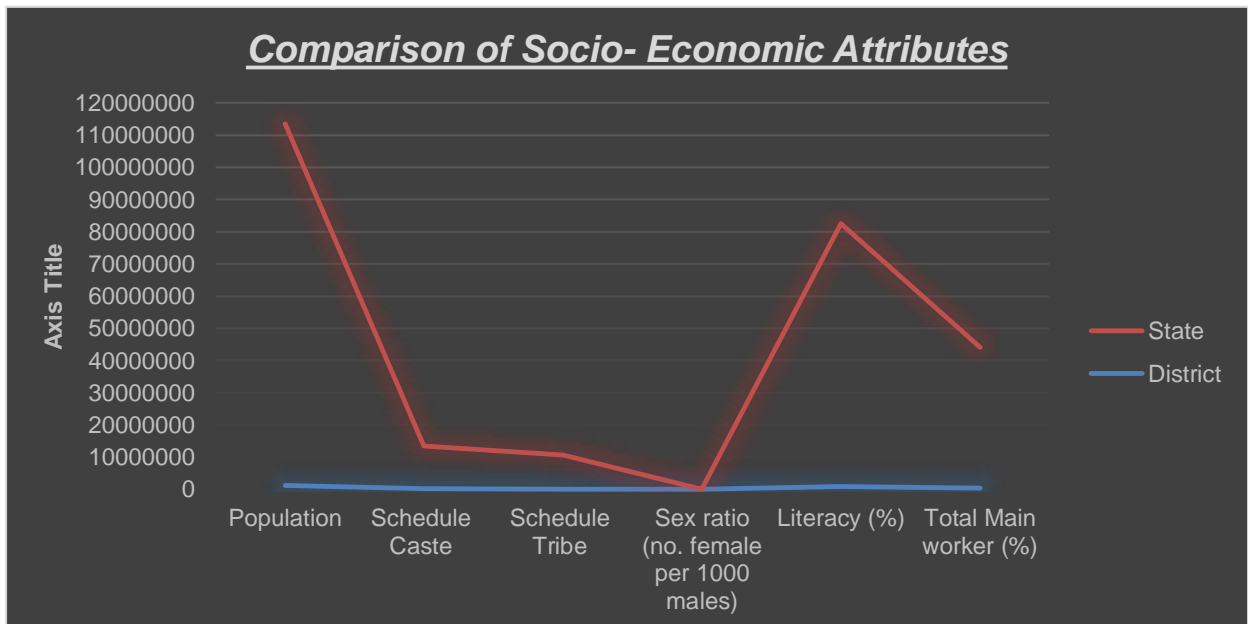
The study area comprises of 06 villages from Bhandara District of Maharashtra.

Comparison of Socio- Economic Attributes of the area with Bhandara district and state is as follows:

Table 2.1
Demographic Structure

| Particulars | District | State |
|---------------------------------------|----------------|-------------------|
| Population | 1200334 | 112374333 |
| Schedule Caste | 200372 (16.7%) | 13275898 (11.81%) |
| Schedule Tribe | 88886(7.40%) | 10510213 (9.35%) |
| Sex ratio (no. female per 1000 males) | 982 | 929 |
| Literacy (%) | 899860 (75%) | 81554290 (72.57%) |
| Total Main worker (%) | 413838 (34.4%) | 43762890 (43.98%) |

Source: District Census, Maharashtra, 2011



Graph No. 2.1 Comparison of Socio-Economic Attributes

2.1.2 Demographic Details

The summary of demographic data based on district census, Maharashtra 2011 and primary data collection during survey, the enhanced population till 2020 is collected from Gram Panchayat offices with reference to total area, household, population, density, sex ratio and literacy is presented in **Table 2.1** and demographic data at a glance are presented in **Table 2.3**.

The significant demographic features of rural & urban area

Total population of the study area as per 2011 census is 67,251 out of which 33,927 are male and 33,264 are female.

- Total number of households in the study area about 15560
- Sex ratio (number of male per thousand female) in the study area is 980 this shows that male population is higher in the region as compared to the female population
- Out of the total population Scheduled Caste and Scheduled Tribe population is about 19.18 % and 5.98 % respectively
- Total main worker population is about 27.62 %, 12.69 % comes under marginal worker category and 59.68 % belongs to non-workers category
- Literacy rate of the population in the study area is about 79.13%

2.1.3 Infrastructure Resource Base

The infrastructure resources base of the study area with reference to education, medical facility, water supply, post and telegraph, transportation and communication facility and power supply etc. is presented in **Table 2.6**. The infrastructure resources details have been abstracted from village Directory CD 2011 of Maharashtra & Goa State and are described below:

Education: Educational facilities are available in most of the villages in the study area. Literacy rate of the study area is quite good that is about 79.13%. Primary, Middle and Higher schools are available in all the villages. College facility is available in Warthi, Sakoli and Pauni. For higher education the children of the study area travel to either Bhandara or Nagpur near the Project area. Female literacy is progressive as the people's attitude regarding female education is good.

Drinking Water: The water supply in the study area is mostly through gram panchayat water supply scheme. For extra use people use well water in few villages due to water scarcity.

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The water for drinking purpose is supplied but not in sufficient quantity. People complaints about quality of drinking water in some villages and respective Panchayats have not taken any steps to treat it.

Communication and Transportation: Transportation facility in the villages is satisfactory. Bus service is available in all villages. Warthi and Sakoli is connected with railway. The roads condition is good but not at the satisfactory level. Most of the villages have the communication facilities i.e. post office, now a day all most all people have their own Mobile and Private telephone connections.

Power Supply: Almost all villages are electrified in the study area and electricity is available for domestic & agricultural purpose in all the villages. The people complaint about load shading for 16 hours for agricultural connections.

Medical/Primary Health Care: Medical facilities in terms of; Primary Health Centre is available at all villages and Rural hospitals in tehsil places viz. Sakoli and Pauni in the study area. Community Health worker & doctors visit villages periodically & provide health facilities to the people. Vaccination & health camps are also organized by PHC to aware the people about family planning, hygiene, epidemic & health care.

2.1.4 Economic Attributes

Economy of the study area is mainly based on the activity other than agriculture. 20 % population is engaged in these other activities. The major crop grown in the study area is Paddy, Chana, Wheat and Tur. The average monthly income of the villagers lies approximately in the range of Rs. 15000 to 20000.

Work: Work may define as participation in any economically productive activity; such participation may be physical or mental in nature. Work involves not actual work but also effective supervision and direction of work. It also includes unpaid work on farm or in family enterprise.

The workers coming under the main and marginal workers category are; Cultivators, agricultural labours, live-stock, forestry, fishing, and plantations, orchards and allied activities, mining and quarrying, manufacturing, processing, servicing and repairs in household industry, construction trade and commerce, transport, storage and communication, other services. The employment pattern of the study area is described below and presented in **Graph 2.7**

- Main worker population is 18575 (27.62 %)

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- People in the study area are mostly engaged in activities such as persons engaged in bricks making, work in rice mill, constructions, trade and commerce, transport, storage and communications, business and service.
- Cultivators i.e. a person engaged in cultivation of land owned or held from government or from private persons or from institutions by payment in money, kind or share are only 24% engaged in agriculture activity
- Unemployment level is high in the study area as non-worker population shares more than half of the total population in the 40140 (59.68 %). Non-worker population includes student, household duties, dependent, pensioner, beggar and others.

2.1.5 Health Status

Health of the people is not only a desirable goal, but is also an essential investment in human resources. As per the National Health Policy (1983), Primary Health Care has been accepted as main instrument for achieving this goal of development and strengthening rural health infrastructure through a three-tier system, viz., Primary Health Center (PHCs), Sub Centre and Community Health Centre, which have been established. Lack of building, shortage of manpower and inadequate provision of drug supplies are hampering the operationalization of these units. The standards to be met according to National Health Policy are given below:

Table 2.2
Health Status

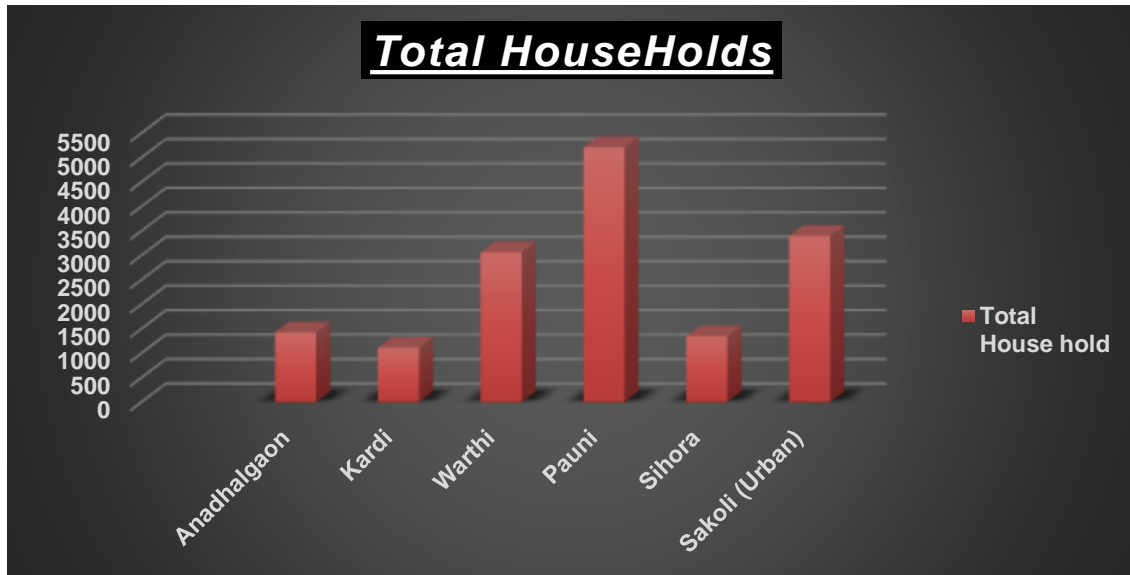
| Population | Infrastructure | Personnel |
|---------------|----------------|---------------------------------|
| 3,000-5,000 | 1 Sub Center | 1 ANM (Auxiliary Nurse Midwife) |
| 25,000-30,000 | 1 PHC, 6 Beds | 2 Medical Officers |
| 1,00,000 | Rural Hospital | Medical Superintendent |

During discussion with the Nurses of PHCs of the study area, it has been revealed that the general prevailing diseases in the study area are Gastroenteritis, Diarrhoea, Hypertension, Fever, Dengue, Chicken Guinea and Malaria. Epidemical diseases like Covid 19, Swine Flu, Cholera, Measles has increased in the study area during the season of tourism. The diseases prevailing in the study area may be due to the increased water pollution and the unsanitary conditions. The information regarding birth rate, death rate and infant mortality rate is shown in **Table 2.4**.

Table 2.3
Demographic Structure of Study Area; Year 2011

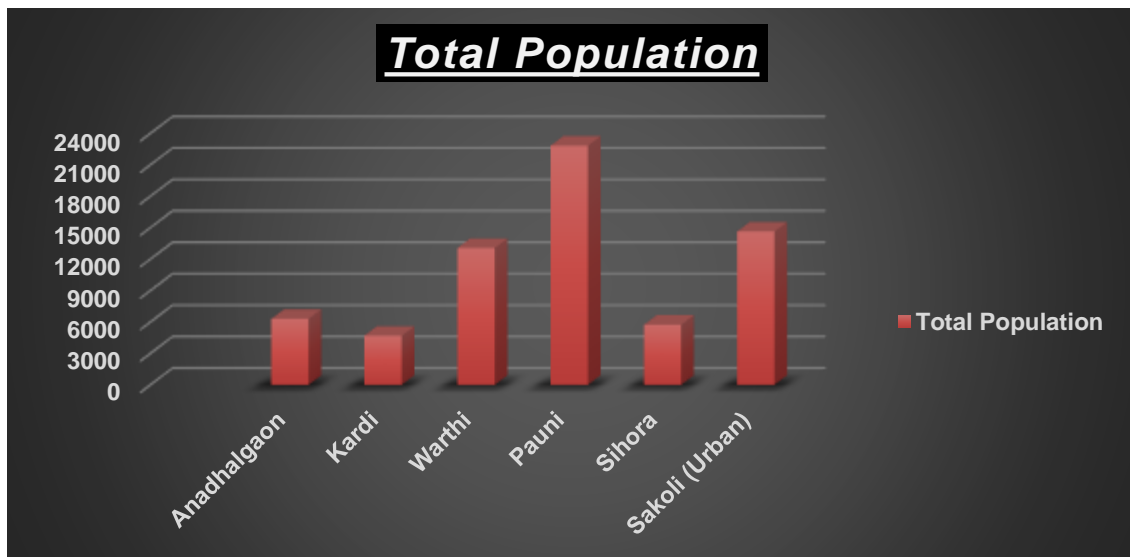
| Sr. No. | Villages | No. of House hold | Population | | | Schedul e Cast (SC) | Schedul e Tribes (ST) | Literates | Illiterate | Main Worker | Marginal Workers | Non Worker |
|---------|----------------|-------------------|------------------|-------|-------|---------------------|-----------------------|-----------|------------|-------------|------------------|------------|
| | | | Total Population | M | F | | | | | | | |
| 1 | Anadhalgaon | 1425 | 6309 | 3171 | 3138 | 559 | 1544 | 4900 | 1409 | 2304 | 599 | 3406 |
| 2 | Kardi | 1113 | 4684 | 2364 | 2320 | 501 | 38 | 3631 | 1053 | 1074 | 1150 | 2460 |
| 3 | Warthi | 3065 | 13058 | 6629 | 6429 | 3665 | 265 | 10541 | 2517 | 3486 | 938 | 8634 |
| 4 | Pauni | 5213 | 22821 | 11514 | 11307 | 3674 | 907 | 17675 | 5146 | 6090 | 3138 | 13593 |
| 5 | Sihora | 1347 | 5743 | 2857 | 2826 | 603 | 365 | 4383 | 1360 | 1702 | 766 | 3275 |
| 6 | Sakoli (Urban) | 3397 | 14636 | 7392 | 7244 | 3901 | 908 | 12088 | 2548 | 3919 | 1945 | 8772 |

Source: District Census, Maharashtra, 2011



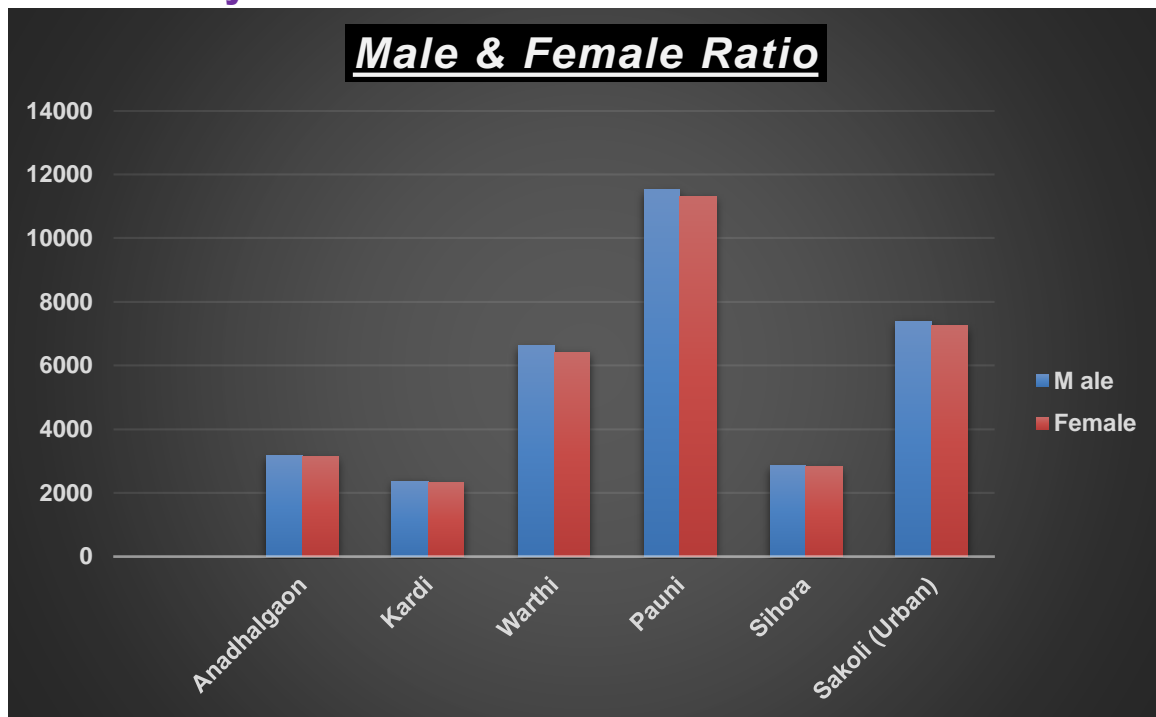
Graph No. 2.2: Total Households

The number of house hold in study area is with reference to the population in that specific village. The lowest percent of households is at Kardi village i.e. 7.1% as compared to total number of households in study area while in Warthi, it is 19.69 %. Study area comprises of two urban area viz. Pauni as well Sakoli and the share of households is 33.50% and 21.83% respectively.



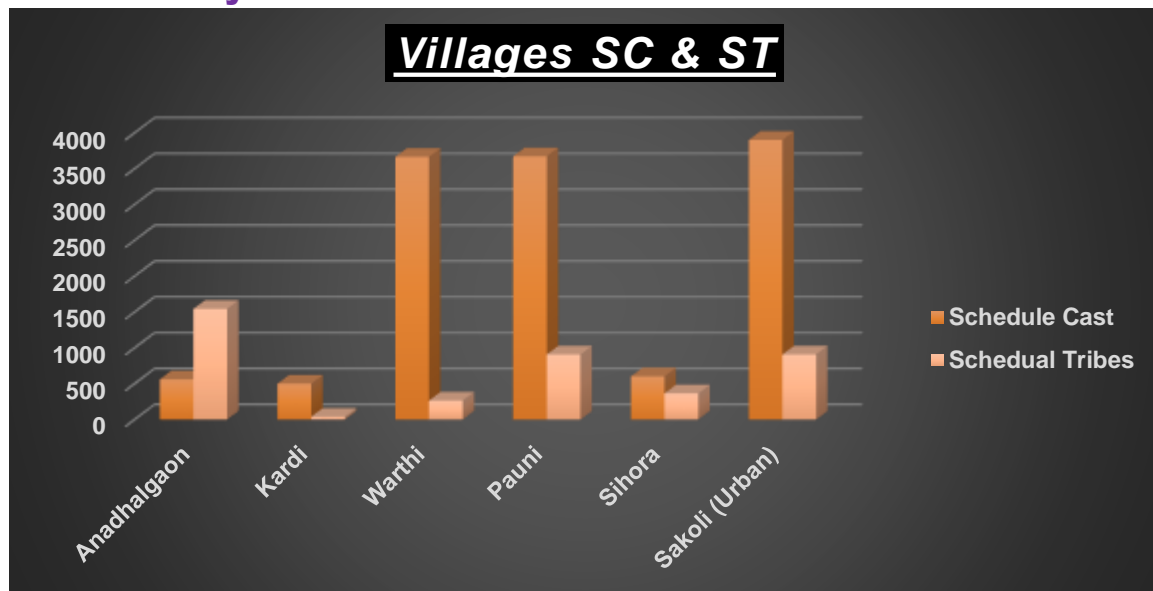
Graph No. 2.3: Total Population

The population in Kardi is lowest where as in Warthi is Highest in all the Gram panchayat of study area. In urban population Pauni is highest.



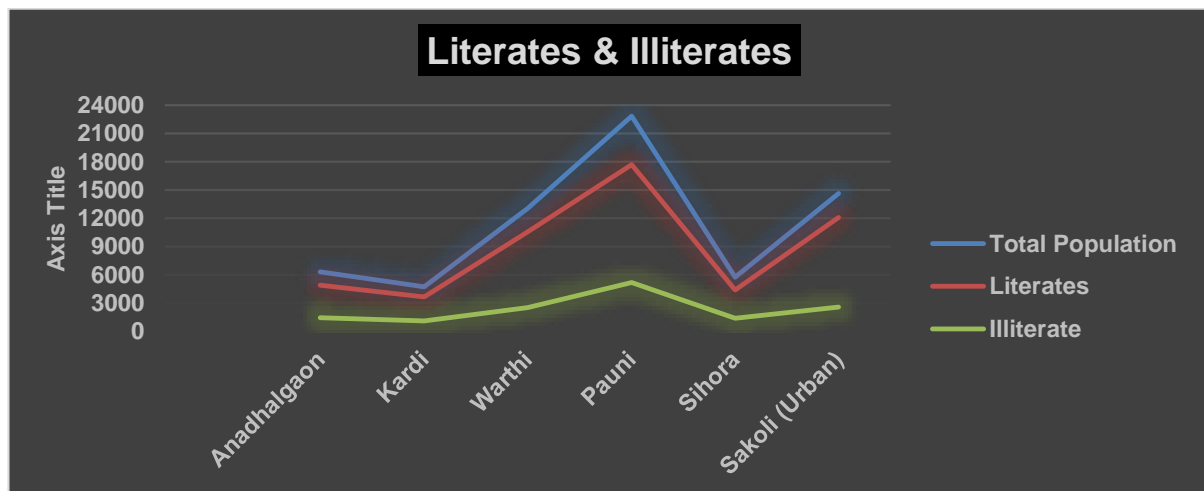
Graph No. 2.4: Male & Female Ratio

The Sex Ratio is very important attribute in the census study because it is responsible for aesthetic and cultural balance in society. The overall Sex Ratio in the study area is 980 female per in thousand male which must be enhanced. The census study of study area tells that highest Sex Ratio is 989 female per in thousand male in village Sihora and Andhalgaon. The lowest Sex Ratio observed in village Warthi i.e. 969 female per in thousand male. In the urban area viz. Pauni is 982 female per in thousand male where as in Sakoli 979 female per in thousand male. The awareness companied “Beti Bachao and Beti Padhao” shall be carried out repeatedly in study area.



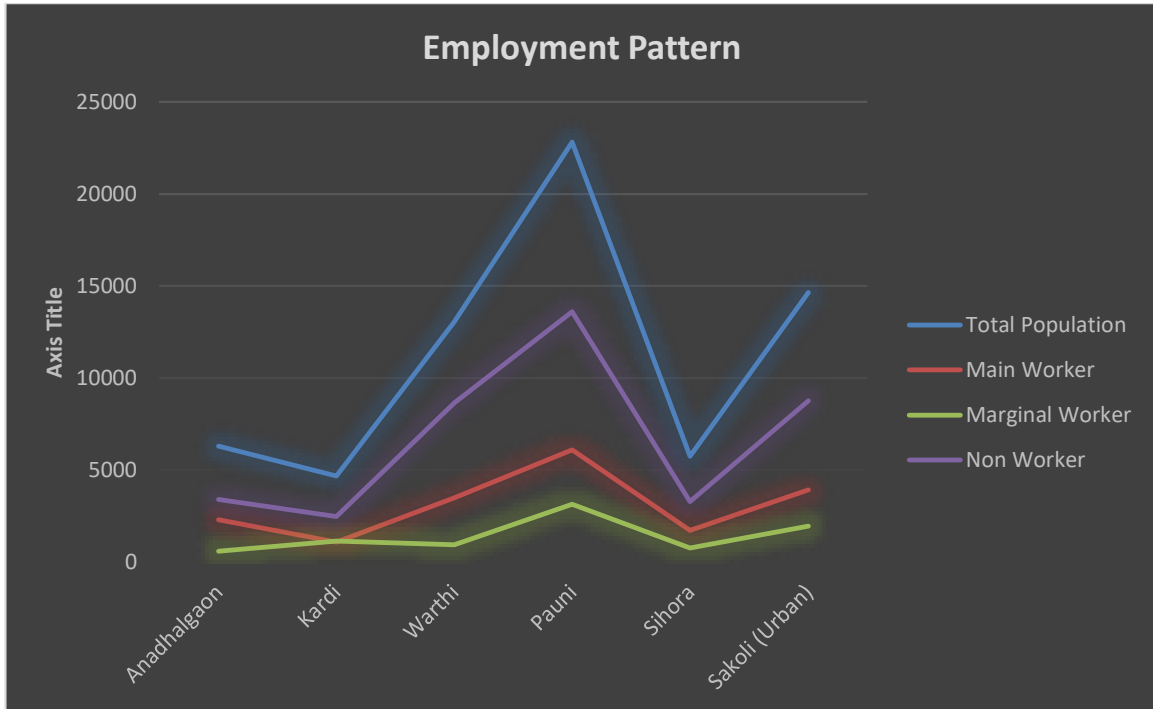
Graph No. 2.5: Schedule Cast & Schedule Tribes

The population of Schedule Caste is more than as compare to Schedule Tribes in the study area. The difference is because the Schedule Tribes are migrating in nature. The study area was dominated with the population of weaver community in previous census which is now migrated to Gujarat as per the response of respondent.



Graph No. 2.6: Literates & Illiterates

The Literacy rate with respect to population is one of the important attribute to evaluate quality of life of the village in the study area. The highest Literacy rate is 66% at village Warthi whereas lowest is 52% at village Kardi. The Urban Area comprises of Pauni and Sakoli have Literacy rate 59.5% and 59.9% respectively.



Graph No. 2.7: Employment Pattern

It is concluded that the Employment Patten varies with respect to total population in the study area.

Table 2.3
Demography at a Glance within the Study Area

| Sr. No. | Demographic parameters | Details |
|---------|--------------------------------------|----------------|
| 1. | Number of villages | 06 |
| 2. | Total no. of residential households | 15560 |
| 3. | Total population | 67251 |
| 4. | Scheduled caste % | 12903 (19.2%) |
| 5. | Scheduled tribe % | 4027 (5.98%) |
| 6. | Sex ratio (female per thousand male) | 980.5 |
| 7. | Literates (%) | 53218 (79.13%) |
| 8. | Main workers (%) | 18575 (27.62%) |
| 9. | Marginal workers (%) | 8536 (12.69%) |
| 10. | Non workers (%) | 40140 (59.68%) |

Source: Primary Census Abstract CD-2011, Nagpur District Maharashtra State.

Table 2.4
Mortality rate of the Study Area

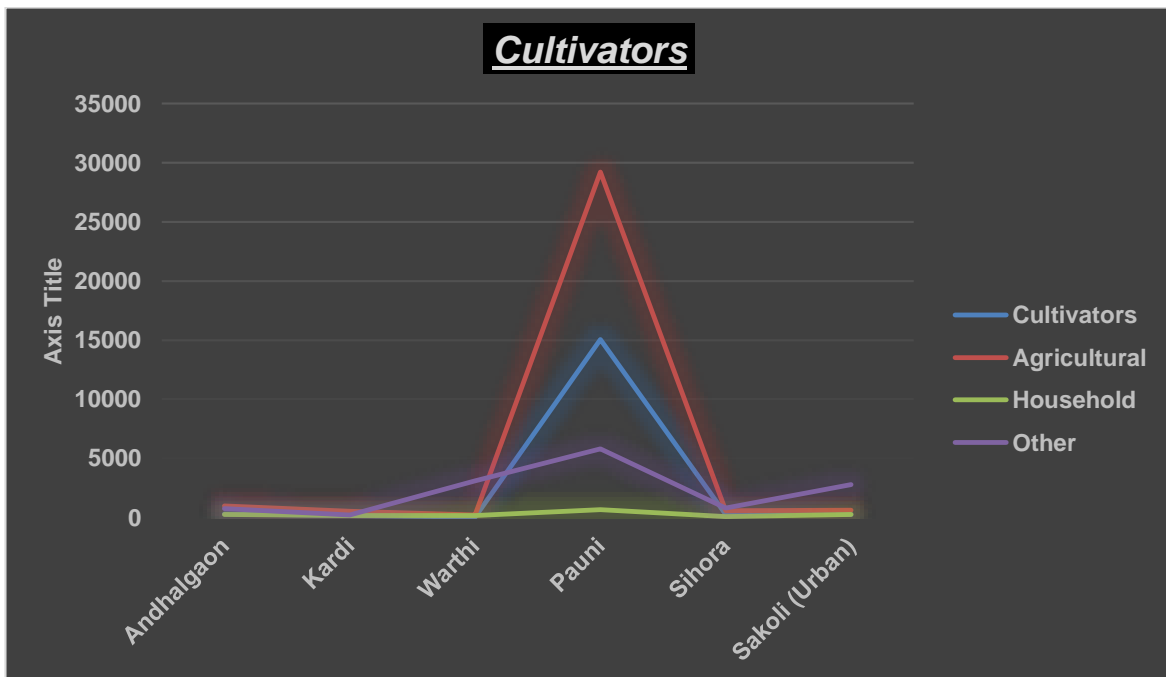
| Sr. No. | Mortality Rate | 2019 |
|---------|-----------------------|--------------|
| 1 | Birth | 1144 (1.70%) |
| 2 | Death | 693 (1.03) |
| 3 | Infant Mortality Rate | 07 (0.01 %) |
| 4 | Mother Mortality Rate | 0 |
| | Total | 1844 |

Source: PHC, District Bhandara

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Table 2.5
Cultivators

| Sr. No. | Villages | Cultivators | Agricultural | Household | Other |
|---------|----------------|--------------|--------------|-------------|--------------|
| 1 | Andhalgaon | 318 | 966 | 264 | 756 |
| 2 | Kardi | 185 | 537 | 152 | 200 |
| 3 | Warthi | 28 | 210 | 152 | 3096 |
| 4 | Pauni | 623 | 1660 | 228 | 3579 |
| 5 | Sihora | 254 | 567 | 83 | 798 |
| 6 | Sakoli (Urban) | 270 | 609 | 245 | 2795 |
| | Total | 16619 | 32089 | 1576 | 13435 |



Graph No. 2.8: Cultivators

Table 2.6
Infrastructure Resource Base of the Study Area

| Sr. No. | Villages | Educational Institutions | Medical Facilities | Drinking Water Supply | Communication | Transportation | Approach Road | Power Supply |
|----------------|-----------------|---------------------------------|---|------------------------------|----------------------|-------------------------|----------------------|---------------------|
| 1 | Anadhalgaon | P, MS, PUC, AC, C | PHC, RMP, CHW, H, MCW | T, HP, W, SS-T | PO, PTO, PH | BS, RS (5-10), NW (10+) | PR | EA |
| 2 | Kardi | P, M, S, PUC, AC, C | DA, PHC, PHS, RMP, CHW, H(10+), MCW (10+) | T, HP, W, SS-T | PO, PTO, PH | BS, RS (10+), NW (10+) | PR | EA |
| 3 | Warthi | P, M, s, PUC, AC, C | DH, PHC, PHS, RMP, CHW, H, MCW | T, HP, W, SS- T | PO, PTO, PH | BS, RS, NW (10+) | PR | EA |
| 4 | Pauni | | | | | | | |
| 5 | Sihora | P, M, S, PUC, AC, C | DH, PHC, RMP, CHW, H(10+), MCW(10+) | T, HP, W, SS- T | PO, PTO, PH | BS, RS, NW (10+) | PR | EA |
| 6 | Sakoli | P, M, S, PUC, AC, TR, C | HDA, DH, PHS, RMP, CHW, MCW, PHC(5-10) | T, HP, W, SS-T | PO, PTO, PH | BS, RS (5-10), NW (10+) | PR | EA |

Source: Primary Census CD 2011, Dist. Nagpur Maharashtra

Abbreviations**Educational Institution**

| | | |
|-----|---|-------------------------|
| P | = | Primary School |
| M | = | Middle School |
| H | = | High School |
| S | = | Secondary School |
| PUC | = | Senior Secondary School |
| C | = | College |

Medical Facilities

| | | |
|------|---|------------------------------------|
| MH | = | Maternity Home |
| MC W | = | Maternity and Child Welfare Centre |
| PHS | = | Primary Health Sub Centre |
| CH W | = | Community Health Worker |
| RMP | = | Registered Medical Practitioner |
| HU | = | Unani hospital |

Drinking Water Sources

| | | |
|------|---|---------------------|
| T | = | Tap Water |
| TK | = | Tank Water |
| HP | = | Hand pump |
| TW | = | Tube well Water |
| SS-W | = | Summer Source Water |
| W | = | Well |
| R | = | River |

Communication Facilities

| | | |
|-----|---|---------------------------|
| PO | = | Post Office |
| TO | = | Telegraph Office |
| PTO | = | Post and Telegraph Office |
| PH | = | Telephone |

Power Supply

| | | |
|-----|---|----------------------------------|
| EA | = | Electricity for all purpose |
| EAG | = | Electricity for Agriculture |
| ED | = | Electricity for Domestic Purpose |

Transportation Facilities

| | | |
|----|---|-----------------|
| BS | = | Bus Service |
| RS | = | Railway Service |

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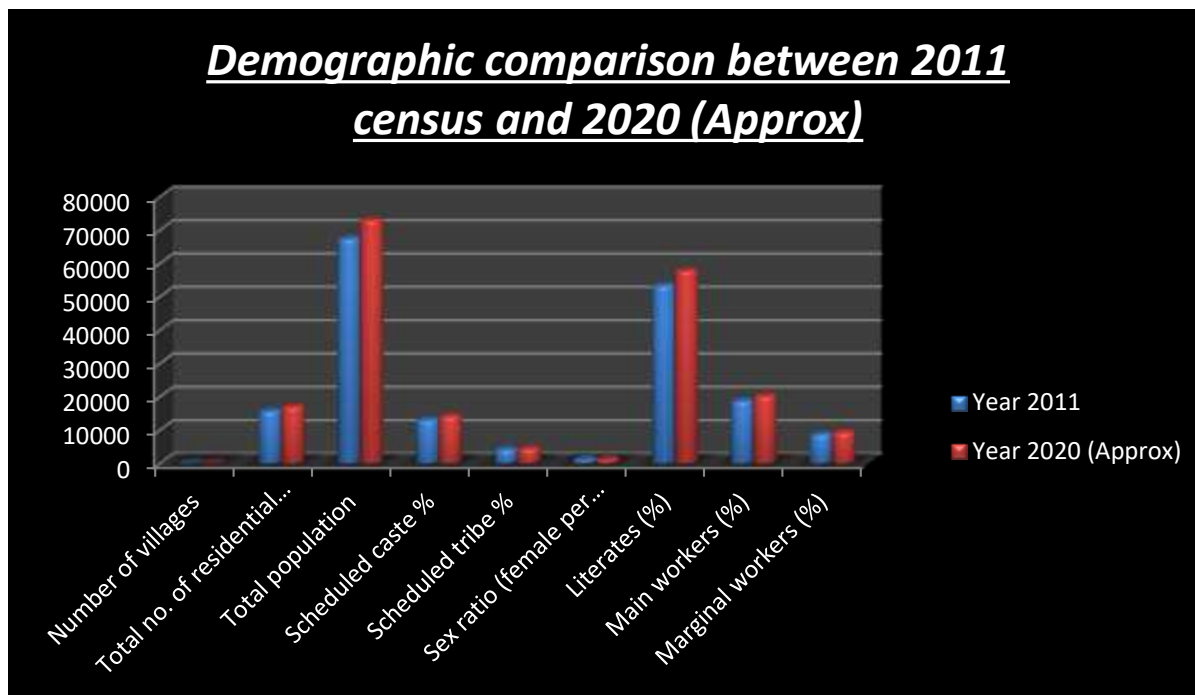
Approach Road

| | | | | | |
|-----|---|------------------------|----|---|-------------|
| DA | = | Allopathic Dispensary | PR | = | Pucca Road |
| HC | = | Health Centre | KR | = | Kuccha Road |
| PHC | = | Primary Health Centre | MR | = | Mud Road |
| FWC | = | Family Welfare Centre | | | |
| TB | = | T.B. Clinic | | | |
| H | = | Allopathic Hospital | | | |
| DU | = | Unani Dispensary | | | |
| DH | = | Homeopathic Dispensary | | | |

Table 2.7**Demographic comparison between 2011 census and 2020 (Approx)**

| Sr. No. | Demographic parameters | Year 2011 | Year 2020 (Approx) |
|---------|--------------------------------------|-----------|--------------------|
| 1. | Number of villages | 06 | 06 |
| 2. | Total no. of residential households | 15560 | 16873 |
| 3. | Total population | 67251 | 72926 |
| 4. | Scheduled caste % | 12903 | 13992 |
| 5. | Scheduled tribe % | 4027 | 4366 |
| 6. | Sex ratio (female per thousand male) | 980 | 989 |
| 7. | Literates (%) | 53218 | 57709 |
| 8. | Main workers (%) | 18575 | 20142 |
| 9. | Marginal workers (%) | 8536 | 9256 |
| 10. | Non workers (%) | 40140 | 43527 |

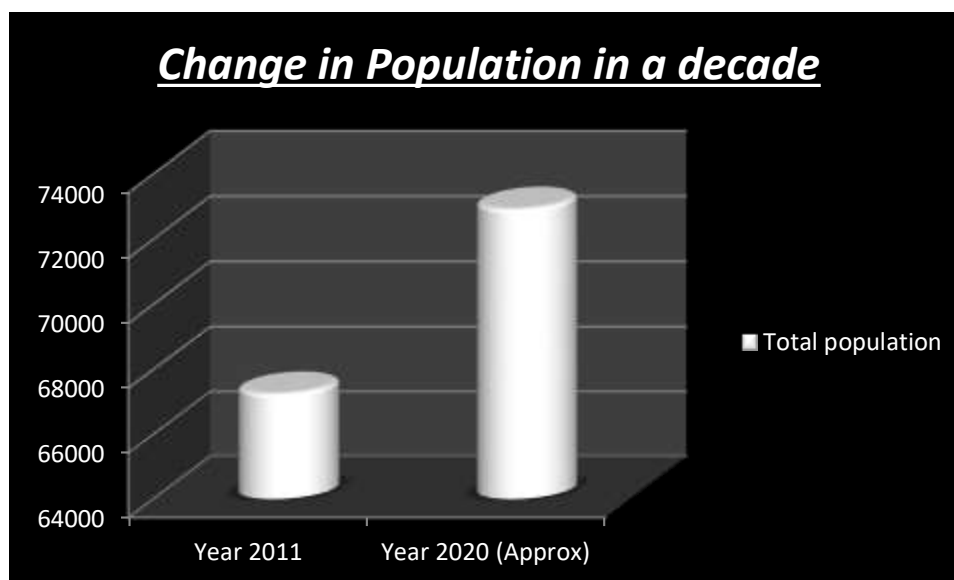
Source: Primary Census Abstract CD-2011, District Bhandara, State Maharashtra and information collected during primary survey.



Graph No. 2.9: Demographic comparison between 2011 census and 2020 (Approx)

2.2 Demographic Comparison between 2011 Censes & 2020 (Appox.)

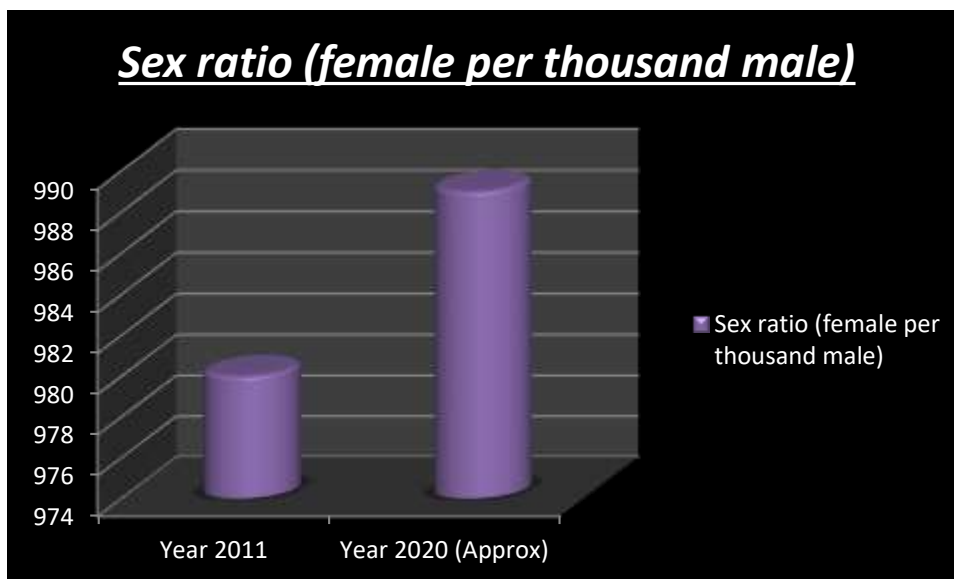
To assess the enhancement in Quality of life in Two decades, it is necessary to compare it on demographic profile basis of the study area. The comparison is done considering censuses data of 2011 and 2020 (Appox.) primary data collected.



Graph No. 2.10: Change in Population in a decade

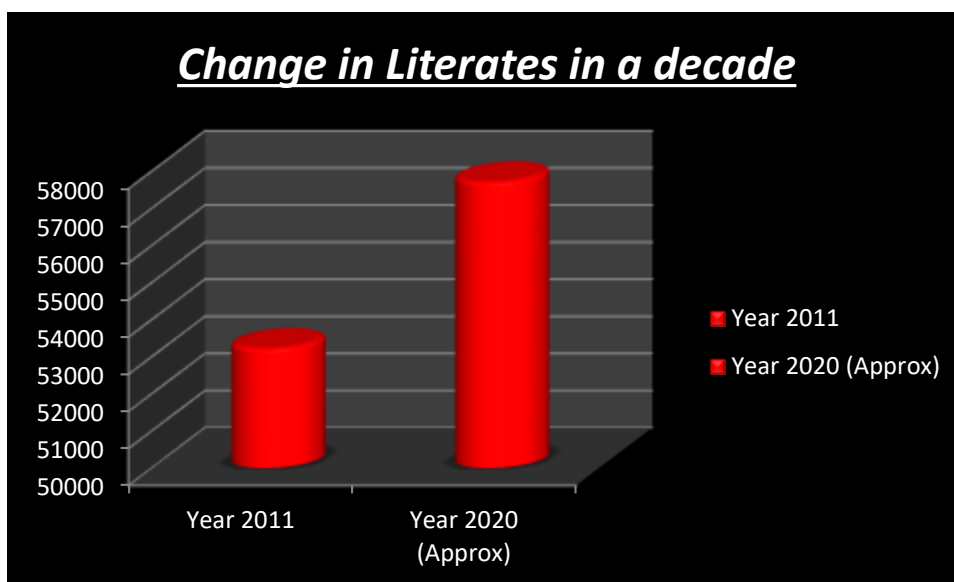
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There is enhancement of Population in the study during the past decade by 5675 and is shown graphically in **Figure 2.10**. During the survey respondent informed our survey team members that there is no revenue generating opportunities in Kardi, Andhalgaon, Pauni and Sihora.



Graph No. 2.11: Change in Sex ratio (Female per thousand Male) in a decade

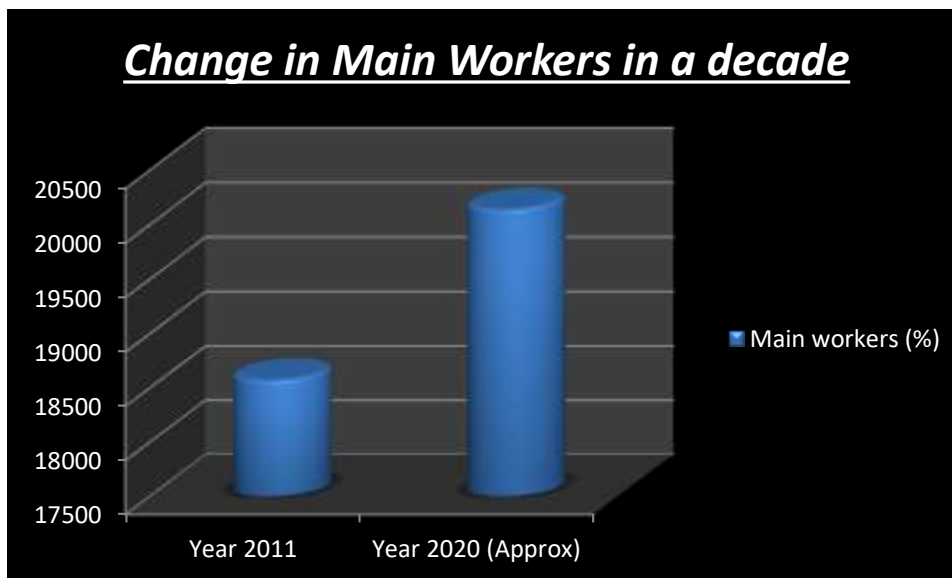
The observation is progressive with regard of sex ratio in the study area comparing in decade the Sex Ratio is increased by 9 these is good results of scheme is " Beti Bachao and Beti Padhao".



Graph No. 2.12: Change in Literates in a decade

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The survey team observed during survey that the Sakoli is educational hub in the study area. This helps in enhancing literacy rate in the decade.

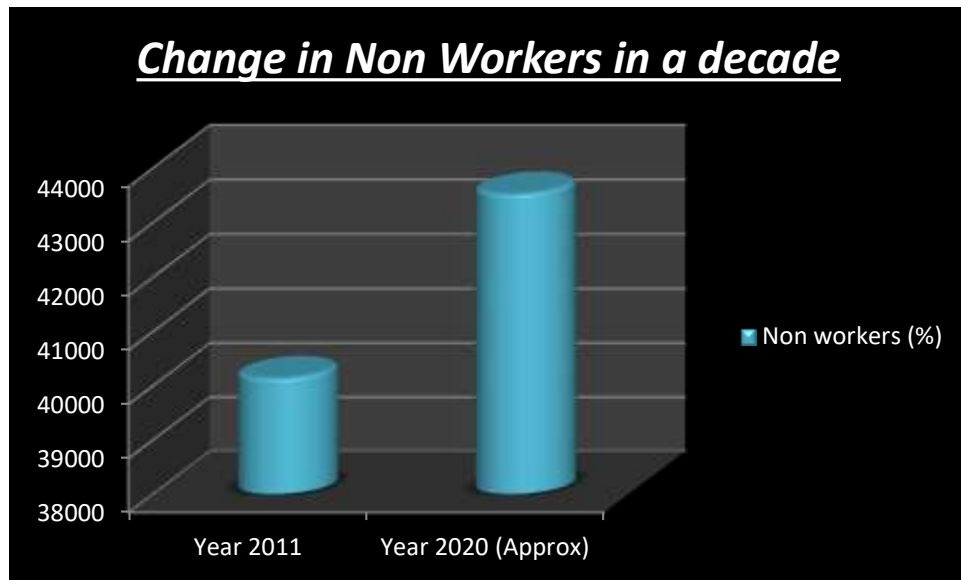


Graph No. 2.13: Change in Main Workers in a decade



Graph No. 2.14: Change in Marginal Workers in a decade

The Main and Marginal worker in the study area increased with respect to population but it observed that working nature of Main worker is changed due to literacy. The work style and life style has improved in positive sense.



Graph No. 2.15: Change in Non Workers in a decade

Chapter III

Socio-economic Survey

3.0 Socio-Economic Survey

3.1 Sampling Method

A judgmental and purposive sampling method was used for choosing respondents of various sections of the society i.e. sarpanch, adult males and females, teachers, medical practitioners, businessmen, agriculture labourers, fishermen, unemployed group etc. Judgmental and purposive sampling method includes the right cases from the total population that helps to fulfill the purpose of research needs. Observations are restricted to this group & conclusions from these observations are generalized to the total population. Judgment or purposive sampling is very precarious, because a must & stronger assumption can be made about the population and sampling procedure than required while employing probability sampling.

3.2 Data Collection Method

In order to assess and evaluate the likely impacts arising out of for any area on socio-economic environment, it is necessary to gauge the apprehensions of the people in the project area. For the process of data collection through primary and secondary sources certain methods are used among that are:

3.2.1 Field Survey and Observations

Field survey and observations are made at each sampling village and the quality of life of that region was studied. Visits were made at hospitals, primary health centres and sub-centres to know the health status of the region. Various governmental organizations such as statistical department, department of census operations were visited to collect the population details of that region.

3.2.2 Interview Method

Structured interview method was used to collect data regarding the awareness and opinion from the sample selected of the various socio- economic sections of the community. Structured interviews involve the use of a set of predetermined questions that includes fixed and alternative questions.

The questionnaire mainly highlights the parameters such as income, employment and working conditions, housing, food, clothing, water supply, sanitation, health, energy, transportation and communication, education, environment and pollution to assess the quality of

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life of that particular region and general awareness and opinion of the respondents about the project.

The interview method has the advantage that almost all perfect sample of the general population can be reached and respond to the approach. Interview method helps to collect more correct and accurate information as the interviewer is present during the field survey.

Socio-economic survey was conducted in 4 villages 2 cities within the study area with reference to the project region.

The respondents were asked for their awareness/opinion about the region and also of their opinion about the impacts of BHEL CSR Mega Project, which is an important aspect of socio-economic environment, viz. job opportunities, education, health care, housing, transportation facility and economic status.

The salient observations recorded during survey in the study area:

- Majority of the respondents are engaged in activities other than agriculture while near about ¼th of the population are engaged in agricultural and its allied activities. The main crop grown in the study area is Paddy, Vari, Chana, Tur, Wheat etc.
- Sanitation facilities in the study area were not proper. There are few open and few close drains from where the domestic waste water is disposed. People are now becoming aware and careful about hygiene and cleanliness due to pandemic, this has resulted in increase of health status in the area
- Power supply facility is available in all the villages and town in the study area mostly for domestic purpose and few for agriculture also
- Drinking water sources is mostly from overhead tanks constructed by Gram Panchayat or Nagar Parishad. As regard to the drinking water facility people expressed that the quality of water is portable
- A medical facility in terms of primary health centre is available in the entire 04 village in the study area and rural hospitals in both the talukas. Doctors and nurses are available in the PHCs and RH but in the period of Pandemic more strength is needed as per the response of nurse present in the hospitals
- Transportation facility was found satisfactory in the study area and road conditions are good. Frequency of public transport facility however remains deficient

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- Almost all the people in the study area are benefited with Pradhan Mantri Ujwala Gas Yojana and use LPG as a main source of fuel cooking purpose
- Sufficient communication facility is available in the study area
- Educational facilities are available in the form of primary, middle, high schools and Junior College. In some places, it is extended up to Graduation and Post-Graduation. For higher studies people avail the facility present in Bhandara or Nagpur.

3.3 Village Information of Study Area

As per the definition, the study areas consist of 04 villages and 02 cities, in Bhandara District, the villages and Cities which are identified for the survey:-

Andhalgaon, Warthi, Kardi and Sihora are in Taluka Mohadi and Tumsar respectively whereas Sakoli and Pauni tehsil are in the Bhandara District. As per the survey, the main language in the study area is **Marathi**.

All surveyed 04 Gram-panchayat, 03 villages have female sarpanch and only one has male sarpanch whereas in 02 Nagar-Parishad, one is headed by Female Chairperson and remaining is headed by male.

The existing amenities available in the villages are:

3.3.1 Andhalgaon

The authority of BHEL had utilised their CSR fund of **Rs. 48,28,898.00** in Andhalgaon village. The concrete road construction was done as per the schedule VII; Corporate Social Responsibility Rules, 2014, Clause X, Rural Developmental Projects.

This village is in Mohadi Taluka with 6309 population as per the census of 2011. In interaction with Mr. Uttam Pathe, Village Development Officer, he told that the present population of village is around 7300. The numbers of households are 1485. The area of village is 347.62 m² and Land use of village is Categories like: - Gaothan 24.08 m², Horticulture (Bagayati) 267.m² and Jiraiti 55 m². There are 270 persons holding land for agriculture.

The village has 8 anganwadies with 8 anganwadi sevikas and 8 helpers. In this village, there is 1 zillah parishad primary school and 05 private school from 5th to 12th class. All communication facilities viz. Post Office, Newspaper, Cellular Phone, Television, Radio, and Internet are present in the village.

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There are 03 ration shops, bank, police station and cremation land for Hindus and burial ground for Muslims. Almost 100% villagers have electric connection at home as well as agriculture land. But the 3 phase connection at agriculture for ground water extraction faced 16 hours load shading. The village has water supply schemes with 2 overhead tanks of 1 lakh liters and 50 thousand liters respectively. Around 540 households have their personal tap connections. There are 1485 households i.e. 100% households have toilets at their dwelling. One set of common toilet is also present in the village.

Village have primary health centre with 02 Doctor, 04 Nurses and 06 ASHA Workers. Village faced 02 deaths due to the Covid – 19 Pandemic and 8 positive patients were sifted to District place Bhandara as on the date of survey as per the response.

All villagers are fully aware of vaccination and utilize vaccination scheme of Government of India at their own. The births registered at PHC are 04 from January 2020 & Death 32 till end of August 2020. Common People are not aware about the road construction was done by BHEL but the officials of Gram Panchayat and local political leaders are knowing about it. But people said that the cement roads are very much benefited to them as it makes them very easy for transportation. They do not face problem of water logging, flies, mosquitos and rodents. They also told that Water borne diseases during rainy seasons were decreased after these road constructions. The shop keepers told that the trade get increased due to the road construction as the street light gives illuminance and security during night time to come to their shops. Youth of village are enjoying biking on the cement road.

The Survey team conclude that overall population is very happy with this type of work done in the village.

Table 3.1
Road Work in Andhalgaon

| Sr. No. | Name of Road | Total Cost of Road |
|----------------|---|---------------------------|
| 1 | Construction of Cement Road from Zillah Parishad High School chowk to village Andhalgaon | Rs.12,39,295 /- |
| 2 | Construction of Cement Road from Res. of Shri Suresh Hedau to Shri Harinkhede Res. at village Andhalgaon | Rs.6,39,000/- |
| 3 | Construction of Cement Road from Res. of Shri Bhukbal Chawakes to Shri Bisen Burade Res. at village Andhalgaon | Rs.10,64,000/- |
| 4 | Construction of Cement Road from Res. of Shri Manohar Nirvikar to Shri Kisan Chamt Res. at village Andhalgaon | Rs.12,65,000/- |
| 5 | Construction of Cement Road from Res. of Shri Manikrao Pardhi to Shri Gopichand Landge Res. at village Andhalgaon | Rs.6,21,603/- |
| | Total Cost of Road in Andhalgaon | Rs. 48,28,898/- |



Photo 3.1: Interaction with Village Development Officer about Village Andhalgaon



Photo 3.2: Discussions with Shopkeeper about Road



Photo 3.3: Discussions with Villagers about Road

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3.3.2 Sihora

The village is located in Tal. Tumsar and the only big village near the boundary of Maharashtra and Madhya Pradesh, during the interaction with Mr. Shailendra Shende, Village Development Officer, he told that the population of the village is 5743 and households are 1347. There are 05 anganwadies, 05 anganwadi sevikas and 05 helpers. There are 02 Zillah Parishad primary Scholl and even one middle and high school up to 10th class. One more school up to 12th class run by private educational trust. Students in the village have to travel to Sakoli for higher education which is around 35 Kms away. Communication facilities like Post Office, Newspaper, Telephone, Internet, Television, and Radio are present. The village is equipped with Police Station, Ration Shops, Bank and Co-operative Societies. In the village cremation and burial facility is available for Hindu as well as Muslims. Drinking water facility is with 03 overhead tanks with 1 lakh litters, 85000 litters and 25000 litters. 100% of households are facilitated with their own toilets and most of the houses are benefited with Pradhan Mantri Swachha Bharat Abhiyan for toilet construction. 03 common toilets with 04 seat each are also present. The drainage lines are mostly closed in the village. Very few are remaining and in progress for getting closed.

The authority of BHEL had utilised their CSR fund of **Rs. 28,70,977** in Sihora village Taluka Tumsar. The concrete road construction was done as per the schedule VII; Corporate Social Responsibility Rules, 2014, Clause X, Rural Developmental Projects and Section 135 of the Companies Act, 2013; sub Clause xii) Infrastructure Support – construction, repair, extension etc. of:- ii. Educational Institutions.

The Quality of Life of the village is ordinary. Weekly market is on Saturday and around 40 villages visit there, out of which 50 % visitors are from Madhya Pradesh. This weekly market is a big revenue generating element in the village. Medical facility is good with Primary Health Centre in the village. There are 03 doctors, 05 nurses out of which 02 are ANM. Rural hospital is also present with 25 bed facility. In 2019 Birth recorded are 155 and Death are 99.

People are aware with the project and the road constructed is helpful in economy enhancement in the village. Internal road constructed help villagers for transportation without dust explosion. Due to this health status get increased as per the response of villagers.

Table 3.2
Road Work in Sihora

| Sr. No. | Name of Road | Total Cost of Road |
|----------------|--|---------------------------|
| 1 | Construction of Compound wall at Anganwadi School, ward no.3 near Mata talab | Rs.4,73,383/- |
| 2 | Construction of Cement Road from the Res. of Dharmendra Nimije to Hon'ble Dr. Baba Sahab Ambedkar Pratima. | Rs.7,92,222/- |
| 3 | Construction of Cement Road from Hanuman Mohall to Shriram Zade Res. | Rs.8,05,297/- |
| 4 | Construction of Cement Road from the Res. of Fulchand Bisen to Raupchand Raut Res. | Rs.8,00,075/- |
| | Total Cost of Road in Sihora | Rs. 28,70,977/- |



Photo 3.4: Interaction with Village Development Officer about Village Sihora



Photo 3.5: Discussions with Carpenter about Road



Photo 3.6: Discussions with Villager about Road

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3.3.3 Kardi

Kardi within 2011, a population of 4684 is a village in Taluka Mohadi, Dist. Bhandara about 35 km North-East of Bhandara. A large proportion of the residents were cotton weavers and 70s. The Gram Sachiv Mr. Pankaj Katekhaye told during discussions that there are 06 major Anganwadies facilitated with 06 sevikas and 06 helpers. There are 02 primary school one run by Zillah Parishad and other by private trust. One Zillah Parishad school upto 10th Class. The village has been facilitated with college up to graduation. For higher education the students choose either Sakoli or Bhandara. Communication and Infrastructural facilities are good. It has 03 fair price shops, Post Office, Police Station, and Banks, Credit co-operative society, Smashan Bhoomi for Hindus and Kabrasthan for Muslims.

100% households have electric connection at their houses and even at agricultural land. But 16 hrs load shading is there for agricultural connections. An overhead tank is present for drinking water with capacity of 250000 liters. There is 5000 liters' tank with solar pump as Laghu Pani Puravatha Yojana. The villagers face problem of scarcity of water during summer.

The village is open defecation free as 100% households have toilets and awareness of using the same. Village have 02 sets of common toilets for visitors during weekly market. The drainages are partly closed and partly open and hence quality of life of villagers gets affected.

The villagers enjoy Mandai during Diwali and Jatra during the festival of colours 'Holi'. There are few temples viz. Vithal Rukhamai, Hanuman etc where Kirten, Pravachan and Saptaha of Bhagwat is celebrated.

Around 80% of households are facilitating with Ujwala Yojana and the LPG agency is at Mohadi which is around 18 kms away. The internal roads constructed in the village, helps villagers to get the facilities easily at their door step. The agricultural products are also reached safely up to their home to preserve. The road only helps them in transportation but also enhance their health status. One of the respondents told that he was suffering from Respiratory Tract Infection but from 2015 he got rid from that suffering. All most all the beneficiaries are now safe from such infection.

The authority of BHEL had utilised their CSR fund of **Rs. 44,75,085.00** in Kardi village. The concrete road construction and close drainage construction was done as per the schedule VII; Corporate Social Responsibility Rules, 2014, Clause X, Rural Developmental Projects.

Table 3.3
Road Work in Kardi

| Sr. No. | Name of Road | Total Cost of Road |
|----------------|---|---------------------------|
| 1 | Construction of Cement Road from Res. of Shri Jagdish Belpade to Shri Dhanraj Gadhawe Res. at village Kardi | Rs.14,36,909/- |
| 2 | Construction of Cement Road from Res. of Shri Jagdish Belpade to Shri Arjun Gadhawe Res. at village Kardi | Rs.14,36,909/- |
| 3 | Construction of Cement Road from Res. of Shri Nattu Kawales to Shri Dilip Sathawane Res. at village Kardi | Rs.8,71,012/- |
| 4 | Construction of Cement Road from Res. of Shri Atmaram Bante to Shri Mohan Bante Res. at village Kardi | Rs.3,24,976/- |
| 5 | Construction of Drain from Res. of Shri Meshram Guruji to Krishi Godown at village Kardi | Rs.4,05,279/- |
| | Total Cost of Road in Kardi | Rs. 44,75,085/- |



Photo 3.7: Interaction with Village Development Officer about Village Kardi

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3.2.4 Warthi

The authority of BHEL had utilised their CSR fund of **Rs. 48,09,277.00** in Warthi village. This village is very important in respect to transportation as the Railway Station of District is located in this village. The concrete road construction was done as per the schedule VII; Corporate Social Responsibility Rules, 2014, Clause X, Rural Developmental Projects.

Warthi, with in 2011 a population of 13058 and house holds 3065. There is railway station in the village called as Bhandara Road. The village development officer Mr. Gabhne, responded that there are 10 anganwadies with 10 anganwadi devikas and helpers each. The educational facility is good in the village. There are 02 primary schools, 03 Middle and High School 04 Junior as well as Senior colleges and 01 ITI. The infrastructural and communication facilities are at the extend of satisfaction with 06 pair price shop, Police Station, Post office, News Paper, TV, Radio, Internet, Cellular Phones, Bank, Cremation and Burial ground for Hindu and Muslims respectively.

Drinking water facility is sufficient and all the households have tap at their door step. The village is Open Defecation free with 100 % toilets at each and every households present in the village. There are 10 sets of public; latrines in the village. Being railway station of district is located in the village, this village is become hub for trade and communication. There is very good market lane on the road to railway station. The weekly market is on Thursday and it is beside the roads constructed by BHEL. The people who visit the weekly market come with his bikes directly to the market as the road is good. The households also started daily needs shop at their home and get benefited due to good crowd in weekly market. One of the daily need shop keeper Mr. Shriratan Daman told that from 5 to 6 years the number of visitors to weekly market get double and people from around 28 villages visit the market.

Medical facility is food and village have Primary Health Centre with 15 bed indoor patient facility. There are 2 Doctors and 03 Nurses. 15 villages come under this PHC. In the year 2019, 64 Birth and 101 Death are recorded. The Sarpanch and Village Development Officer told that their village is very much benefited by the work of road construction by BHEL. They told that the transportation is very smooth in the village and it enhance daily trade and also in weekly market. There is no water logging in the village which minimizes the water borne diseases, contamination of surface and ground water. The positive impact due to the road construction in the village is as follows:-

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1. Transport Facilities
2. Health Facilities
3. Trade
4. Life Style

The VDO requests authority of BHEL to erect the plant in their area at earliest and create employment facilities and more beneficial CSR Work for development of their village, he added his desire for his village development as follows:

1. High mask Light
2. Street Light
3. Garden and Play Ground
4. Library
5. Hostel for College students
6. Development of Hindu Smashan Bhoomi
7. Digital Class Room in ZP School.

Table 3.4
Road Work in Warthi

| Sr. No. | Name of Road | Total Cost of Road |
|----------------|--|---------------------------|
| 1 | Construction of Cement Road from Res. of Shri Dilip Sathwane to Shri Shivshankar sathwane Res. at village Warthi | Rs.5,96,961/- |
| 2 | Construction of Cement Road from Res. of Smt. Sushila Motghare to Shri Kishor Marwade to Shir Tilakchand Pardhi Res. at village Warthi | Rs.5,95,617/- |
| 3 | Construction of Cement Road from Hanuman Temple to Shri Sharwan Mate Res. at village Warthi | Rs.8,98,334/- |
| 4 | Construction of Cement Road from Res. of Shri Pancham Ukey to Shri Wankhede Res. at village Warthi | Rs.1,89,047/- |
| 5 | Construction of Cement Road from Res. of Shri Burbades to Shri Shilav Fuley Res. at village Warthi | Rs.6,84,597/- |
| 6 | Construction of Cement Road from Res. of Shri Munna lal Asati to Shri Nandagawli Res. at village Warthi | Rs.3,98,793/- |
| 7 | Construction of Cement Road from Bank of India to Shri Rajabhau Bansod's Res. at village Warthi | Rs.3,17,587/- |
| 8 | Construction of Cement Road from Res. of Shri Sudarshan Dongre to Shri Pappu Dattatary Res. at village Warthi | Rs.4,46,023/- |
| 9 | Construction of Cement Road from Res. of Shri Vishnu Kurwekar to Shri Timaji Gadekar Res. at village Warthi | Rs.3,67,680/- |
| 10 | Construction of Cement Road from Res. of Shri Tika Pache to Shri Santosh Karemore Res. at village Warthi | Rs.3,14,638/- |
| | Total Cost of Road in Warthi | Rs. 48,09,277/- |



Photo 3.8: Interaction with Village Development Officer about Village



Photo 3.9: Discussions with Trader about Road



Photo 3.10: Discussions with Shopkeeper about Road



Photo 3.11: Discussions with Villager about Road

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3.3.4 Pauni

Pauni within 2011 a Population of 22821 is a tehsil in Bhandara district with very rich history of economy. This town is situated on the bank of river Wainganga and name derived from the mythical King “Pavan”.

There are 28 anganwadies with 28 anganwadi sevikas and helpers. There are 13 schools in the town imparted education in Marathi, Hindi, Urdu and English. During survey it is noticed that out of 13 only 06 schools are imparting education and remaining get closed due to lack of admissions. Population migration is very big problem in this town. In 1970's there were 60,000 persons engaged in the business of Handloom which get migrated to Gujarat where this business is grooming and need of skilled personal in their business. At present the business of handloom is history of this town.

The town is very clean and aware to maintain hygiene around their dwelling hence the town is free from open defecation. The town have Civil Hospital with all required facilities as per the CEO Mr. Ravindra Dhake. The health status is good in the town. The dispensary present is maintained by Municipality. In this town 200 Death and 788 Birth are recorded in 2019.

There are several Mahila Bachat Gat (SHG) and survey team had interaction with members of “Ahilya Self Help Group” which deals with Pico and Fall to Saries, Blause and Salwar suite stitching . They also conduct classes for stitching.

The road constructed in this town is benefited specially youth who biked to go here and there. The employable youth are well educated but unemployed because of lack of opportunity in the town. The Veterinary Dispensary is located at Bhaitalav. The drainage facility is good at present and BHEL has constructed two close drainage lines for this town. The beneficiaries' citizens are very happy to this type work and also hygienic condition of town is enhanced.

In this town 04 burial and cremation places are constructed by Municipality. The road and drainage construction have positive impact on the town which increases the quality of life due to good transportation, health, trade and life style.

The authority of BHEL had utilised their CSR fund of **Rs. 48,78,189.00** in Pauni tahsil. The concrete road construction and close drainage was done as per the schedule VII; Corporate Social Responsibility Rules, 2014, Clause X, Rural Developmental Projects.

Table 3.5
Road Work in Pauni

| Sr. No. | Name of Road | Total Cost of Road |
|------------------------------------|--|---------------------------|
| 1 | Increasing the width of road by using cement concrete from the house of Shri. Evaji Bavankar to Budhwari naka Construction of Concrete drainage with cover in Shaniwari ward | Rs.14,28,829/- |
| 2 | Construction of Cement Road and drainage with cover from the house of Mobin Bhai to the shop Tulshidas Banjari. Bhaitalab ward | Rs.7,66,986/- |
| 3 | Construction of incompleted road from Panchyat Samiti road to dhovi talab Hanuman mandir (This road is constructed till Dr. Kadukar Shivan Class and then it is Kacha) in Bajrang ward | Rs.9,87,724/- |
| 4 | Construction of Concrete drainage with cover on both side from Sakshena Prathmik School to the house of Shri Lambat in Somavari ward | Rs.9,55,904/- |
| 5 | Construction Concrete drainage with cover from back side of Nalanda hostel in Shukrawari ward | Rs.7,38,566/- |
| Total Cost of Road in Pauni | | Rs. 48,78,189/- |



Photo 3.12: Data collection at Nagar Parishad Office



Photo 3.13: Discussions with Villager about Road



Photo 3.14: Discussions with Villager about Road



Photo 3.15: Discussions with Worker about Road

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3.3.5 Sakoli

The authority of BHEL had utilised their CSR fund of **Rs. 79, 80,394.00** in Sakoli Tahsil. The concrete road construction and close drainage was done as per the schedule VII; Corporate Social Responsibility Rules, 2014, Clause X, Rural Developmental Projects

In 2011 Population of Sakoli is 14636 and House Holds 3397. The Sub Divisional Officer of Sakoli Smt. Manisha Dandge responded during survey to our survey team that Sakoli is located in near NH 6. It is surrounded by lake, ponds and hills. Chul Nhand River is very close to the town. Transportation to the major and minor cities is good and well connected with road. The city has good education facilities and also it is Educational Hub of Dist. Bhandara. There is ranging from Kindergarten to Post Gradation. The city has 05 Marathi and 01 English school, 01 Government and 01 Private polytechnic college and other degree colleges including B. Pharm, Science, Arts, commerce, Nursing Institute and Physical Education Institute.

The town is 100% open defecation free with personal toilets in every household. The Medical Facility is very excellent with more than 10 private hospitals with all the modern facilities. The people of Sakoli are waiting for the progress of the plan of BHEL. They are very happy with the work done by BHEL in their town. The roads and CD work benefited them to enhance quality of life and reduce pollution & health problems from their life. They said that they will be more benefited by erection and secondary employment to their employable youth.

Table 3.6
Road Work in Sakoli

| Sr. No. | Name of Road | Total Cost of Road |
|-------------------------------------|---|---------------------------|
| 1 | Construction of Cement Road from the Res. of Shri Lanje Guruji to Shri Dayaram Agase's Res. in Shivaji Ward, Sakoli | Rs.3,39,102/- |
| 2 | Construction of Cement Road form the Res. of Shri Manoj Gajghat to Shri Arjun Bankar's Res. in Shivaji Ward, Sakoli | Rs.5,65,208/- |
| 3 | Construction of Cement Road from the Res. of Shri Santosh Raut to Shri Shamrao Kadpate's Res. in Panchshill Ward, Sakoli | Rs.2,82,604/- |
| 4 | Construction of Cement Road from the Res. of Dr. Bisen to Shri Namdev Gajbhiye's Res in Toli Wad, Sakoli | Rs.5,65,208/- |
| 5 | Construction of Cement Road from the Res. of Shri Bhendarkar to Shri Kori to Dr. Bisen to Zillah Parishad High School Road in Toli Ward, Sakoli | Rs.7,06,525/- |
| 6 | Construction of Cement Road in Civil Ward No. 3 from Ekodi road km. 72/700 to Jamnapur raod No. B-126, Sakoli | Rs.13,04,375/- |
| 7 | Construction of Cement Road from the Res. of Shri. Mansaram Katankar to Shri. Anna Sonkusare in Civil Ward, Sakoli (Part I) | Rs.9,89,127/- |
| 8 | Construction of Cement Road from the Res. of Shri. Anna Sonkusare to Shri. Babbubhai Ekodi's Res. in Civil Ward, Sakoli (Part II) | Rs.9,89,127/- |
| 9 | Construction of 02 C.D. Works in Civil ward No.3 near Biliwars Church & Jamnapur Padan road, Sakoli | Rs.5,21,740/- |
| 10 | Construction of Cement road in Civil Ward No. 3 from Ekodi road km 73/00 to Electric Pole No. B-126, Sakoli (Part-I) | Rs.8,69,565/- |
| 11 | Construction of Cement Road from the Res. Shri Abhijit Khotele to Shri. Narad Khedikar's Res. in Talav Ward, Sakoli | Rs.8,47,813/- |
| Total Cost of Road in Sakoli | | Rs. 79,80,394/- |



Photo 3.16: Collecting Information from Nagar Parishad Office about the Taluka



**Photo 3.17: Discussions with Shopkeeper
about Road**



**Photo 3.18: Discussions with Villagers about
Road**

Chapter IV

Implementation of CSR by BHEL

4.0 Implementation of CSR by BHEL in the Study Area

As per the commitment to Society for development of the country, the management of BHEL PSWR, selected Bhandara district for implementation of Mega CSR Project and in the process of implementation of Corporate Social Responsibility Action Plan as per the needs of the villagers they have constructed internal roads at selected locations of selected villages and towns. Management of BHEL believes that this implementation of CSR will definitely help the villages to enhance quality of life.

The Deputy Manager, Human Resource Mr. Mayur Gurjar had given detailed information about CSR work, completed during the discussions with survey team. Whenever he was available for discussions during report preparation phase.

The study area selected by BHEL is undeveloped. Due to this Authority of BHEL wants to be develop the area of around the village of plant site hence they had utilised there CSR Fund for development of backward area in Bhandara district. Viz. Andhalgaon, Warthi, Kardi in Taluka Mohadi and Sihora in Taluka Tumsar, and in urban area of Sakoli and Pauni Tehsil of Bhandara district. The development in any area begins with Transportation, Communication and Infrastructural Development. The BHEL decided to construct concrete road in the study area. This road has become a life line for development of village, Quality of Life of the villagers and intensification of Small business.

Due to the implementation of roads as CSR facility, it is very useful for all villagers. These roads are responsible for enhancement in the facilities like Transportation, Communication, Trade and any responding any type of Emergency. The Villagers was facing problem before road construction i.e. communication, health and education but now they are very happy due to this facility. All children are going to school happily. After implementation of this facility, the Medical emergency is responded very quickly and smoothly. The positive thing is that they get quick conveyance for transportation. The villagers feel more secure from Theft and Dacoity after implementation of the CSR..

The villager told that transportation facility got enhanced and private Auto rickshaw, Schools Van is also frequently providing their service to them. Salesmen are coming to provide service at their door step which save time and energy of villagers. It helps in youth empowerment as they opt career as vehicle driver as their employment. This help them to become “Atma Nirbhar” as per the slogan of our Honourable Prime Minister. Revenue generation in the village by different businesses is also speeding up in the study area due to good road conditions. The

accidents have reduced and the health status of the villagers is also improving. The village is illuminated by street light after construction of concrete road by the authority of Gram Panchayats and Nagar Parishads. The roads are decorated by tree plantation besides them by Gram Panchayat and Nagar Parishads. This helps the study area to reduce dust pollution in the study area. The respondent of study area told to survey team that tree plantation makes out area colourfull and full of enthusiasm.

The aesthetic value of Pauni and Kardi increases due to construction of closed drainage. The area of Pauni and Kardi become clean and people got rid of the nuisance of mice, rodents, mosquitoes and flies. The senior citizens of Kardi told to our survey team that they are experiencing urban facilities because of the implementation of CSR in their village. The health status of study area is improved and victims of water borne as well as air borne diseases are reduced after construction of concrete road.

4.1 Quality of Life

Quality of life (QoL) is a term, which indicates overall status of socio-economic environment in a study area. Quality of life (QoL) is defined as a function between “objective conditions” and “subjective attitudes” involving a defined “area” of concern.

The “objective conditions” are defined as numerically measurable artifacts of a physical, sociological event or economic event. Objective conditions may be defined as any number, which stands for a given quantity of a variable of interest so long as it is independent of subjective opinion.

Subjective attitude is primarily concerned with affective and cognitive dimensions. It is specifically concerned with ‘how aspects of cognition vary as objective conditions vary’.

Once objective measures are obtained for each factor they are transformed to a normal scale varying from 0 to 1 (value function curve) in which 0 corresponds to the lowest or least satisfactory measure, and 1 corresponds to the highest. The weights are assigned to each factor by ranked-pair wise technique (by the expert group) based on the secondary data and general observations.

For each objective measure, a corresponding subjective measure is developed for each individual of the sample population by asking him to rate his satisfaction scale (value function curve). And, it is used such that 0 corresponds to the lowest level of attitudinal

satisfaction and 1 corresponds to the highest level of satisfaction. Weights are assigned to each factor using ranked - pair wise comparison techniques.

The Socio-economic Indicators for QoL Assessment are:

1. Income, Employment and Working Condition
2. Housing
3. Food
4. Clothing
5. Water Supply and Sanitation
6. Health
7. Energy
8. Transportation and Communication
9. Education
10. Environment and Pollution
11. Recreation
12. Social Security
13. Human Rights

The final exercise is done by using the formula:

1. Subjective Quality of Life

$$QoLs = \frac{1}{p} \sum_{i=1}^m \sum_{j=1}^p Qlij \times Wi$$

Where,

QoLs = Subjective quality of life index

p = No. of respondents, $j = 1 \dots p$

m = No. of factors, $i = 1 \dots m$

Qlij = Subjective quality index for ith factor assigned by jth respondent

$\sum Qlij$ = Subjective quality index for ith factor assigned by all respondents in an

area

Wi = Relative weightage of the ith factor

2. Objective Quality of Life

The calculation of Quality of Life objective index the formula used is as:

$$\text{QoLo} = \sum_{i=1}^n \text{Qli} \times \text{Wi}$$

Objective quality of life

Where,

| | | |
|-------------|---|---|
| QoLo | = | Objective quality of life index |
| n | = | No. of QoL Factors |
| i | = | 1... n |
| Qli | = | Satisfaction level (assigned by the expert group) for the ith objective indicator |
| Wi | = | Normalized weight for ith factor |

3. Quality of Life (Cumulative Index)

$$\text{QoLc} = \frac{\text{QoLo} + \text{QoLs}}{2}$$

The subjective and objective QoL indices prior to commissioning of the project are presented in **Table 4.1**.

The average QoL index values are estimated as:

$$\text{QoL (s)} = 0.59$$

$$\text{QoL (o)} = 0.57$$

$$\text{QoL (c)} = 0.58$$

The average QoL index value for the study area is leaning towards unsatisfactory level due to poor facilities like medical, transportation and communication, lack of sanitation and poor housing condition. Subjective conditions are much satisfactory as compared to objective conditions. The satisfaction level of people is seen towards the educational and about the basic needs like food, fuel availability etc.

Table 4.1
Existing Quality of Life of the Villages in Study Area (2013)

| Sr. No. | Name of the villages | QoL(s) | QoL(o) | QoL(c) |
|----------------|-----------------------------|---------------|---------------|---------------|
| 1 | Warthi | 0.54 | 0.52 | 0.53 |
| 2 | Andhalgaon | 0.53 | 0.52 | 0.525 |
| 3 | Kardi | 0.54 | 0.53 | 0.535 |
| 4 | Sihora | 0.56 | 0.58 | 0.57 |
| 5 | Sakoli | 0.58 | 0.56 | 0.57 |
| 6 | Pauni | 0.57 | 0.55 | 0.56 |
| | Total | 0.55 | 0.54 | 0.55 |

QoL(s) = Subjective Quality of Life

QoL(o) = Objective Quality of Life

QoL(c) = cumulative Quality of Life

Table 4.2
Existing Quality of Life of the Villages in Study Area (2020)

| Sr. No. | Name of the villages | QoL(s) | QoL(o) | QoL(c) |
|----------------|-----------------------------|---------------|---------------|---------------|
| 1 | Warthi | 0.62 | 0.56 | 0.59 |
| 2 | Andhalgaon | 0.59 | 0.59 | 0.59 |
| 3 | Kardi | 0.58 | 0.55 | 0.56 |
| 4 | Sihora | 0.57 | 0.59 | 0.58 |
| 5 | Sakoli | 0.63 | 0.59 | 0.61 |
| 6 | Pauni | 0.59 | 0.58 | 0.58 |
| | Total | 0.59 | 0.57 | 0.58 |

QoL(s) = Subjective Quality of Life

QoL(o) = Objective Quality of Life

QoL(c) = cumulative Quality of Life

Table 4.3
Existing Quality of Life of the Villages in Study Area
Comparative Table (2005- 2015)

| Sr. No. | Name of the villages | QoL(c) (2013) | QoL(c) (2020) |
|----------------|-----------------------------|--------------------------|--------------------------|
| 1 | Warthi | 0.53 | 0.59 |
| 2 | Andhalgaon | 0.525 | 0.59 |
| 3 | Kardi | 0.535 | 0.56 |
| 4 | Sihora | 0.57 | 0.58 |
| 5 | Sakoli | 0.57 | 0.61 |
| 6 | Pauni | 0.56 | 0.58 |
| | Total | 0.55 | 0.58 |

QoL(s) = Subjective Quality of Life

QoL(o) = Objective Quality of Life

QoL(c) = cumulative Quality of Life

4.2. Socio - Economic Impacts

Implementation of Mega Project of CSR by BHEL PSWR would create certain impacts with beneficial effects on the socio-economic environment. Some of these impacts would be more effective for the immediate vicinity with short term effects whereas the others would be of higher order or of long term in nature.

The impacts of Mega Project of CSR by BHEL PSWR on parameters of human interest have been assessed in terms of:

- The impact due to enhancement in transportation and communication with respect to the other support facilities

Beneficial Impacts

The impacts identified as beneficial support for Mega CSR project activities. They are:

- Trade opportunities for the local people as well as for those from the nearby surrounding area would increase due to increase in transportation facility
- Due to influx in population, the trade, business opportunity for the local people would increase, raising the economic status of the people around the study area
- Evolution towards urbanization as well as the influx of working people within the study area would lead to favorable changes in the existing infrastructure facilities, which may further improve the quality of life of the study area
- Due to urbanization there would be an overall development of the area and business opportunities, which may improve the quality of life of the study area.

Table 4.4
Prediction of Likely Impacts on Socio-economic Environment

| Parameter | Local | Regional | Direct | Indirect | Reversible | Irreversible |
|-----------------------|-------|----------|--------|----------|------------|--------------|
| Employment | + | + | + | + | • | + |
| Income | + | + | + | + | • | + |
| Transport | + | + | + | + | • | • |
| Education | + | + | + | • | • | + |
| Medical facilities | + | • | + | • | • | • |
| Communication | + | + | + | + | • | • |
| Availability of power | + | + | + | • | • | • |
| Sanitation | + | • | + | • | • | • |
| Housing | + | • | + | + | • | • |
| Health | + | • | + | • | - | + |
| Recreation | + | + | + | • | • | • |
| Agriculture | + | • | + | + | • | • |
| Cost of living | + | + | + | + | • | • |
| Business | + | + | + | + | • | • |
| Per Capita Income | + | + | + | + | • | • |
| Pollution | - | • | - | • | • | • |

+ : Positive Impact

- : Negative Impact

• : Insignificant