# GRAM PANCHAYAT SPATIAL DEVELOPMENT PLAN

## NEORI GRAM PANCHAYAT
## RANCHI DISTRICT

**for**

**Ministry of Panchayati Raj**
**Government of India**

**NOVEMBER 2020**


**DEPARTMENT OF ARCHITECTURE**

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI**

## THE STUDY TEAM

**The study team of Department of Architecture, Birla Institute of Technology, Mesra consist of:**

| | | |
|---|---|---|
| **Principal Investigator** | | |
| 1 | Dr. Satyaki Sarkar | Associate Professor and Head, Department of Architecture, |
| **Co- Principal Investigators** | | |
| 2 | Ms. Ritu Agrawal | Assistant Professor, Department of Architecture |
| 3 | Dr. Smriti Mishra | Assistant Professor, Department of Architecture |
| 4 | Dr. Bimal Chandra Roy | Assistant Professor, Department of Architecture |
| 5 | Dr. Rajan Chandra Sinha | Assistant Professor, Department of Architecture |
| 6 | Mr. Anuj Toppo | Assistant Professor, Department of Architecture |
| 7 | Mr. Apurv Ashish | Assistant Professor, Department of Architecture |
| 8 | Ms. Anila Surin | Assistant Professor, Department of Architecture |
| 9 | Mr. Pavan Kr. Tiwari | Assistant Professor, Department of Architecture |
| 10 | Ms. Anjali Pathak | Assistant Professor, Department of Architecture |
| 11 | Mr. Rizwan Kazmi | Assistant Professor, Department of Architecture |
| 12 | Ms. Shama Parween | Assistant Professor, Department of Architecture |

**The study team of NRSC consist of:**

| | | |
|---|---|---|
| 13 | Mr. Y K Srivastava | RRSC-East, NRSC |
| 14 | Mr. Prabhat K. Routh | RRSC-East, NRSC |
| 15 | Ms. Khushboo Mirza | RRSC-North, NRSC |
| 16 | Dr. Vinod Kr. Sharma | RRSC-North, NRSC |
| 17 | Mr. Shankar Ram N R | RRSC-North, NRSC |
| **Overall Technical Guidance** | | |
| 1 | Dr. C. S. Jha, | Outstanding Scientist & CGM, RCs, NRSC |
| 2 | Dr. V. M. Chowdary | RRSC-North, NRSC |
| 3 | Dr. K. Chandrasekar | RC-Hyd, NRSC |
| 4 | Dr. D. Dutta | RRSC-East, NRSC |

*Cover page design: Ms. Riddhi Sharma, B. Arch student, B.I.T. Mesra*

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Smt. Shail Prava Kujur, IAS, Jt. Secretary, Rural Development, Government of Jharkhand;

Sh. Binay Kumar Ray, IAS, Director cum Special Secretary, Rural Development, Government of Jharkhand;

Sh. Chahavi Ranjan, IAS, Deputy Commissioner, Ranchi District;

Sh. Rai Mahimapat Ray, IAS, Director, JSAC, Jharkhand;

Sh. V. Uday Kumar, DDG & Head, RS & GIS Division, NIC

Sh. Vishnu Chandra, Scientist-G, National Informatics Centre;

Smt. Richa Chaudhary, State Consultant (LSG), PRI Division, Department of Rural Development, Government of Jharkhand;

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Sh. Anil Mahato, Krishi Mitra, Neori Gram Panchayat;

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**Study Team**

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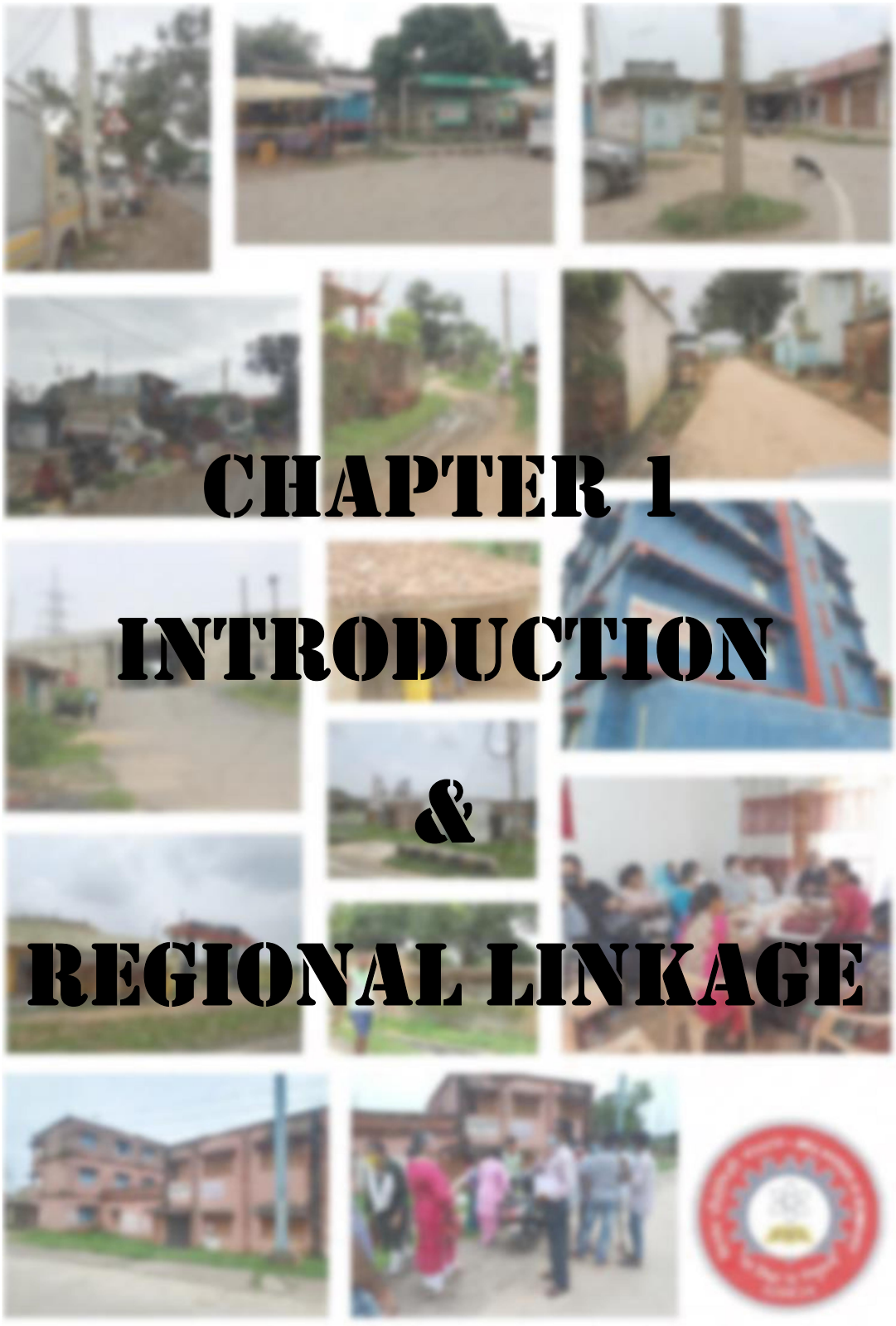


# CHAPTER 1

# INTRODUCTION

# &

# REGIONAL LINKAGE

# CHAPTER 1: INTRODUCTION & REGIONAL LINKAGE

## 1.1 INTRODUCTION

Panchayati Raj Institutions (PRIs) are rural local governments entrusted with the responsibilities to prepare plan and implement schemes for economic development and social justice in rural India. The Directive Principles of State Policy contained in the Constitution of India provides for the Panchayati Raj System. Following the 73rd Amendment of the Constitution, (73rd CAA), 1992 which came in to force on 24th April 1993, the three tier Panchayati Raj Institutional (PRI) system was institutionalized through Part IX of the Constitution. Key features of this three tier basic framework, includes: three tiers of panchayats (Gram Panchayat, Intermediate Panchayat, District Panchayat), Gram Sabha, five year term, reservation for SC, ST and Women, State Election Commission, State Finance Commission. The States are required to entrust these bodies with such powers, functions and responsibilities so as to enable these institutions function as institutions of self-government. In particular, the PRIs are required to prepare plans and implement schemes for economic development and social justice including those enumerated in the Eleventh Schedule of the Constitution.

## 1.2 INTEGRATING SPATIAL PLANNING AND GRAM PANCHAYAT DEVELOPMENT PLAN

As per the Census, 2011, rural areas in India cover 94% of land and 69% of population while urban area holds only 6% of land and 31% of its population. The Father of the Nation, Mahatma Gandhi, had rightly suggested that independence must begin at the bottom, and that every village ought to be a republic or panchayat with the right authority and resources to realize its full potential for economic and social development. There are 6.4 lakh villages in the country. Though the problems in villages don't seem so intense in comparison to cities they cannot be ignored. Rapid rate of urbanization and growth of population in cities, the out migration of rural population for employment, disinterest of farmers towards agriculture, and changing character of villages in the vicinity of cities and declining rural poverty are some of the inevitable occurrences that India as a country is witnessing today which is very alarming.

A review of the prominent pre-independence rural development initiatives in India reveals that they were sector specific and community centric. Also, Post-

independence various rural development initiatives were taken up by Government of India during each of the Five Year Plan periods. The 73rd amendment to the constitution has given way to democracy in rural areas. Taking it further ahead, the XIV Finance Commission award created an opportunity for responsive local governance at institutional level of the Gram Panchayat. The guidelines issued by Ministry of Finance instruct that proper plans i.e. Gram Panchayat Development Plan (GPDP) is to be prepared by the Gram Panchayat for the basic services within the functions devolved to them as per State laws. These plans have to be participatory plans involving the community, particularly the Gram Sabha, in the formulation of priorities and projects and will also have to ensure the mandates of social justice and economic development mentioned in Article 243G.

The GPDP is a comprehensive plan for effective development of a village panchayat area. GPDP aims to expand governing space of a village panchayat and to empower it as a development institution. GPDP is generally aimed at:

- Improving basic amenities in a village panchayat. This includes sanitation, connectivity, drinking water, storm water drainage, burial grounds, etc.
- Improving standard of living of poor families in a panchayat area.
- Eradication of absolute and relative poverty through convergence of government programmes and policies.
- Prevention and control of communicable diseases with the support of the health department.
- Providing social security to all sections of marginalized communities.
- Effective management of natural resources and sustainable development of livelihoods.
- Conserving soil and water.
- Ensuring 100 per cent enrolment in schools.
- Ensuring gender equality and equity in all aspects of development.
- Development of governing capability of village panchayats.
- Strengthening a gram sabha and improving the quality of a gram sabha.

GPDP has a clear component addressing vulnerabilities of poor and marginalized people and their livelihood opportunities through an integrated poverty reduction plan. It allows for different local models and innovations that are locally appropriate and cost effective. It helps to transform GPs into institutions of local self-governance and to cement the GP's identity as development institution. Overall the process of participatory planning for a Gram Panchayat Development Plan is expected to improve service delivery, enhance citizenship, motivate volunteerism, create space for

an alliance of people's institutions and groups, and improve governance at the local level. The above contents mentioned only refer to the sectoral development of the villages/Gram Panchayats, but the spatial dimension is not incorporated in these programs. Today, the flagship rural programs of Government of India are utilizing IT and geo-spatial technology and have in-built convergence mechanisms; however the pressing need is to integrate these into a spatial planning framework that will take into consideration the dynamic settlement characteristics of India's villages.

**Contents of Gram Panchayat Spatial Development Plan**

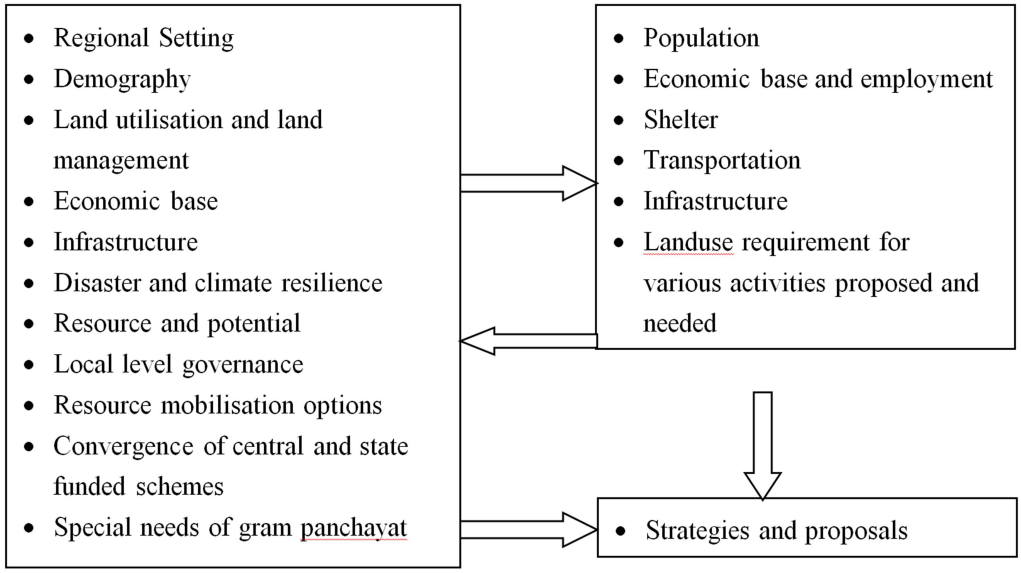



**Fig. 1.1: Contents of Gram Panchayat Spatial Development Plan**

Spatial plans are prepared for cities and towns popularly known as Master Plans and Development Plans and notified under the respective State Town and Country Planning Acts and Urban Development Acts. These Acts in their title include *Country Planning*, but in actual terms, there is no provision of preparing Master/Development Plans for *countryside* village, nor has much attention been given by the State Governments to prepare the same. There has been no serious attempt to prepare Spatial Plans for rural areas and taking into account the vast rural population of the country who have been deprived of the access to basic facilities. Herein lays the importance of preparing a template for a spatially integrated version of the GPDP, namely the GPSDP (Gram Panchayat Spatial Development Plan). Fig 1.1 presents the contents of Gram Panchayat Spatial Development Plan.

Further, the situation during the COVID-19 pandemic, the lockdown and the resultant 'reverse migration' of lakhs of daily wage labours, employed mainly in the informal sector; pose a huge socio-economic problem and challenge to government and administration. So the major challenge now is to provide gainful employment to these reverse migrants in the rural areas, provide them better infrastructure to grow and sustain.

Many governments across the country have taken various stop-gap initiatives like leverage MGNREGA to provide congenial living environment to these people but long term planning in the need of the hour. Pockets, where tribal communities predominate, are particularly the most vulnerable in terms of food and nutritional security and require special attention. With the Government of India in these trying times under our Hon'ble Prime Minister Shri Narendra Modi launching 'Átmanirbhar Bharat' to address the situation, the seeds of it must be planted at the grass-root level. The proposed Gram Panchayat Spatial Development Plan (GPSDP) has been conceived to address the issue and make the GP a small hotspot for future migration and better work and living opportunities. By virtue of its location on NH the GPs have huge potential for economic development in near future. Proper planning of the GP will allow for rational and sustainable use of land catering to various needs, including social, economic, developmental and environmental needs. Hence the Panchayat needs to be capacitated to take over the larger canvas of local economic development in all spheres amongst their constituent villages so as to elevate them to level of a growth center in near future.

## 1.3 MISSION OF GRAM PANCHAYAT SPATIAL DEVELOPMENT PLAN (GPSDP)

Mission of the GPSDP is to:
"To build and sustain a Panchayat of having vibrant economy and diversity through strong partnership with stakeholders to provide better Quality of Life."

## 1.4 VISION OF GPSDP

The vision of the Spatial Planning initiative is to create

- A rural base of diverse, vibrant, and inclusive economy;
- A panchayat characterized by sustainable infrastructure and resource management;

- A congenial place for living and growth with affordable homes and neighbourhoods;
- A panchayat having happy and healthy residents;
- An area of endearing character and local identity.

## 1.5 STUDY OBJECTIVES

The study objectives thus include:

- Laying down broad policies and directions for growth in the desired direction so as to transform the GP into a Growth node
- Determining the hierarchy of roads and access ways.
- Establishing the zoning of land use with specific zoning for lands abutting to NH.
- Determining the standards for common facilities for education, health & social needs of the resident population and planning for provision of the same;
- Identifying the social and physical infrastructure requirements of the GP and planning for the same in convergence with Central and State initiatives and schemes.
- Developing a mechanism for sustainable developments that harmonize both the needs of the environment and of development, as well as guidelines for such developments.
- Identifying the requirement of investments, finance mobilization and avenues for economic revitalization of the area.
- Suggesting policies for integrating the neighbouring cities, town and villages so that a holistic integrated development can happen on ground.

## 1.6 SCOPE OF WORK

The Gram Panchayat Spatial Development Plan/Master Plan will be primarily planning for Agriculture and Farms, residential purposes, local markets and commercial, Institutional area (for Banks, Post Office, Anganwadis, PHC, Schools etc), Parks and Gardens, Water bodies, Industries (Agro-based or MSMEs), and for making Resto or Service areas or Lay-by areas along the Highway. The salient parts of the Gram Panchayat Spatial Development Plan / Master Plan include:

- Preparation of Vision Statement
- Current state assessment & gap analysis in term of socio-economic factors, social and physical infrastructure;

- Map preparation and spatial analysis with respect to housing typology, household income, road network, infrastructure and land holding
- Spatial indices including socio-demographic indicators, housing, environmental determinants, infrastructural attributes and natural resource management;
- Analysis of the economic situation of the Panchayat and identification of drivers of economy, proposals for economic revitalization of the area;
- Investment and implementation planning for proposed activities and structures;


**Fig. 1.2: Panchayat Bhawan of Neori Gram Panchayat**

*(Source: author)*

## 1.7 METHODOLOGY FOR THE PREPARATION OF GPSDP OF NEORI GRAM PANCHAYAT

The gram Panchayat of, Neori in Kanke Community Development (C.D.) Block of Ranchi district in the State of Jharkhand was selected and considered for Gram Panchayat Spatial Development Plan as it exemplifies a typical peri urban character. The proximity of the gram panchayat to the state capital Ranchi, its inclusion in the planning area of Ranchi as per the notified Master Plan of Ranchi 2037, and its location along the National Highway 33, has propelled significant development in the gram panchayat making it prone to intense transformation due to the significant and

fast approaching urbanization. Fig 1.2 shows an image of the Panchayat Bhawan of Neori Gram Panchayat.

The GPSDP will incorporate the spatial layers corresponding to attributes like physical features, land holding and land ownership of revenue lands, land use in Abadi area, overall physical and social infrastructure, built environment parameters like housing typology, building height, building age, etc.; economic parameters like landholding wise cropping pattern, etc. It will also integrate the non-spatial attributes like socio-economic condition, skill level, governance dimensions, etc. The outcome is in the form of zoning system and prescriptions for rural settlements. The study was therefore intensively based on primary survey and Census data 2011. Spatial and Non Spatial data was collected by study team comprising of faculty members of BIT Mesra, Ranchi who made necessary number of visits to the gram panchayats in question.

Fig 1.3 captures the interaction of the planning experts from BIT Mesra, Ranchi with the Panchayat Samiti Members and the youth of the village who were engaged in household survey activities.

**Fig. 1.3: Interaction of Experts from BIT Mesra with Ward Samiti Members and the Household Survey Group** *(Source: author)*

The data related to demography was procured from Census 2011 but rest of the data regarding Land use, socio-economic condition of population, services, infrastructure, housing condition etc. was collected on ground. During the visit meetings were conducted with the Mukhiya, Gram Samiti members and villagers in subgroups of women, children and youth. Visit of NIRD&PR official too took place for the appraisal of the project during surveys. Comments and expectations of the focused group discussion were noted to be considered during the proposal. The data collected

reflects interest of residents as most of it was procured through open ended personal interviews, questionnaire based interviews, focus group discussion etc. Considering spatial emphasis of the project pertinent spatial data related to land use, cropping pattern, infrastructure, housing etc. was collected on ground and then transferred to map through GIS. Maps depicting combined indices have also been produced for rational approach.

Gram Panchayat Development Plan preparation exercise would thus involve the study of:

- Regional setting
- Demography
- Land Utilisation and Land management
- Economic Base
- Infrastructure
- Disaster and Climate Resilience
- Resources and Potential
- Local level governance
- Resource Mobilisation options
- Convergence of Central/State funded schemes
- Special needs of Gram Panchayat

Rural Disaster Resilience Strategy and Plan

- Resilience Assessment
- Building a resilience plan
- Plan Implementation

## 1.8 PANCHAYATI RAJ LEGISLATIONS IN JHARKHAND (JHARKHAND PANCHAYATI ACT, 2001)

This section presents about the Panchayati Raj Legislation of Jharkhand. The State Government of Jharkhand enacted the Jharkhand Panchayat Raj (JPR) Act, 2001 to establish a three-tier PRI system in the State and framed Jharkhand Panchayat Raj (Budget and Accounts) Rules, 2010, to ensure smooth functioning of PRIs. The JPR Act, 2001 was enacted in accordance with the provisions of the 73$^{rd}$ amendment to the Constitution and that of the Panchayat Extension to the Scheduled Areas Act (PESA) 1996 which is applicable to this state.

Following the recommendations of the Bhuria Committee, the Centre enacted PESA on 24th December 1996. PESA grants special status to Adivasis in scheduled areas. Under PESA, the village council is given the right to intervene in the process of appropriation of land and Clause 4 (m) of PESA endows the Gram Sabha with 'the ownership of minor forest produces'. Also all the positions at the three levels in the Panchayat system, the posts of Mukhia, President in Panchayat Samiti and Chairman in Zilla Parishad, are reserved for tribal. Since there are 32 tribal groups in Jharkhand and nine primitive tribal groups which together comprise 26 per cent of the population some districts are listed under schedule V. Thus, under PESA, 12 out of 24 districts (113 blocks in 24 districts) have been identified as scheduled areas which enjoy a minimum of 60% reservation for tribal in overall seats and full reservation, and Gram Sabhas take on more importance than Gram Panchayats and become coordinating bodies in Scheduled Areas. The following districts, blocks and panchayats of the state are completely under PESA: Ranchi, Lohardaga, Gumla, Simdega, Latehar, East-Singhbhum, West-Singhbhum, Saraikela-Kharsawan block, Sahebganj, Dumka, Pakur, Jamtara, Palamu-Rabda and Bakoriya Panchayats of Satbarwa block, Godda-Sunderpahari and Boarijor blocks.

The Panchayati Raj Department (PRD) in Jharkhand came into existence in 1999. It mainly interacts with two ministries at the central level; the Ministry of Rural Development (MoRD) and the Ministry of Panchayati Raj (MoPR). It is considered an important department not only because of the quantum of funds that it handles but also because its activities have a direct bearing on rural development and poverty alleviation. It is also the nodal department through which an endeavor is made for grassroots democracy and decentralization of power through PRIs. PRD implements centrally sponsored schemes like the Backward Region Grant Fund (BRGF), Panchayat Mahila Evam Yuva Shakti Abhiyan (PMEYSA), and RGSY. PRD also plans and implements schemes from the state budget which include construction of Panchayat Bhawans, capacity building, special grant/prizes for PRIs, and strengthening regional offices.

The JPR Act, 2001 and Rules/byelaws made thereunder therefore provide for elected body also in addition to the Executive/Administrative body to deliver the mandate and manage administration of PRIs. Therefore, the Deputy Development Commissioner cum Chief Executive Officer (CEO) or the *Adhyaksha* is the executive head at the Zilla Parishad (ZP) or the district level. The Block Development Officer cum Executive Officer (EO) or the *Pramukh*, is the executive heads of the Panchayat

Samiti (PS) at the block level, and the Panchayat Secretary or the *Mukhia* is in-charge of the office of the Gram Panchayat (GP).

The first elections of the PRIs in Jharkhand State were held in December 2010 followed by the second in December 2015. The organizational structure of PRIs is depicted in Fig 1.4 below.

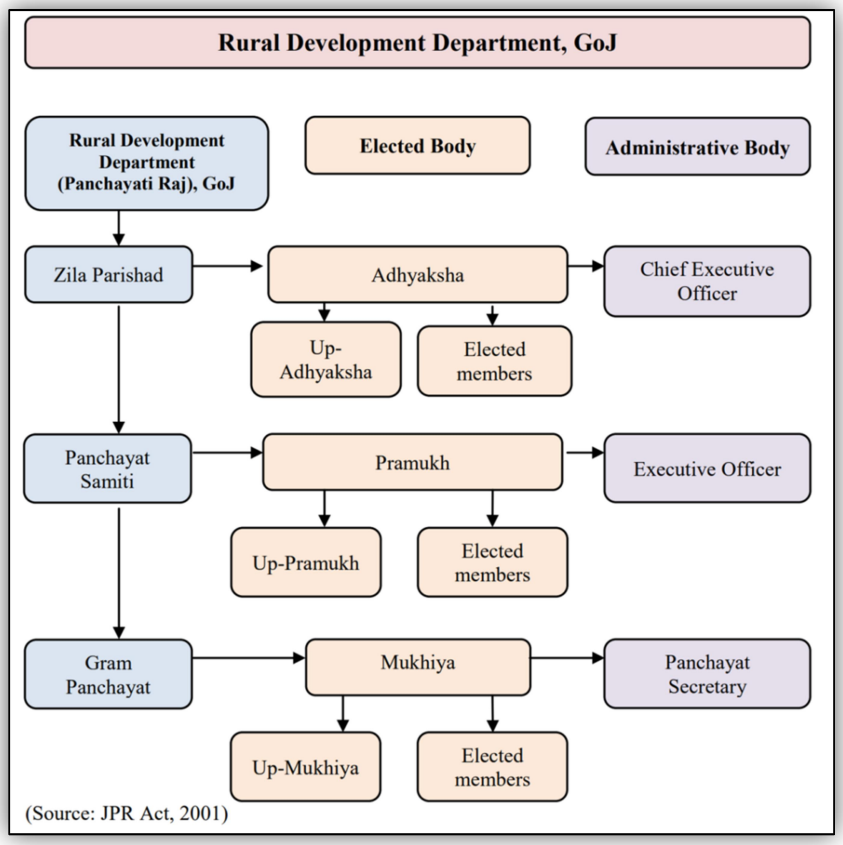



**Fig. 1.4: Organizational Structure of Rural Development Department, GoJ**

*Source:https://cag.gov.in/sites/default/files/audit_report_files/Chapter_1_An_Overview_Of_The_Functioning%2C_Accountability_Mechanism_And_Financial_Reporting_Issues_Of_Panchayati_Raj_Institutions_of_Annual_Technic.pdf*

## 1.9 ADMINISTRATIVE SETUP AND PRIS IN KANKE BLOCK

Kanke C. D. Block (Fig. 1.5) is a sub district administrative division in Ranchi District of Jharkhand State, India. It has total area of 432 km² including 247.74 km² of rural area and 184.66 km² of urban area.

It has a population of 13,17,499 including 684804 males and 632695 as females. Sex ratio is 924 per 1000 male and the literacy rate is 84.92%. There are total 2,53,026 houses in the sub-district. Ranchi CD block has 135 villages and 3 towns. Out of 135 villages in Kanke block, Sukurhuttu is most populated village with population of 11862 and least populated village is Bariatu having population only 139. There are 3 towns in Kanke sub-district which lies in Kanke administrative division. Most populated town in Kanke C.D. Block is Arsande (CT) with population of 9582.

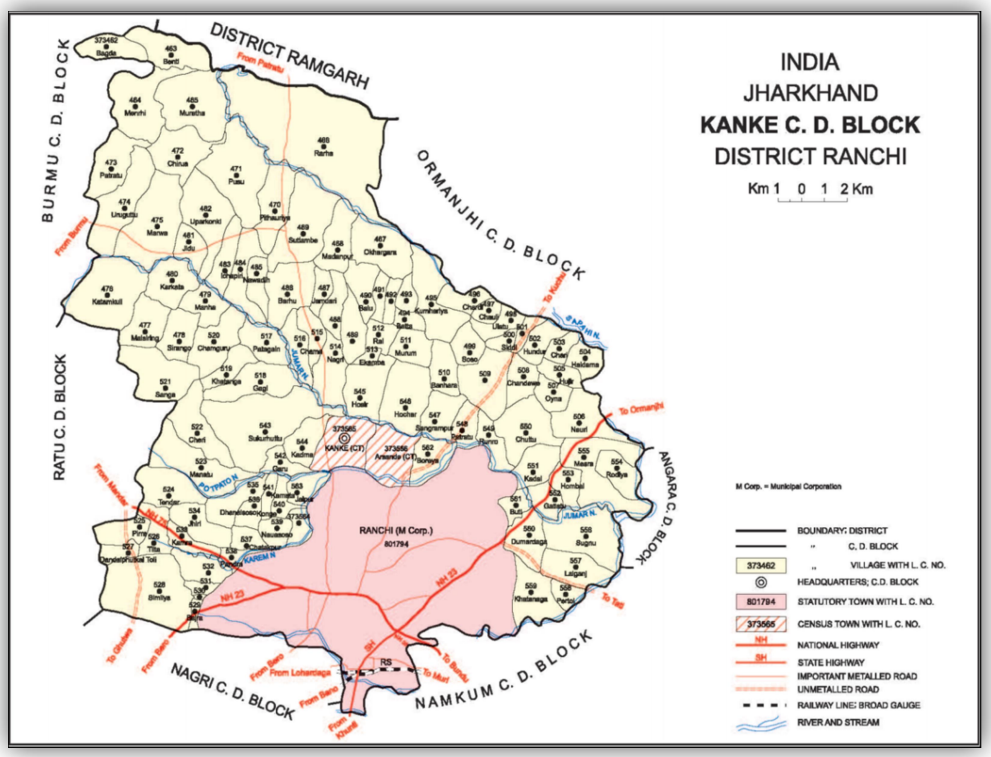



**Fig. 1.5: Map showing the administrative divisions of Kanke C. D. Block**

*Source: https://www.censusindia.gov.in/2011census/maps/atlas/20part31.pdf*

Table 1.1 presents the particulars of settlements in Ranchi district and Kanke C.D. Block and Fig. 1.5 presents the administrative divisions of Kanke C. D. Block.

**Table 1.1: Particulars of Settlements in Ranchi District and Kanke C. D. Block**

| Particulars | Ranchi District | | Kanke C.D. Block | |
|---|---|---|---|---|
| | 2001 | 2011 | 2001 | 2011 |
| Area (in sq. Kms) | 7698 | 5097 | 524.1 | 347.11 |
| Number of Sub-division | 02 | 02 | - | - |
| Number of CD Blocks | 20 | 18 | - | - |

| | | | | |
|---|---|---|---|---|
| Number of Towns | 08 | 15 | 2 | 3 |
| Statutory Towns | 03 | 02 | 1 | 1 |
| Census Towns | 05 | 13 | 1 | 2 |
| Number of Panchayats | 384 | 305 | 36 | 32 |
| Number of Villages | 2076 | 1311 | 104 | 135 |
| Inhabited | 2052 | 1296 | 101 | 103 |
| Un-inhabited | 24 | 15 | 03 | 32 |
| Total Population | 27,85,064 | 29,14,253 | 1026448 | 1317499 |
| Total Urban Population | 977821 | 1257335 | 863495 | 1100569 |
| Total Rural Population | 1807243 | 1656918 | 162953 | 216930 |
| Percentage of Rural population to total population | 64.9% | 56.9% | 841 | 56.86 |

*Source: Census India*

The following are the various committees formulated at the Kanke Block level to carry out and monitor various development plans in the community development block.

- Committee for agriculture
- Committee for communication and works
- Committee for finance, audit, planning and development
- Committee for health and environment
- Committee for woman, children and social welfare
- Committee for woman,children social welfare
- Co-operative committee
- Development committee
- E-panchayat committee
- General administrative committee
- General administrative committee for zp and panchayatsamittee
- Government estate committee
- Gram panchayat standing committee
- Gram rakshasamittee
- Health and education committee
- Infrastructure committee

## 1.10 INTRODUCTION TO STUDY AREA: NEORI GRAM PANCHAYAT, C.D. BLOCK KANKE, RANCHI DISTRICT

This section introduces the study area of Neori Gram Panchayat which is located in the Kanke Community Development (C.D.) Block of Ranchi district in the State of Jharkhand.

### 1.10.1 LOCATION AND REGIONAL SETTING OF NEORI GRAM PANCHAYAT

Neori gram panchayath as a geographical area of 388.98 hectares and is situated in Kanke C.D. Block of Ranchi district in Jharkhand. It is located 15 Km in the north-east direction from the district headquarter and State capital Ranchi, along the National Highway-33 (Hazaribagh Road) and, at 10 km from Kanke, the C. D. Block comprising the gram panchayat. The gram panchayat of Neori is surrounded by Angara Block towards East, Kanke Block towards west, Namkum Block towards South, and the state capital Ranchi towards west. Nearby villages to Neori are Karma, Kedal, Mesra (east), Mesra (west), Chandwe, Gobarhappa, Hundur, Chari, Haldama, Hujir, Oyna, Dubliya, Banhara, Murum, and Ral. Fig. 1.6 shows the location of Neori Gram Panchayat with respect to Kanke C. D. Block and Ranchi, the district headquarter and the State capital.

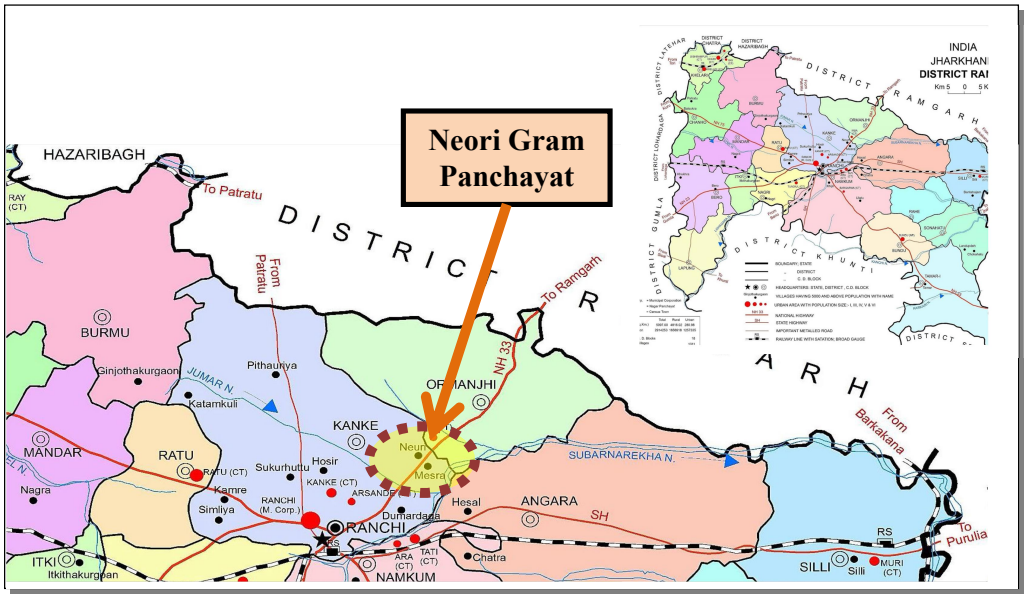



**Figure 1.6: Location of Neori Gram Panchayat**

*(Source: Census 2011)*

The gram panchayat is bifurcated by the National Highway 33 and the Ring Road. Vikas Vidyalaya prominent school is located within the gram panchayat along the highway. Fig 1.7 presents the map showing the regional setting of Neori. Other prominent institutions in the vicinity of Neori are educational institutions like BIT

Mesra which is a prominent technical university, Medanta Hospital, HCG-Curie Abdur Razak Ansari Cancer Hospital. The Birsa Biological Park is located 3 km from Neori Chowk. Fig. 1.8 and Fig. 1.9 present the Google earth profile of Neori Gram Panchayat in 2005 and 2013.

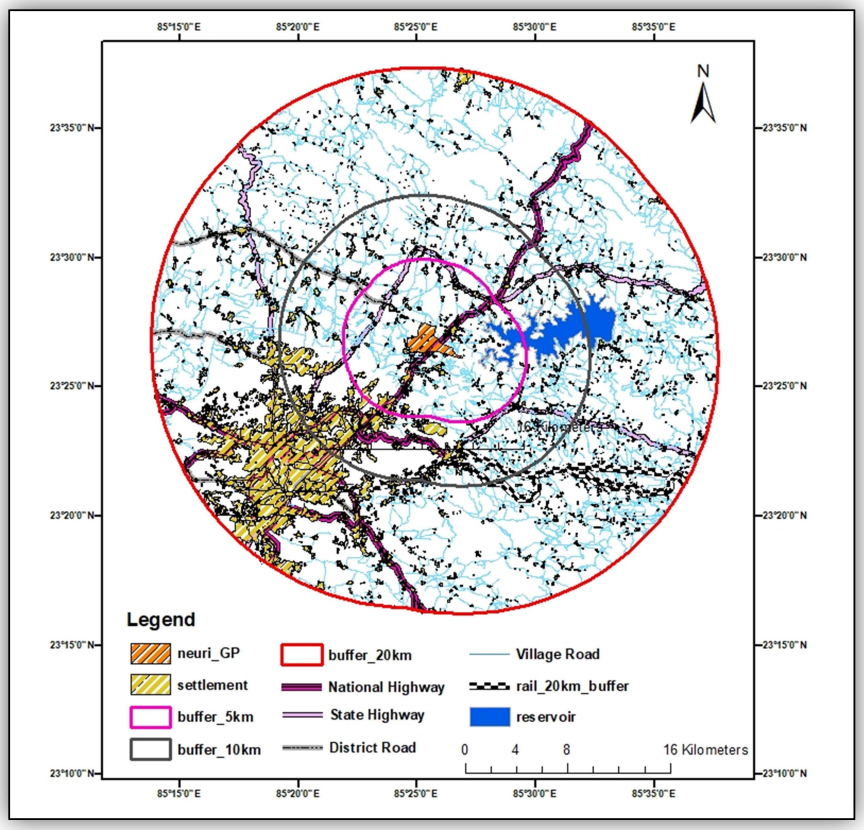



**Fig. 1.7: Map showing the Regional setting of Neori Gram Panchayat**

*Source – prepared by NRSC, ISRO*

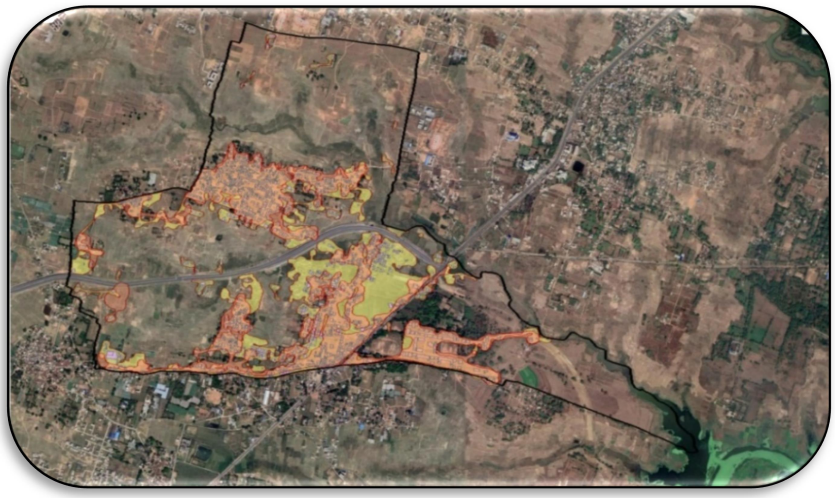


**Fig. 1.8: Map showing the profile of settlement area within Neori Gram Panchayat in 2005**

*Source: Google-earth*

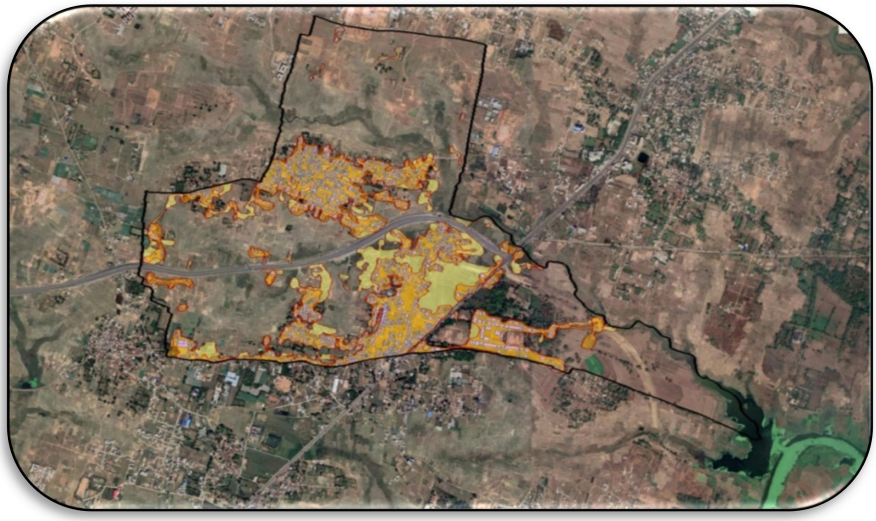


**Fig. 1.9: Map showing the profile of settlement area within Neori Gram Panchayat in 2013**

*Source: Google-earth*

### 1.10.2 DEVELOPMENT INDICATORS FOR NEORI GRAM PANCHAYAT

Neori Gram Panchayat, due to its close proximity to Ranchi, the State capital, hosts a good level of social infrastructure and physical infrastructure, however there is still lot of scope of further improvement which can be aimed and focussed upon in this Gram Panchayat Spatial Development Plan exercise. This section therefore identifies and highlights some of those gaps, which the GPSDP can aim at improving. Number of indicators under different categories has been chosen to represent the status of the Neori Gram Panchayat as shown in Table 1.2.

**Table 1.2: Development indicators of Neori Gram Panchayat**

| Sl. No | Census Indicators (2011) | | Neori Gram Panchayat |
|---|---|---|---|
| 1 | **Population** | | 6907 |
| 2 | **Total Household** | | 1230 |
| | **DEMOGRAPHIC** | | |
| 3 | **Density (pph)** | | 18 ppHa |
| | **ECONOMIC** | | |
| 5 | **% households engaged exclusively in Farm activities** | | 70% |
| | **% households engaged exclusively in Farm activities** | | 30% |
| 6 | **Land holding Sizes** | Less than 5 acre in percentage | 99.4% households |

| | | | |
|---|---|---|---|
| 7 | **Land Values (Lakh/Ha)** | Market rates (Near Road) | 4.5 lakh per decimal |
| | | Market Rates (away from Road) | 2.5 to 3.0 lakh per decimal |
| **SOCIAL** | | | |
| 8 | **Literacy Rate (%)** | | 75.73% |
| 9 | **Male- Female differential in literacy rate (%)** | | 22% more males are literate than females |
| **SPATIAL** | | | |
| 10 | **Percentage of non-residential area** | | 88.33% |
| 11 | **Extent of Commercial Space** | Percentage area | 0.04% |
| | | No. of commercial establishments | 85 |
| **KEY INFRASTRUCTURAL PARAMETERS** | | | |
| 12 | **Physical Condition** | Percentage of household having pucca houses | 30% |
| | | No. of Telephone towers | Mobile service |
| | | Percentage of Pucca streets | 47.8% bituminous;48% PCC road |
| | | No. of street light | 236 |
| 13 | **Physical Infrastructure** | Tap water | None |
| | | Households with toilets | 40% |
| | | Sewer System | 22% households have septic tank |
| | | Electricity | Available for 8-12 hrs |
| | | Drainage on streets (percentage) | 14.2% |
| | | No. of household using clean energy (LPG/ Bio gas) | 500 |
| 14 | **Social Infrastructure (numbers)** | Availability of Sub-centre/ PHC/CHC (Govt.) | Community Health Centre (CHC); health sub-centre |
| | | Medical Pvt. | Vikas nursing home |
| | | Veterinary Clinic Hospital | Yes |
| | | Education - Govt. | 2 Nos. of Primary Govt. |

| | | | |
|---|---|---|---|
| | | | school and 01 No. Senior Secondary School |
| | | Education - Pvt. | 1 No. Primary Pvt school; 4 Nos. Secondary Pvt. School, 1 No. Senior Secondary School Vikas Vidyalaya |
| | | Availability of vocational educational center/ ITI. | No vocational centre is present in the gram panchayat; nearest polytechnic is within 5 kms distance |
| | | Anganwardi | 04 |
| | | Pragya Kendra | 03 |
| **15** | **Connectivity with Town** | Approach Road- Metalled/ un-metalled | All-weather metalled road; Gram Panchayat is along NH 33 and is bifurcated by a Ring Road. |
| | | Distance from Town | 15 Kms from Ranchi |
| | | Frequency of Bus/Pvt. Vehicle | Connectivity with auto service |
| **16** | **No. of Banks/ Credit Societies** | | Two Banks |
| **17** | **Communication facilities** | Telephone exchange | Nil |
| | | Internet Café/ Common Service Centre | 01 Yes |
| **18** | **Percentage of HHs having assets** | T.V | 55.7% |
| | | radio service | 20.6% |
| | | computer | 20.5% |
| | | Two-wheeler | 25.4% |
| | | Four wheeler | 3.85% |
| | | Mobile Phones | 73.45% |
| | | LPG | 15.8% |
| | | Households having all above mentioned assets | 4.1% |

*Source – Primary survey*

Of the total gram panchayat area of 388.98 ha, as per Census 2011 only 52.81 ha were net sown area which increased to 97.98 ha in 2017 according to a survey conducted in the same year. Also the extent of irrigated area increased from 7.85 ha in 2011 to 97

ha in 2017. Since, 70% of the households, in the gram panchayat, are engaged in farm activities and 99% of the area is irrigated, therefore, soil testing facility and fertilizer shop are located to further support agricultural activities. However the gram panchayat does not have a government seed center and this facility is located at a distance of more than 10kms from the panchayat.

The gram panchayat is connected to all weather road and also a National Highway, rather the highway bifurcates it in two sections. The gram panchayat also has autos as the available form of public transport and is connected by it with the State and district headquarter, Ranchi. The gram panchayat has some 8 to 12 hrs of electricity supply for domestic purposes and 41% of households depend upon and use clean energy sources like LPG or Bio-gas.

With regards to health and sanitation aspects the Gram panchayat is not yet free of open defecation and thus more toilets have to be constructed at the community and household level. Also there is no community waste disposal system, drainage facility, nor availability of piped water supply in the gram panchayat. Therefore there is immense scope of development and construction of these facilities and amenities in the panchayat to provide a better quality of life in it.

Neori gram panchayat has significant level of social infrastructure with the availability of a primary school, senior secondary school, and primary and community health centers. A veterinary clinic hospital is also present in the gram panchayat since the year 2017. To further support the functioning of the gram panchayat, it has a Post Office, banks and ATMs, and also an internet café common service center. But the gram panchayat lacks any vocational training center. The gram panchayat has a well-functioning Public distribution system and an Aanganwadi center. There are some poverty alleviation and women empowerment programmes which have been considered in the Gram Panchayat. Around 138 or 11% of households have been mobilized into SHGs, 16.26% of households are supported by village based agricultural extension workers, and 250 households are supported by livestock extension workers. However, none of the households have been mobilized into producer groups.

### 1.10.3 Planning Framework and Existing Plans for the Gram Panchayat

The Ranchi Master Plan (2037), which was notified on 13.08.2014, has 7 Planning Districts (Zones) in Ranchi i.e. A, B, C, D, E, F, G H. The Neori Gram Panchayat,

which is a revenue village of Kanke C. D Block (Fig. 1.10), is included in Unit 6 of Planning district or Zone 'C' of Ranchi Planning area and thus the provisions of statutory Ranchi Master Plan of 2037 for the respective Zone is applicable to it. Zone C is located on north-eastern side of Ranchi City, and is bounded by Morabadi Road from west and Hazaribagh Road from east. (Fig.1.11).

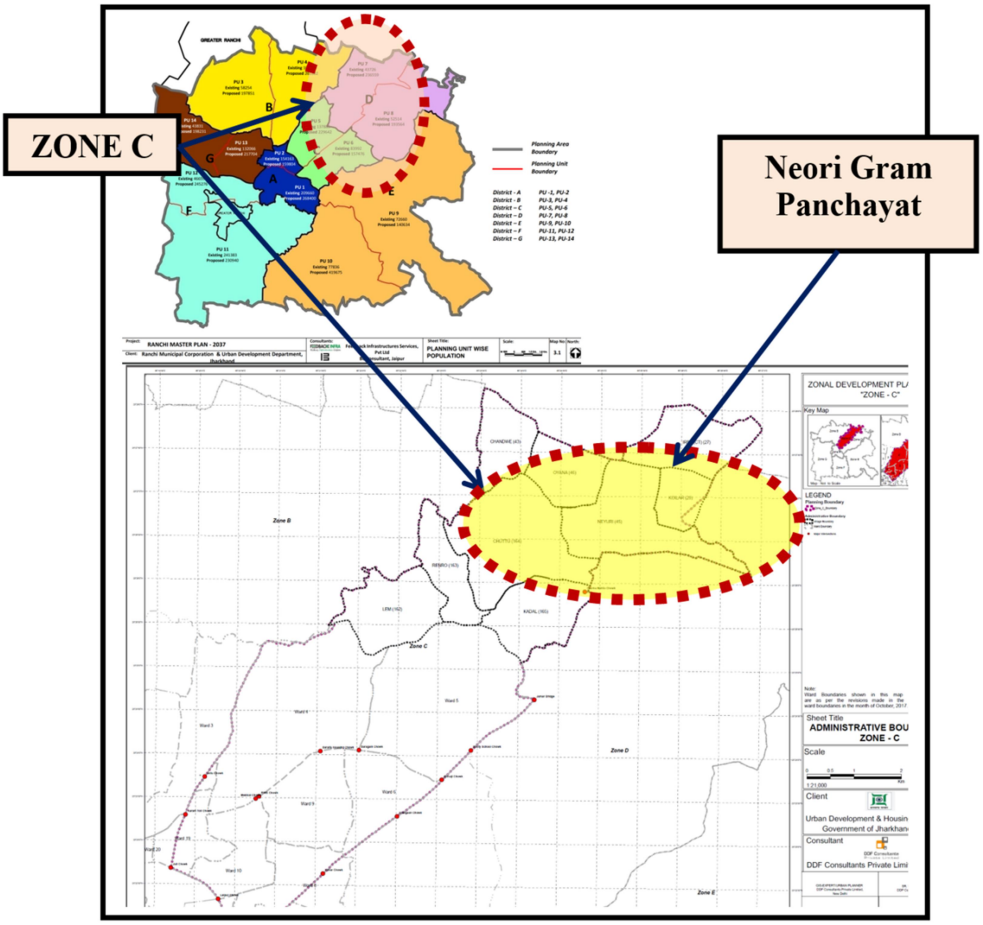



**Fig. 1.10: Location of Neori Gram Panchayat with respect to Planning Area of Ranchi.**

*(Source: Ranchi Master Plan 2037)*

The Master Plan of Ranchi, 2037 has proposed a new city center and a corridor of whole commercial on inner circular road present Ring road in this zone, such that the other zones will be dependent on Zone C for the new C.B.D. Thus, the TOD Zone, New City Centre and IT Park are key planning challenges in this zone as per Master plan guidelines to support the development of this area. Fig 1.11 shows the proposed development in planning area of Ranchi as per Ranchi Master Plan 2037.

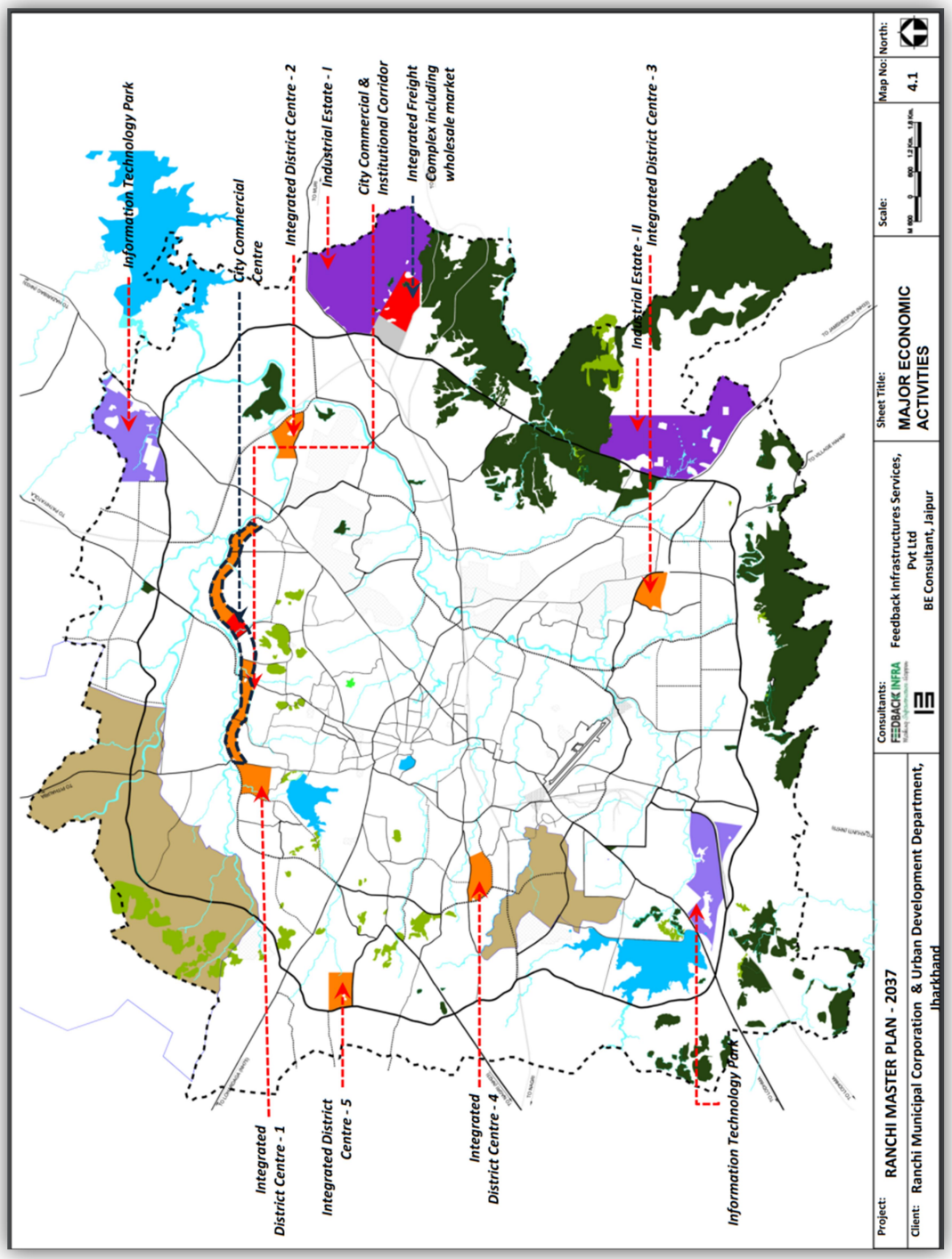



**Fig. 1.11: Proposed development as per Ranchi Master Plan 2037**

*(Source: Ranchi Master Plan 2037)*

Following its Constitution as a separate State, Jharkhand enacted its Panchayati Raj Act. This has been done in accordance with the provisions of the 73rd Amendment to the Constitution and that of the Panchayat Extension to the Scheduled Areas) Act,

1996.As per section 10 of Chapter II of the JPR Act 2001, the Gram Sabha has the power to approve all plans including Annual Plans, programs and projects for social and economic development before such plans, programs and projects are taken up for implementation by the Gram Panchayat. It is also mentioned that it has the power to control local schemes, and over sources and expenditure of such schemes. Details of powers of the Gram Sabha as per the JPR Act are given in the box below:

**Box 1.1**

**Powers and functions of Gram Sabha:** Gram Sabha shall perform the following functions (as stated under rules prepared by the State Government)

i) Identification of economic development schemes for the village and formulation of criteria for fixing their priorities.

ii) Approval of schemes for social and economic development including all the annual schemes pertaining to the Gram Panchayat, before implementation of programs and projects.

iii) Discussions on annual budget of the Gram Panchayat and making recommendations thereto;

iv) Deliberations on audit report and annual accounts of the Gram Panchayat;

v) Deliberations and confirmation of appropriate utilization of funds for the schemes, programmes and projects specified under section 10 (a) a (2) by the Gram Panchayat;

vi) Identification and selection of persons as beneficiaries under poverty alleviation and other programmes;

vii) Assuring distribution of funds or resources among beneficiaries and their proper use.

viii) Activating people towards community welfare programmes and receiving contributions in cash or kind or in both and participation of voluntary worker;

ix) Enhancing general conscience unity and amity among people in general;

x) Keeping control through Gram Panchayat over such organisations and such functionaries in social sectors, as have been transferred to the Gram Panchayat or appointed by the Gram Panchayat;

xi) Managing natural sources as land, water, forest falling within the limits of the village area according to the constitution and other relevant laws then in force;

xii) Giving advice of the Gram Panchayat as to regularization and utilization of small reservoirs;

xiii) Keeping watch over local schemes and over sources and expenditure of the said schemes;

xiv) Sanitation and conservancy as well as prevention and solution of nuisance;

xv) Construction, repairs and maintenance of public wells and ponds as well as making available drinking water for domestic use;

xvi) Making available and maintenance of rural roads, culverts, bridges, embankments and other works and buildings of public utility.

xvii) Construction and maintenance of rural roads, culverts, bridges, embankments and other works and buildings of public utility.

xviii) Construction, maintenance and conservancy of public roads, cess-pits, drains and other public

places;

xix) Filling up of wells not in sanitary ponds, ditches and holes;

xx) Providing light on village paths and other public places;

xxi) Removal of hindrances and projections to public streets and places as well as the spaces which are not private properties or which are open for public use whither such places are vested in the Panchayat or belong to the State Government.

xxii) Regulating and controlling recreations, games-shows, sops, eating houses and vendors of beverage, sweets, milk and similar other articles;

xxiii) Regulating construction of houses, cess-pits urinals, drains and flush latrines;

xxiv) Management of public land and management, extension and development of village site;

xxv) Disposal of corpuses, carcasses (including those unclaimed) and other obnoxious articles in such a way that the same may not be injurious to health;

xxvi) Providing places separately for dumping rubbish;

xxvii) Responsibility for sale and Test of meat;

xxviii) Taking care of the Gram Sabha-properties;

xxix) Establishment and management of pounds and maintenance of records regarding cattle;

xxx) Taking care of ancient and historical monuments excepting those which have been declared to be of national importance and maintaining grazing ground and other lands lying within control of the Gram Sabha;

xxxi) Maintaining records of births, deaths and marriages;

xxxii) Assisting in census or other surveys done by centre, state or other organisation constituted lawfully;

xxxiii) Giving assistance in control of contagious disease, vaccination etc. work;

xxxiv) Helping the disables and destitute (including women and children);

xxxv) Expansion of youth welfare, family welfare and sports;

xxxvi) Afforestation and conservation of village forestry;

xxxvii) Abolition of dowry like social evils;

xxxviii) Implementation of orders of the State Government or other competent officers to improve the condition of scheduled castes, scheduled tribes, backward classes and to prevent un-touchability;

xxxix) Preparing schemes for basic amenities and making arrangements therefore;

xl) Helping disabled women/children;

xli) Execution of work assigned of construction work as per specified schemes within the Gram Sabha area;

xlii) Exercise and discharge of powers and functions assigned by the State Government under this Act or any other law in force in the State for the time being

As far as spatial planning is concerned, there is no such land use plan prepared for Neori Gram Panchayat, and Planning is restricted to sectoral planning at present in the

form of the GPDP. The current GPDP of the gram panchayat only talks about infrastructure projects, as can be seen in Table 2-8, there is no attention to the spatial expansion of the abadi area and its implications on the quality of life, or the changing spatial character caused by the recent land diversions. There is a need to relate these funds phase wise with the development priorities of the village. In dynamic peri-urban areas, these aspects are very much required to be considered and incorporated in a statutory planning framework for rural settlements. Hence there is need for a GPSDP for the gram panchayat, which may serve as a template or model GPSDP for all such rural settlements in the state of Jharkhand.

### 1.10.4 CONSTITUTION AND IDENTIFICATION OF GRAM PANCHAYAT

Neori Gram Panchayat is a revenue village in Kanke C. D. Block. The three-tier panchayat elections, for the first time in the State of Jharkhand were held in the December of 2010.

**Table: 1.3: Wards/ Tolas in NeoriPanchayat**

| Ward No: | Ward Name/ Tola | Population |
|---|---|---|
| **1** | Ban Toli | 498 |
| **2** | Butgoda | 475 |
| **3** | MahtoTola | 501 |
| **4** | SardarTola | 480 |
| **5** | ChandniTola | 487 |
| **6** | School Mohalla | 521 |
| **7** | Nayi Masjid Mohalla | 447 |
| **8** | MahuaToli | 495 |
| **9** | BargadhaTola | 527 |
| **10** | KaramTaand | 515 |
| **11** | KenduaToli East | 500 |
| **12** | KenduaToli West | 471 |
| **13** | Bazaar Taand | 540 |
| **14** | VikasVidyalaya | 450 |

*Source: Neori GP records*

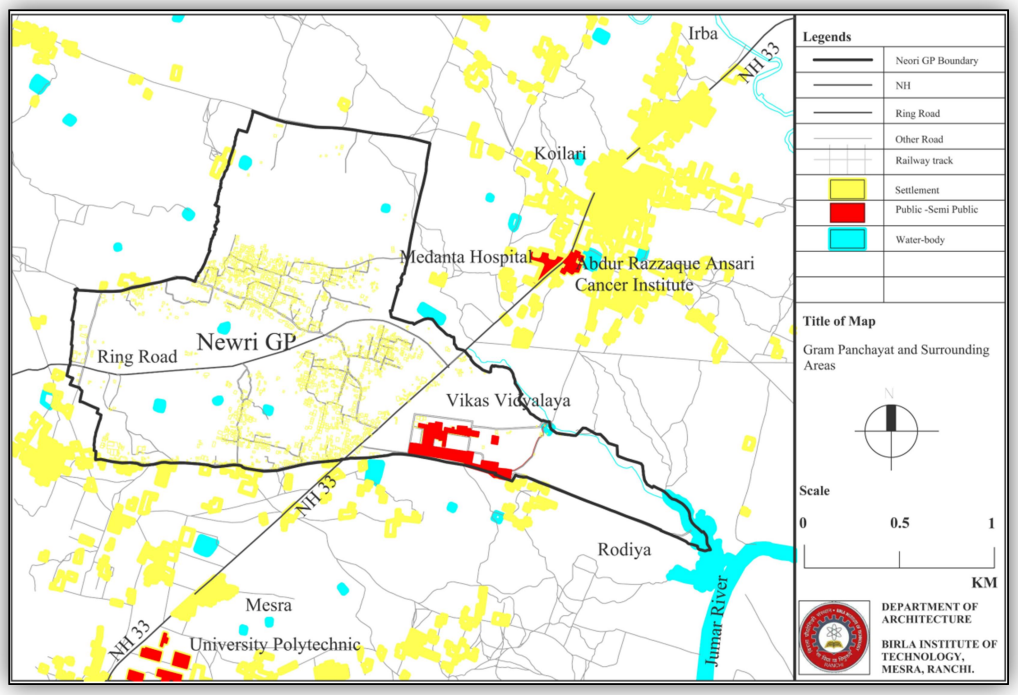



**Fig. 1.12: Map showing the administrative boundary of Neori Gram Panchayat**

*Source: Prepared by the BIT Mesra Team*

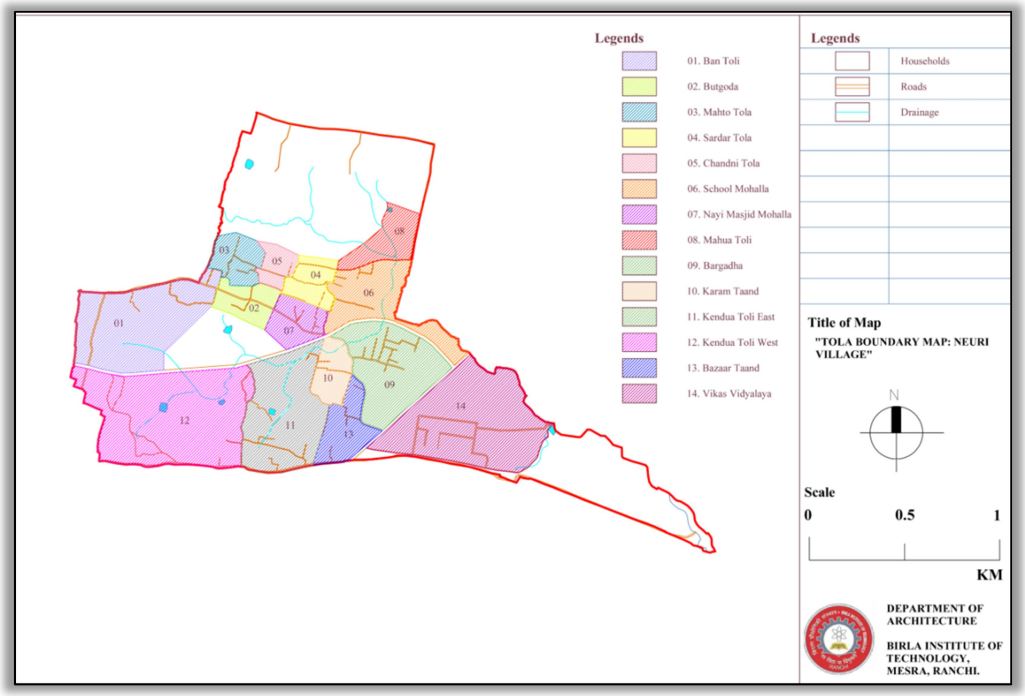



**Fig. 1.13: Ward Map of Neori Gram Panchayat**

*Source: Prepared by the BIT Mesra Team*

As per the 2010 Gram Panchayat elections the gram panchayat had 10 Wards or Tolas which increased to 14 wards in the year 2015. Each ward has a population of approximately 500 people (Table 1.3). Fig 1.12 presents the map showing the boundary of Neori Gram Panchayat. Table 1.3 presents the different wards/ tolas in Neori gram panchayat with their respective population size and Fig. 1.13 presents the ward map.

### 1.10.5 CURRENT FLAGSHIP PROGRAMS OF GOVT. OF INDIA AND GOVT. OF JHARKHAND IN NEORI GRAM PANCHAYAT

PRIs are implementing agencies of the Centrally Sponsored Schemes.In the state of Jharkhand, the major schemes being implemented by the Panchayati Raj state department are Backward Region Grant Fund (BRGF) and Rajiv Gandhi Panchayat Sashatrikaran Abhiyan (RGPSA), Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Grants received under Fourteenth Finance Commission (14FC) and State Plans. Under these schemes, construction of buildings, roads, culverts, drains, ponds, wells, chapakal, chabootara etc. are done by the PRIs.

The Ranchi District has the following major programmes being operated by the Ministry of Rural Development in rural areas,

- Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) for providing wage employment,
- DAY-NRLM
- Pradhan ManntriAawaasYojna-Gramin
- PradhanMantri Gram SadakYojana (PMGSY) for construction of quality roads
- National Social Assistance Programme (NSAP) for social pension
- Integrated Watershed Management Programme (IWMP) for improving the productivity of the land
- Sansad Adarsh Gram Yojna
- RuRBAN mission
- Water Conservation Stories
- Sabki Yojana Sabka Vikas
- Gram Swaraj Abhiyan
- DISHA
- Mission Antyodaya
- DDUGKY
- PMGSY
- DIKSHA

- SWACHH Gram

### 1.10.6 Administrative Hierarchy in Neori Gram Panchayat

Neori Gram Panchayat is a revenue village which as per the 2015 Gram Panchayat elections has 14 wards. Each ward has a population of approximately 500 people. Prior to it during the 2010 panchayat elections there were only 10 wards and hence there was one Mukhiya or Gram Pradhan or the Panchayat Secretary, and one Panchayat Samiti Sadasya. Presently there is one Gram Pradhan Mukhiya and two panchayat samitis.

Table 1.5 presents the administrative structure of Neori GP and Table 1.6 lists the names of the elected representatives of the fourteen wards of the gram panchayat.

**Table 1.5: Administrative Structure of Neori Gram Panchayat**

| Year of Panchayat Elections | Number of Wards | Nomenclature of Panchayat Administrative Structure and Heads | Number of members | Name of the Elected Representative |
|---|---|---|---|---|
| **2010** | 10 | Panchayat Secretary (Mukhiya) | 01 | Sadho Oraon |
| | | Panchayat Samiti Sadasya | 01 | Madan Mahto |
| **2015** | 14 | Panchayat Secretary (Mukhiya) | 01 | Shanti Devi Munda |
| | | Up Mukhiya | 01 | Md. Nadeem Ansari |
| | | Panchayat Samiti Sadasya | 02 | Tarkeshwari Devi/ Aasha Kumari |

*Source: Neori GP office records*

**Table 1.6: Elected Representatives (Ward Sadasya) of different Wards in Neori Gram Panchayat**

| Ward No: | Ward Name/ Tola | Population | Name of Ward Sadasya (Member) |
|---|---|---|---|
| **1** | Ban Toli | 498 | Meena Devi |
| **2** | Butgoda | 475 | Seema Kumari |

| | | | |
|---|---|---|---|
| **3** | Mahto Tola | 501 | Madhu Kumari |
| **4** | Sardar Tola | 480 | Md. Nadeem Ansari |
| **5** | Chandni Tola | 487 | Md. Ezaz Ansari |
| **6** | School Mohalla | 521 | Momina Khatoon |
| **7** | Nayi Masjid Mohalla | 447 | Savita Devi |
| **8** | Mahua Toli | 495 | Nazneen Parveen |
| **9** | Bargadha Tola | 527 | Sandeep Pahan |
| **10** | Karam Taand | 515 | Anil Gorain |
| **11** | Kendua Toli East | 500 | Firdaus Ansari |
| **12** | KenduaToli West | 471 | Sukro Devi |
| **13** | Bazaar Taand | 540 | Bharti Devi |
| **14** | Vikas Vidyalaya | 450 | Kusheshwar Munda |

*Source: Neori GP office records*

### 1.10.7 STATUS OF PARALLEL BODIES AT THE GRAM PANCHAYAT LEVEL

As per the JPR Act 2001, a GP can constitute eight Standing Committees for discharge of its functions and duties, and such committees are under general control of the GP and exercise powers as may be conferred on them by the GP.

The JPR Act of 2001 has set the provision of constituting eight standing committees (SCs) for discharging Gram Sabha functions and duties. The committees are namely: (i) Village Development committee, (ii) Government estate committee, (iii) Agriculture committee, (iv) Health Committee, (v) Gram Raksha Samiti, (vi) Infrastructure committee, (vii) Education committee and social justice committee, (viii) Vigilance committee. The Village Development Committee prepares a scheme for all-round development of the village and it is presented before the Gram Sabha for its approval. Table 1.7 presents the list of standing committees and committee members of Neori Gram Panchayat.

**Table 1.7: Eight Standing Committees and Committee Membersof Neori Gram Panchayat**

| S. No | Name of the Committee | Name of Committee Members |
|---|---|---|
| **1** | Health Committee (Swasthya Samiti) | Lalo Devi (Chairman) |
| | | Amrendra Kumar (Secretary) |
| | | Manju Devi (Member) |
| | | Basanti Devi (Member) |

| | | |
|---|---|---|
| | | |
| **2** | Agricultural Committee (Krishi Samiti) | Chandrika Devi (Chairman) |
| | | Rupa Devi (Secretary) |
| | | Pramila Devi (Member) |
| | | Anu Devi (Member) |
| | | |
| **3** | Government estate committee (Sarvajanik Sampada) | Sushma Devi (Chairman) |
| | | Saraswati Devi (Secretary) |
| | | Balmati Devi (Member) |
| | | Pammi Devi (Member) |
| | | |
| **4** | Village Development committee (Gram Vikas Samiti) | Haseeb Ansari (Chairman) |
| | | Naushaad Ansari (Secretary) |
| | | Asad Ansari (Member) |
| | | Alam Ansari (Member) |
| | | |
| **5.** | Vigilance committee (Nigrani Samiti) | Baalmuni Devi (Chairman) |
| | | Md. Aslam Ansari (Secretary) |
| | | Mukesh Thakur (Member) |
| | | Md. Aamir Ansari (Member) |
| | | |
| **6.** | Education committee and social justice committee (Sikshaavam Samajik Samiti) | Anil Kumar (Chairman) |
| | | Krishna Thakur (Secretary) |
| | | Satish Singh (Member) |
| | | TausifAalam (Member) |
| | | |
| **7.** | Infrastructure Development Committee (Aadhaar Bhoot Sanrachna Samiti) | Meera Devi (Chairman) |
| | | Lalita Devi(Secretary) |
| | | Poonam Kumari (Member) |
| | | Anita Devi (Member) |
| | | |
| **8.** | Gram Raksha Samiti | Anil Gaurait (Chairman) |
| | | Aazad Ansari (Secretary) |
| | | Rickey Singh (Member) |
| | | Wasim Ansari (Member) |

Also at the village level, various committees have been are set up by departments as part of their schemes. For example, Rogi Kalyan Samitis have been set up under the National Rural Health Mission (NRHM) in every village. Sarva Shiksha Abhiyan (SSA) requires the setting up of village education committees or parent teacher committees.

Moreover, Jharkhand is the only State where the Act states that every Gram Sabha has to establish a Gram Kosh (Village fund) consisting of the following four parts: (i) Grain Fund, (ii) Labour Fund, (iii) Commodity Fund, and (iv) Cash Fund. Donations, incentive amounts, and other incomes can be deposited in this fund. Donations, incentive amounts and other incomes can be deposited in Gram Kosh.

### 1.10.8 Land-use and Land-use Distribution inNeori Gram Panchayat

Table 1.8 presents the land-use dostribution in Neori Gram Panchayat under different categories. Of the total gram panchayat area of 388.98 ha, 11.67% is under residential use which is majorly distributed on the north and south of the east west alligned Ring Road. Commercial activites with merely 0.04% distribution of land in this activity is mostly located along the National Highway 33. Major land-use with 60.07% coverage is seen under agricultural use. 14% of land is occupied by public and semi-public uses. A large chunk of it is occupied by Vikas Vidyalaya. Around 10.6% of the land is under vacant category and some 3.08% is occupied by the transportation networks.

Fig. 1.14 presents the Land-use/ Land-cover map of Neori GP.

**Table 1.8: Land-use/ Land cover distribution in Neori Gram Panchayat**

| Sl. No. | Land use / Land cover Class | Area (ha) |
|---|---|---|
| 1. | Agriculture land | 248.27 |
| 1. | Agriculture Plantation | 1.86 |
| 2. | Built-up commercial | .0085 |
| 3. | Industry/ Factory | 5.27 |
| 4. | Rural Mixed Settlement | 45.46 |
| 5. | Other Area/ Brick Kiln | 0.68 |
| 6. | Other Area/ Educational | 11.71 |
| 7. | Village Settlement | 71.32 |
| 8. | Park / Recreation Area | .0122 |
| 9. | Lake/ Pond | 9.34 |

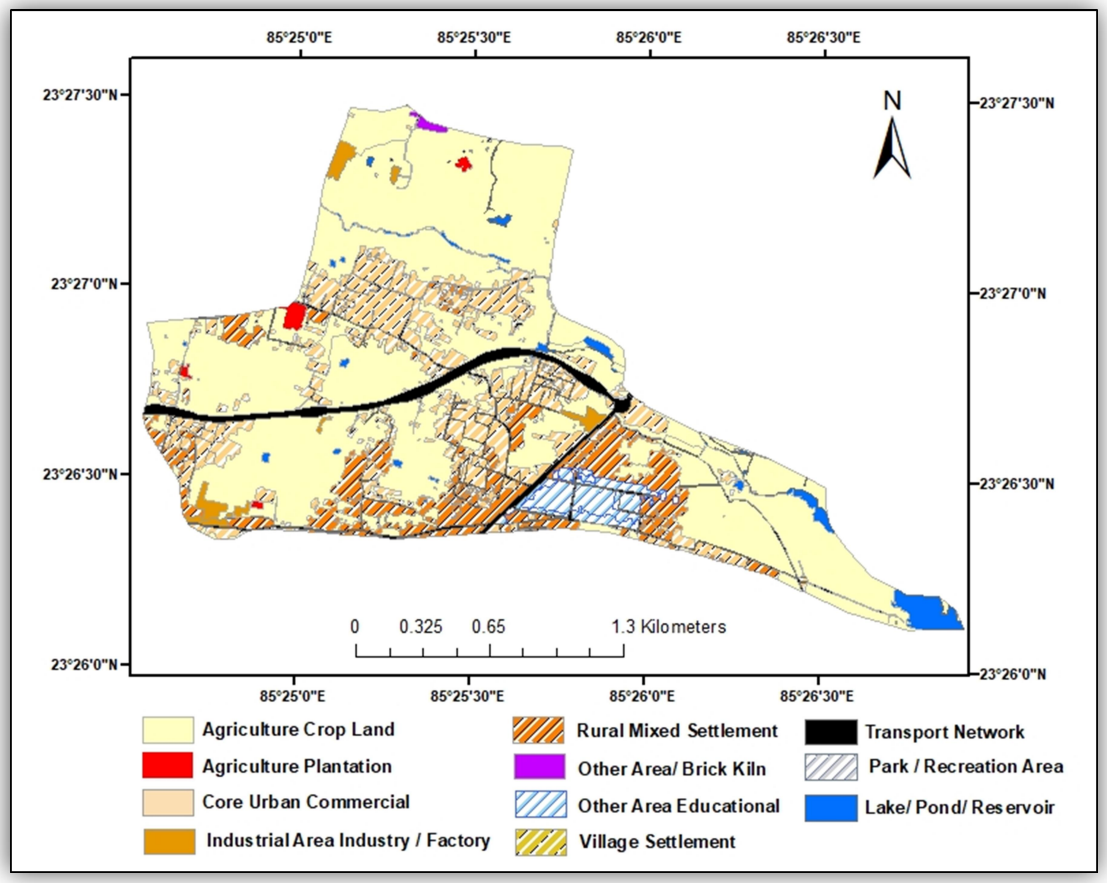



**Fig. 1.14: Existing Land use/ land cover map of Neori Gram Panchayat**

*(Source: Prepared by NRSC/ISRO)*

## 1.11 SWOT ANALYSIS FOR NEORI GRAM PANCHAYAT

| | |
|---|---|
| **Strength** | • The major strength of the GP is its locational advantage along NH 33 and intersected by Ring Road of Ranchi<br>• Proximity to the capital city identifies this GP as a source of casual labour for it<br>• 55% of the population are within working age group of 16 to 55 years<br>• Formidable percentage are employed as manual casual labour who can be redirected to thriving profession through skill development<br>• High land value appreciation of land pockets abutting to NH 33 and Ring Road, thereby creating opportunities for inflow of funds to individuals / groups / societies.<br>• Availability of land for development.<br>• Interest and willingness of stakeholders in participatory planning<br>• Very vibrant elected members willing to bring air of development within the GP.<br>• State government's financial support for various convergence schemes.<br>• The GP historically has never been affected with regular occurring natural calamities and disasters like earthquake, flood, avalanches, famine, ground subsidence, arsenic contamination, droughts etc. |
| **Weakness** | • Lack of basic infrastructure at the ground level including piped potable water supply, sanitation system, solid waste management.<br>• Electric supply to various household and institution lacks continuity and remains for 10-12 hours per day.<br>• Lack of maintenance of basic infrastructure like roads etc.<br>• Adhoc selection of street lighting schemes.<br>• Lack of secondary and higher secondary level institutions.<br>• Large sections of the population are illiterate or have very elementary level education.<br>• Only 3.38 % of the population are graduates and above.<br>• Only 6 households own more than 2.5 acres of irrigable land which signifies presence of only few affluent families in the GP.<br>• A stunning 84% of the population earns less than Rs. 5000 a |

| | |
|---|---|
| | month which indicates a very high poverty index.<br>• Inspite of close proximity to capital city and presence of NH 33 flanging it and Ring Road intersecting it, such high poverty level indicates lack of guidance for channelization of resources.<br>• Lack of large scale development initiatives in the GP inspite of presence of NH and Ring Road flanging / intersecting it.<br>• Lack of use of complete ICT technologies prescribed by Government of India<br>• Lack of implementation of all Rural India upgradation initiatives of Government of India.<br>• The GP has sometimes been affected with cyclonic storms though of less intensity. |
| **Opportunities** | • The presence of NH 33 and Ring Road around the GP is a large opportunity for massive development of the GP.<br>• There are chances of high land value appreciation of lands abutting to NH and Ring Road due to increase in the peripheral limits of Ranchi Municipal Corporation.<br>• It can serve as base for supply of skilled labour in future for the city of Ranchi if training and skill upgradation facilities are imparted.<br>• With increased effects of urbanisation for the city of Ranchi, the GP has opportunity to foster growth of its non-agrarian economy<br>• High percentage of working class in the age group of 16 to 55 years can provide opportunity for starting of various entrepreneurship program to suffice the demand of NH based activities.<br>• With so less development on records (as per Mission Antodaya data), there are opportunities to bring about integrated holistic development of the GP. |
| **Threats** | • The development scenario of the GP is largely hit with managerial apathy, fund crunch and piece-meal development. Lack of sustainable and integrated planning approaches may poses threat to the Neori GP to fall in the category of backward GP in the country.<br>• With the price appreciation of land pockets abutting to NH and Ring Road, there are threats of great economic divide between inhabitants of these land pockets and inhabitants of interiors of the GP. |

| | |
|---|---|
| | • High poverty index and formidable percentage of illiterates in the GP threatens appreciation of development initiatives and participatory planning specially with respect tomanaging of funds and resources to be made available for planning process. |

# CHAPTER 2

# NATURAL RESOURCES INVENTORY AND SPATIAL ANALYSIS USING GEOSPATIAL TECHNOLOGIES

# CHAPTER 2: NATURAL RESOURCES INVENTORY AND SPATIAL ANALYSIS USING GEOSPATIAL TECHNOLOGIES

## 2.1 INTRODUCTION

Developmental planning is a complex process of decision making based on the information about the status of resources, socio-economic conditions and institutional constraints. Reliability of the databases, both the spatial and non-spatial, is therefore crucial to the success of the developmental planning. Hence, it is necessary to understand various elements of Gram Panchayat and their interrelationship for ecological planning. The ability of space technology for obtaining systematic, synoptic, rapid and repetitive coverage in different windows of the electromagnetic spectrum, and over large areas from its vantage point in space, has made this technology unique and powerful. Indian Remote Sensing (IRS) satellites are providing timely information from regional level studies to farm level studies through multi sensor resolutions. Thus, Remote sensing and GIS are playing a rapidly increasing role in the field of land and water resources management and also becoming more and more important for environmental applications. There is a strong synergy between remote sensing and GIS, as remote sensing data are a major source of spatial information in GIS analysis and GIS data can be used as ancillary information to support remote sensing data interpolation. The synergy between these two technologies is a major advantage in the use of an integrated approach. Over the last two decades remote sensing and GIS have been widely used for the preparation of different types of thematic layers and integrating them for different applications that include land and water resources planning, agricultural applications, water resource management, disaster management, forestry applications, watershed management and urban applications etc. The present study focuses on the inventory and analysis of natural resources for Neori Gram Panchayat with specific objectives as given below.

### 2.1.1 OBJECTIVES

1. Inventory and spatial analysis of natural resources that include thematic layers viz., infrastructure layers, LU/LC, slope, drainage network & water bodies, contours, soil etc.
2. Long term analysis of Rainfall.
3. Long term assessment of surface water potential
4. Generation of Land and Water resource development plans

## 2.2 INVENTORY OF NATURAL RESOURCES USING HIGH RESOLUTION SATELLITE DATA

Potential tools such as remote sensing and GIS techniques are utilized for generation of various thematic resource maps in conjunction with collateral data. Data integration and generation of development plans are carried out in Geographic Information System environment.

### 2.2.1 INFORMATION SOURCES FOR DEVELOPMENTAL PLANNING

Satellite data IRS -1D LISS III data, Cartosat and IRS P6 LISS IV data and other collateral data form major source for preparation of various thematic maps as spatial database. The data acquired from the multi-spectral sensors LISS IV (5.6 m resolution) and CARTOSAT (2.5 m resolution) of the Indian Remote Sensing Satellite (IRS) series are extensively used for generating spatial databases. Very high-resolution satellite data (Cartosat 2S &Komsat 3A), is analyzed at finer resolutions to update the spatial layers needed for generating the value-added Land resource and water resource development plans. The data needed for this study is studied in detail and the collected primary maps have been grouped into hydro-geomorphological, topographical, land use/land cover, hydrology and socio-economic parameters (Table 2.1). Subsequently, these primary maps are used to produce utilitarian types of maps to serve planning decisions. They are derived, in some cases, by direct translation of single thematic map and in others by combination of two or more thematic maps or chosen parameters of the different themes (Table 2.2). Natural resources data representing environmental status of the study area that were generated under various national level projects at 1:50000 scale was considered for the present study and are presented below. The database was standardized for integrated analysis under GIS environment.

**Table 2.1: Information sources for development planning**

| Data/map | Source | Spatial/Non-spatial | Scale |
|---|---|---|---|
| Digital Elevation Model | Cartosat Stereo data | Spatial | 10 m |
| Contour | CARTODEM | Spatial | 5m |
| Geological map | Rajiv Gandhi National Drinking Water Mission | Spatial | 1:50K |
| Geomorphological map | | Spatial | 1:50K |
| Structures/Lineaments | | Spatial | 1:50K |
| Soil | JSAC | Spatial | 1:50K |
| Land use/cover | Very high-resolution data | Spatial | 1:4K/10K |
| Drainage map | High resolution satellite data | Spatial | 1:4K/10K |
| Surface water bodies | | Spatial | 1:4K/10K |
| Meteorological data | IMD | Spatial | 25 km grid |

| | | | |
|---|---|---|---|
| Settlement | High resolution satellite data | Spatial | 1:4K/10K |
| Infrastructure | | Spatial | 1:4K/10K |
| Village boundaries | Census Directorate, NIC, NRSC | Spatial | 1:50K |
| Population | | Non-spatial | |
| Demography | | Non-spatial | |

**Table 2.2: Derived spatial databases required for planning**

| Derived map | Theme map | Remarks |
|---|---|---|
| Contour/Slope | Topographical map/IRS PAN stereo data | Derived from DEM |
| Groundwater potential | Geology, Geomorphology, borewell, Lithology and yield data | Integration of thematic maps and point database |
| Surface water potential | Slope, soil map, land use, rainfall and micro-watershed boundary | SCS-CN technique through integration of layers |
| Water Resource Development Plan | Slope, soil map, land use, drainage order, lineament, Runoff Potential | Multi Criteria analysis |
| Land Resource Development Plan | Slope, soil map, land use, Ground Water Potential, Geomorphology | Multi Criteria analysis |

## 2.3 SATELLITE DATA USED

### 2.3.1 HIGH RESOLUTION SATELLITE DATA

Resources at LISS 4 satellite data acquired during 2018 was used for GPSDP planning. The LISS-4 multispectral high-resolution sensor is the prime instrument of ResourceSat-2 satellite.

### 2.3.2 VERY HIGH-RESOLUTION SATELLITE DATA

Resource mapping at 1:4000 scale was carried out using VHRS data at sub meter resolution acquired using Komsat 3 sensor. KOMPSAT-3A will provide panchromatic resolution of 0.55m and multispectral resolution of 2.2m and also has an infrared sensor at 5.5m resolution. The merged product is generated with spatial resolution of 0.7m (Fig. 2.1).

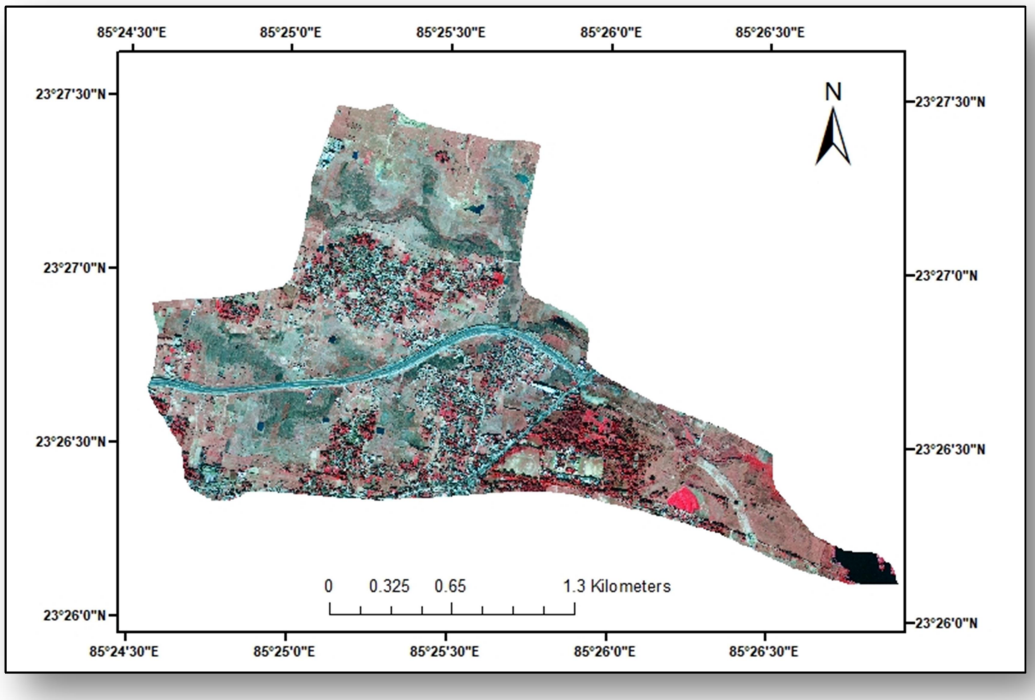



**Fig. 2.1: Neori GP as seen through Very High-Resolution Satellite data (0.7m)**

*Source – prepared by NRSC, ISRO*

### 2.3.3 DIGITAL ELEVATION MODEL

DEM is one of the important parameters for developmental activities and was derived from CARTOSAT stereo data. The elevation data is very much essential for generation of slope and contour maps, which are essential requisites for spatial planning purposes. DEM of the study area is shown as Fig. 2.2.

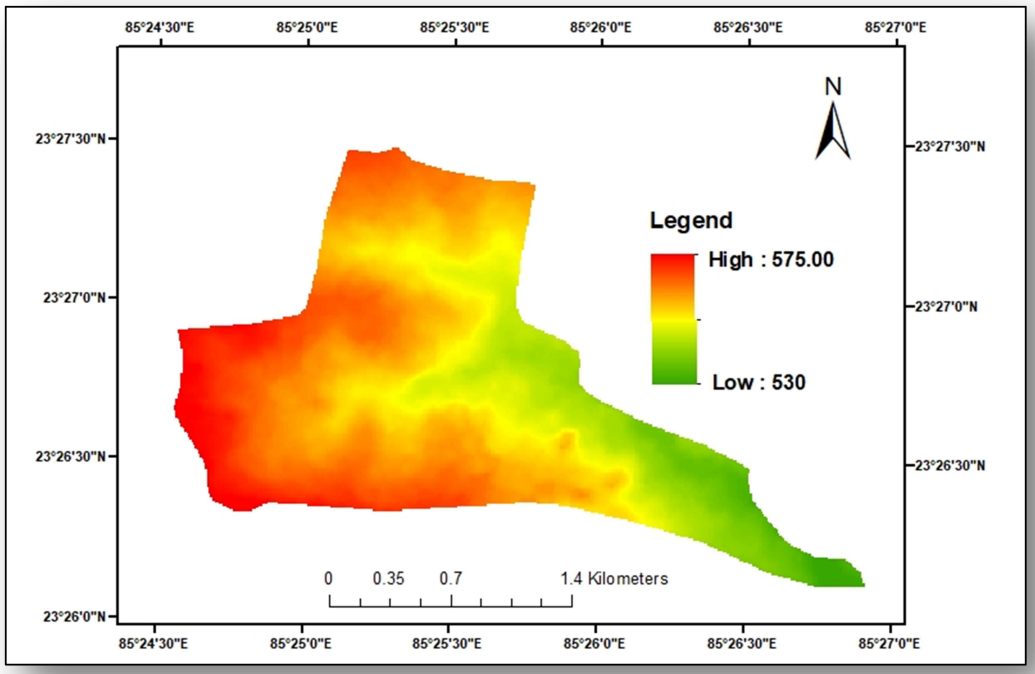



**Fig. 2.2 Digital Elevation Model (DEM)**

*Source – prepared by NRSC, ISRO*

## 2.4 SPATIAL LAYERS

Spatial layers representing the synoptic view of GP were generated at 1:10000 and 1:4000 scales.

### 2.4.1 INFRASTRUCTURE LAYER

Road and rail network delineated from very high-resolution satellite data is shown as Figure 3 Further, the road network was overlaid with zoning map (5 km,10 km, 20 km) in order to analyze the nearness of the towns to GP shown in Fig. 1.7

### 2.4.2 SETTLEMENT LAYER

Growth of settlement in a particular direction can be analyzed using satellite data more explicitly. The settlement layer was generated using VHRS data(Figure 4).

### 2.4.3 LULC DATA

Land use/land cover was carried out using high resolution data at multiple scales i.e. both at 1:10000 (2010-2011) and 1:4000 (2018-19) for periodic monitoring of natural resources. Spatial distribution of land use land cover classes at 1:4K in the GP is shown as Fig. 1.14. Land use land cover statistics in the study area is given in Table 1.8.

### 2.4.4 AREA UNDER CULTIVATION

Agricultural areas under Gram Panchayat were delineated from LULC layer at 1:4000 scale (Fig. 2.3)

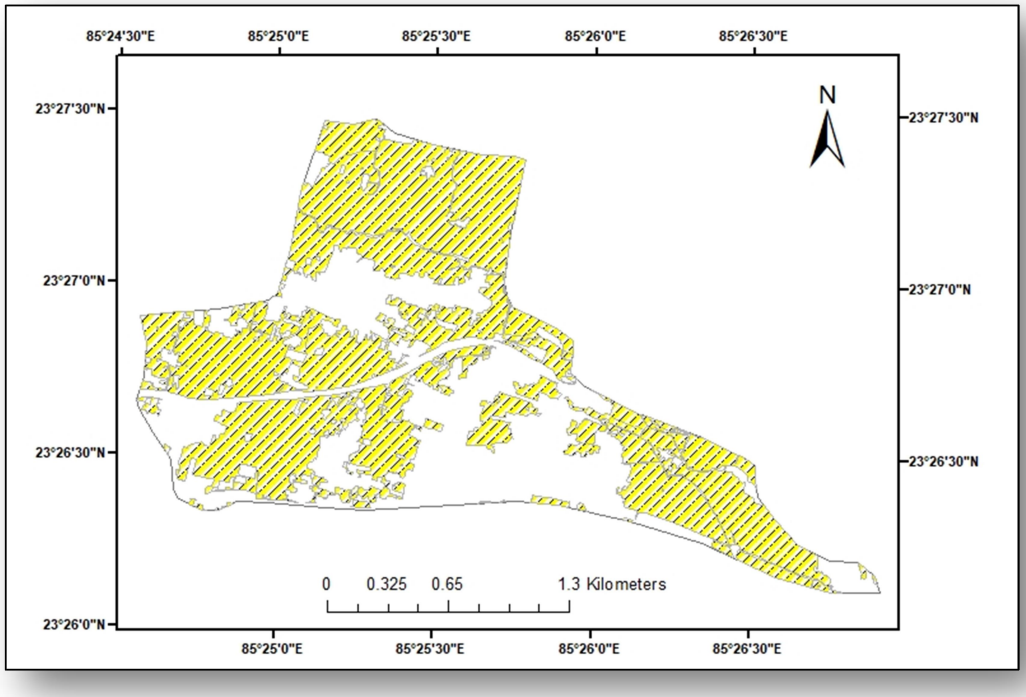



**Fig. 2.3: Area under Cultivation**

*Source – prepared by NRSC, ISRO*

### 2.4.5 DRAINAGE NETWORK AND WATER BODIES

Rivers/streams are natural course of water flowing on the land surface along a definite channel and its spatial distribution in the GP is shown as Fig. 2.4.

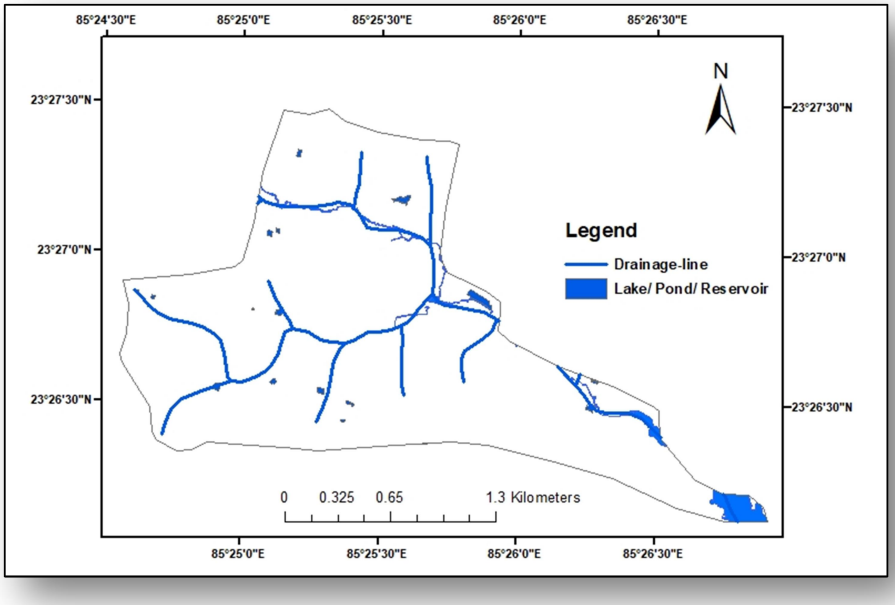



**Fig. 2.4 Drainage Network and Water body map**

*Source – prepared by NRSC, ISRO*

### 2.4.6 SOIL TEXTURE

Spatial distribution of soil textural information in the GP is shown as Fig. 2.5.

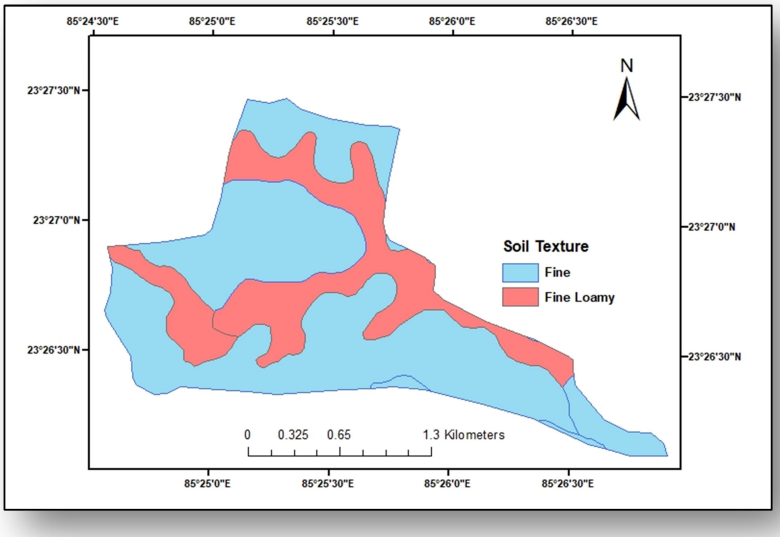



**Fig. 2.5: Soil Textural map**

*Source – prepared by NRSC, ISRO*

### 2.4.7 SLOPE MAP

CartoDEM is used for generation of the slope layer and plays an important role in developing the Water Resource Development Plan (Fig. 2.6).

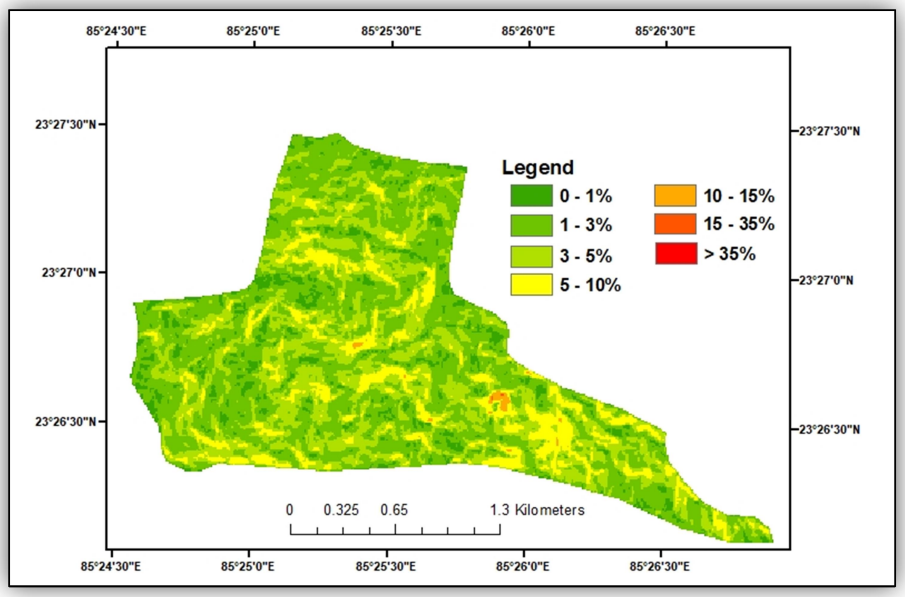



**Fig. 2.6: Slope map of the study area**

*Source – prepared by NRSC, ISRO*

### 2.4.8 GEOMORPHOLOGY

Hydro-geomorphological maps depict major geomorphic units, landforms and provide an understanding of the processes relating to groundwater occurrence as well as groundwater prospects. Based on the morphological expressions in the satellite data, geomorphological map prepared at 1:50000 scale is presented in Fig. 2.7.

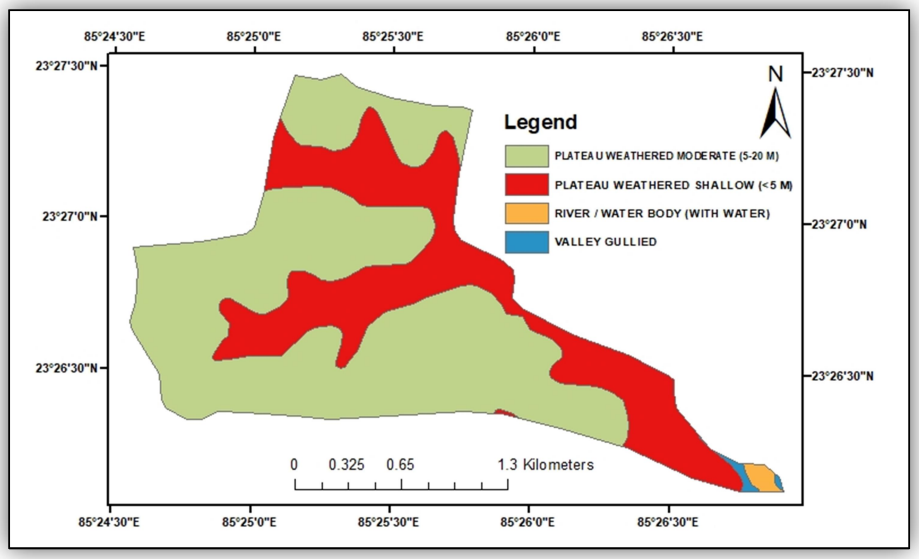



**Fig. 2.7: Geomorphology map**

*Source – prepared by NRSC, ISRO*

### 2.4.9 LITHOLOGY

The general physical characteristics of a rock or the rocks in a GP are derived from satellite data in form of lithology layer (Fig. 2.8). The information about the rock type is very important in generation of water resource development plans.

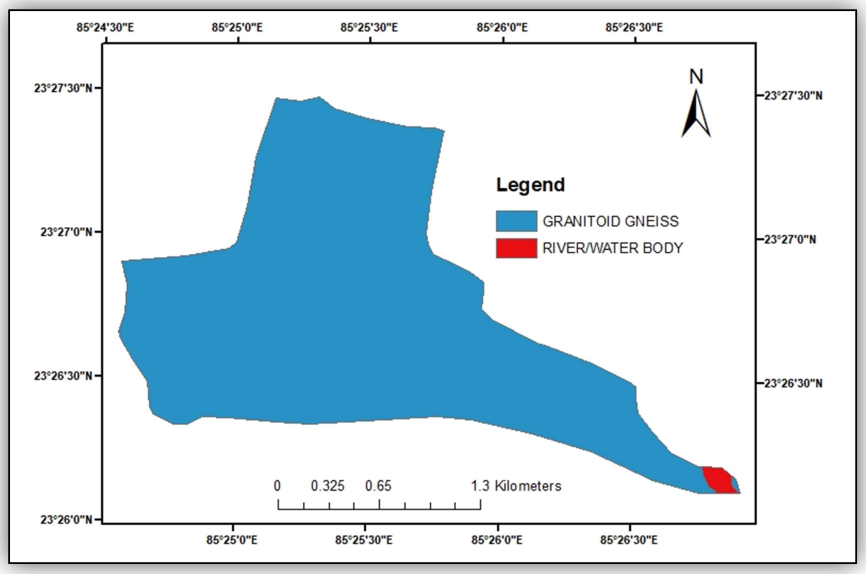



**Fig. 2.8: Lithology map**

*Source – prepared by NRSC, ISRO*

## 2.5 HYDROGEOLOGY

The hydrogeology and recharge condition layers have to be integrated to know the depth to water table and available recharge to the aquifer. It is used to calculate the recharge from continues irrigated water source, temporarily/seasonal water source, less or no recharge sources. Its important information needed to determine the water condition in the vicinity of Gram Panchayat.

### 2.5.1. CONTOUR MAP

Contours at 5m contour interval generated using cartoDEM are shown in Fig. 2.9.

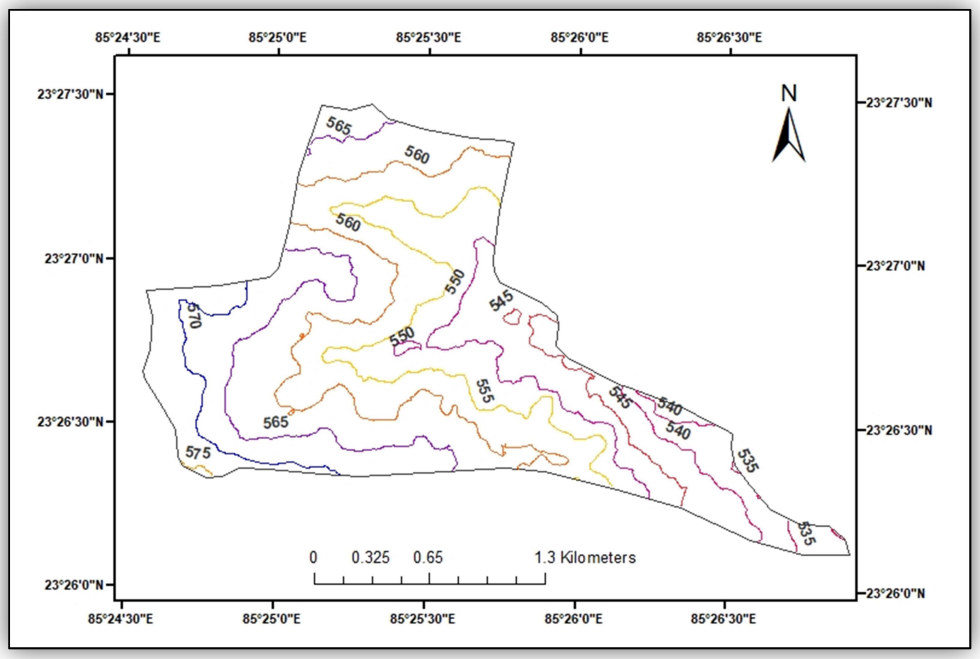



**Fig. 2.9: Contour map**

*Source – prepared by NRSC, ISRO*

### 2.5.2 LONG TERM RAINFALL ANALYSIS

Annual rainfall varied between 629 mm -1484 mm during the period 1979-2003 indicating high temporal variability (Fig. 2.10 & 2.11). Further, number of rainy days

along with statistics in the GP was computed for different years indicating wet, dry and normal conditions (Table 2.3).

**Table -2.3 Rainfall analysis for Dry, Wet and Normal Conditions (1979-2003)**

| | Meteorological Condition | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Statistics** | Dry Conditions | | | Wet Conditions | | | Normal Conditions | | |
| | Rainfall | Runoff | Rainy days | Rainfall | Runoff | Rainy days | Rainfall | Runoff | Rainy days |
| **Mean** | 629.28 | 189.71 | 89 | 1,484.59 | 866.74 | 106 | 1,074.62 | 521.21 | 100 |
| **Standard Dev.** | 139.76 | 100.64 | 12 | 133.91 | 136.01 | 12 | 168.38 | 153.57 | 14 |

### 2.5.3 LONG TERM SURFACE RUNOFF ASSESSMENT

Runoff is a general term to indicate the accumulation of excess rainfall, which traverses over surface/sub surface and occurs when rainfall intensity is greater than the rate at which it is able to infiltrate the soil. In this study, one of the most widely used technique USDA Natural Resources Conservation Service (NRCS) Curve Number (CN) method was used for assessment of runoff potential for GP (USDA-SCS, 1985).The spatial distribution of runoff in the study area was computed for three meteorological conditions (wet years, dry years and normal years) and presented in Figure 14. Quantitative assessment of runoff serves as basic information for adopting suitable soil and water conservation measures in a watershed.

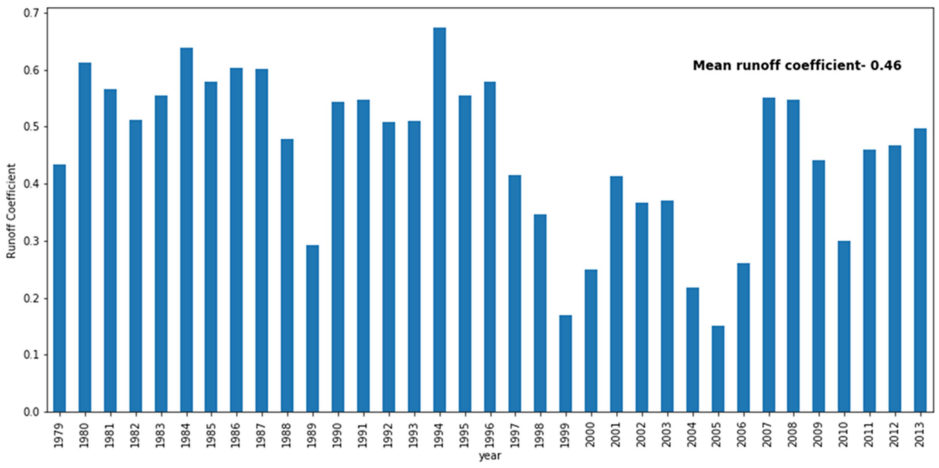



**Fig. 2.10: Annual Variation of runoff Coefficient (1979-2013)**

*Source – prepared by NRSC, ISRO*

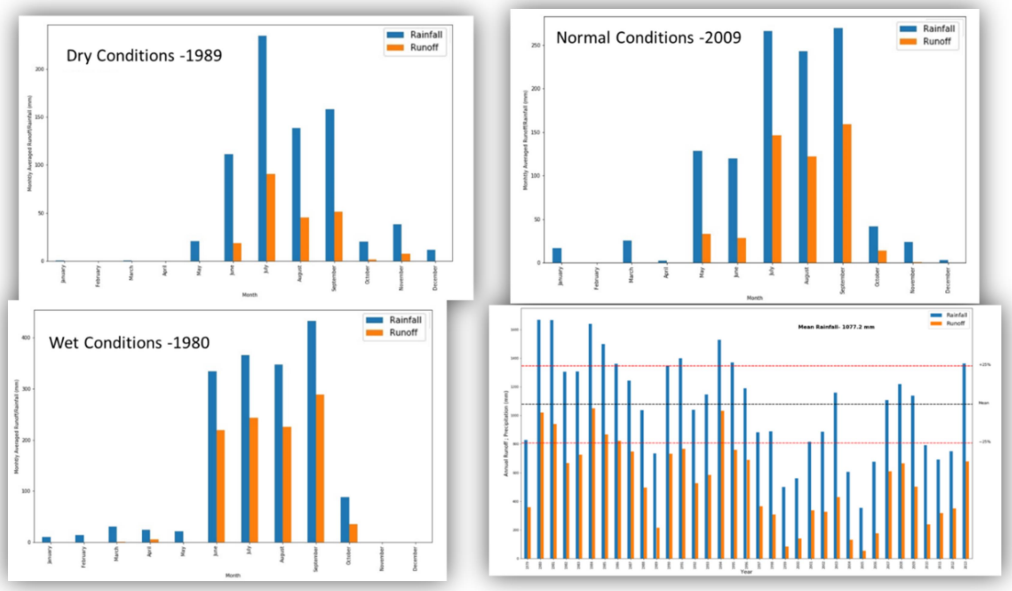



**Fig. 2.11: Surface Runoff(a) Dry conditions 1989 (b) Normal conditions-2009 (c) Wet conditions-1980 (d) Annual Runoff (1979-2013)** *Source – prepared by NRSC, ISRO*

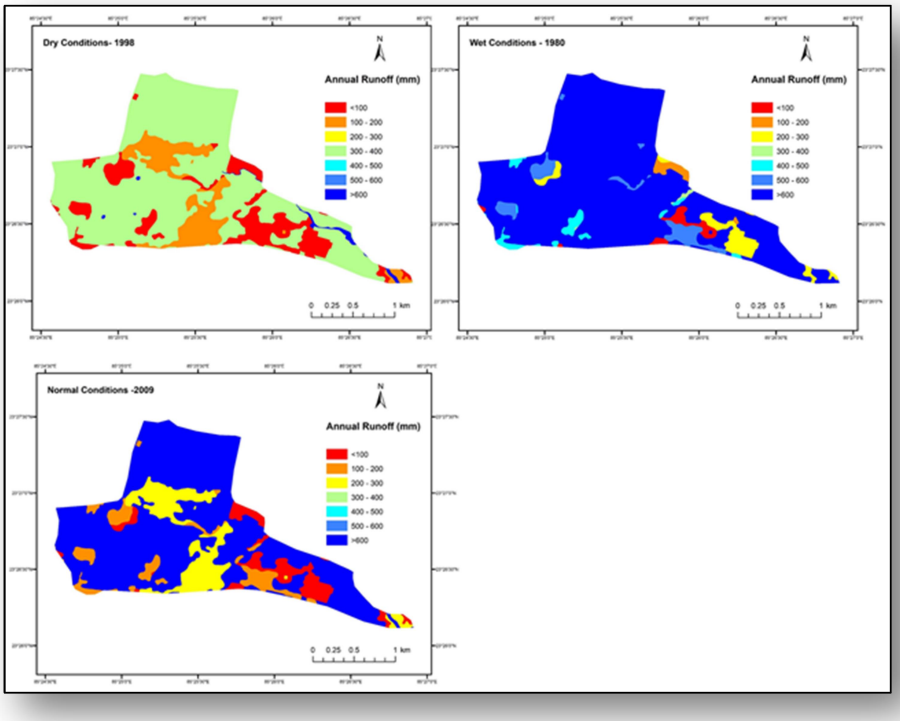



**Fig. 2.12: Surface runoff assessment under different meteorological conditions**

*Source – prepared by NRSC, ISRO*

### 2.5.4 GROUND WATER POTENTIAL

Groundwater cannot be seen directly from remotely sensed data hence its presence must be inferred from manifestation of surface features which act as an indicator of groundwater. Ground water potential map generated under Rajiv Gandhi Drinking Water Mission carried by NRSC was used for planning purpose (Fig. 2.13). Groundwater potential map was categorized according to its recharge characteristics as either (i) Good – Very Good, (ii) Moderate - Good, (iii) Moderate (iv) Poor - Moderate (v) Poor. The lineaments are the surface manifestation of linear features like joints and fractures. They have been demarcated from the imagery as linear features and are ascertained after field traversing. Groundwater potentiality of a higher order is indicated where lineaments run along and across the alluvial zone.

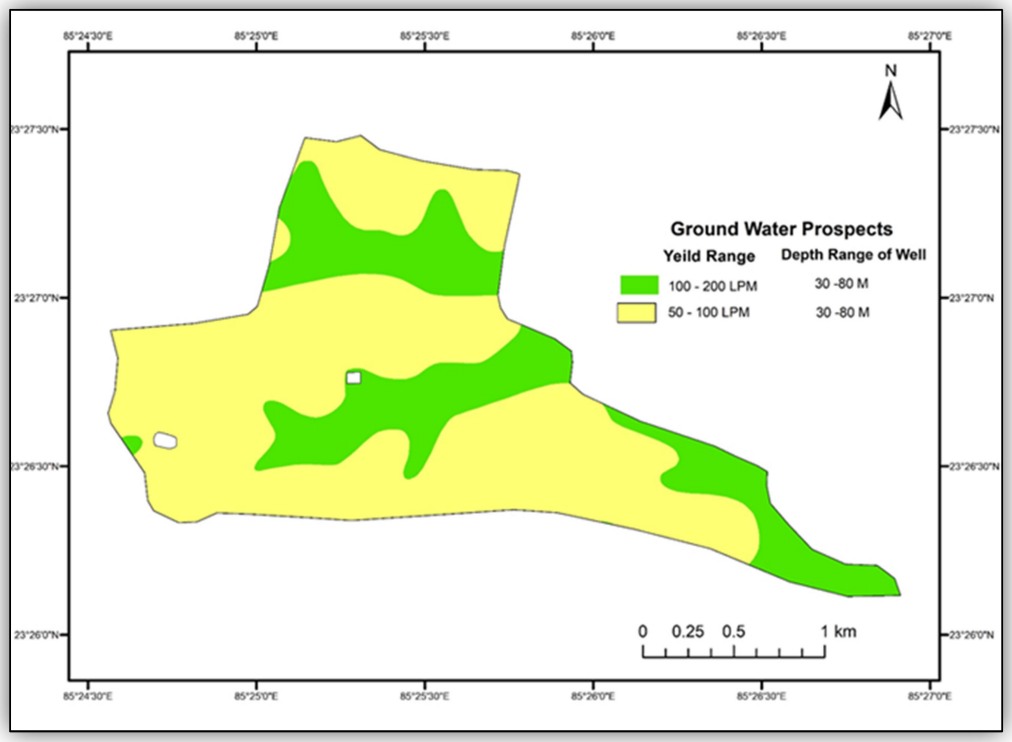



**Fig. 2.13: Groundwater Prospects map** (*Source: Groundwater potential map generated under Rajiv Gandhi Drinking water Mission project, NRSC*)

Groundwater quality map of the study area is shown as Fig. 2.14 and Table 2.4.

**Table 2.4: Water quality parameters for different locations w.r.t. Fig. 2.14**

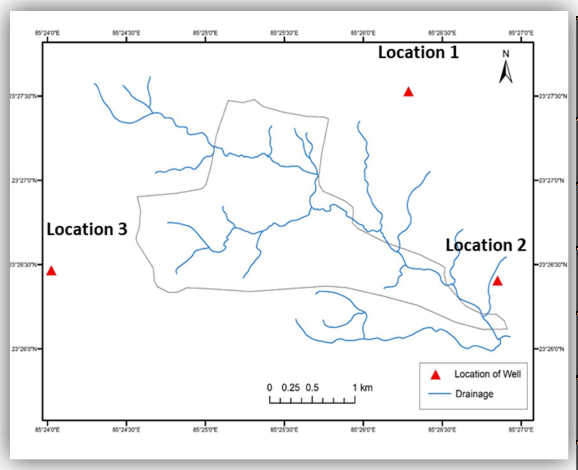



**Fig. 2.14: Groundwater Quality Location map (***Source – prepared by NRSC, ISRO)*

| Parameter | Location 1 | Location 2 | Location 3 |
|---|---|---|---|
| pH | 6.87 | 6.75 | 6.58 |
| TDS | 198 | 478 | 218 |
| Hardness | 150 | 310 | 150 |
| Fluoride | 0.58 | 1.85 | 0.48 |
| Chloride | 8 | 0 | 47 |
| Iron | 0.27 | 0.28 | 4.95 |
| Nitrate | 7.10 | 0 | 0 |
| Alkalinity | 110 | 180 | 50 |
| GWQ | Potable | Non Potable | Non Potable |
| Data source | IMIS | IMIS | IMIS |
| Year | 2014 | 2015 | 2014 |

## 2.6 GENERATION OF COMPREHENSIVE DEVELOPMENT PLAN FOR GP

### 2.6.1 WATER RESOURCES DEVELOPMENT PLAN

The water resource development plan generation using GIS includes identification of suitable zones for taking up locale specific activities in the study area. Local area specific activities are generally the areas, where certain type of water resource activity is recommended for implementation. Water conservation measures like check dam, percolation tank, underground barrier etc. fall under location specific activities. In order to identify the suitable zones for location of recharge structures, different thematic layers viz., drainage network with drainage order buffer map, soil, slope and land use/cover and runoff potential were integrated under GIS environment. Subsequently, zones in which the defined conditions of the different thematic layers were fulfilled are identified for location specific activity. The guidelines for the selection of suitable zones for planning location specific activities are adopted from

literature (IMSD,1995; Chowdary et al., 2009;Chowdhury et al., 2010; Shankar and Mohan, 2005).

### 2.6.2 Land Resources Development Plan

In the present study, a decision model that involves the logical combination of thematic maps resulting from the application of conditional operators was established for evaluating the suitability of a particular land use activity in the study area. For achieving this objective, essential prerequisites such as land use/cover, soil, slope and groundwater potential maps are generated using remote sensing and GIS. Integration of geomorphological, hydrogeological and land use data with geophysical investigations gives groundwater potential. This coupled with surface water potential, helps in the generation of alternate land resource development plan. Methodology adopted from the GIS based land use planning project initiated in India entitled 'Integrated Mission for Sustainable Development', which generates, analyzes and integrates natural resource thematic data in 1:50000 scale, together with satellite remote sensing data forms major basis for the present study (IMSD, 1995). The guiding factors described for land use plan generation have been presented in tabular form in the Table-3. Further, the information on land capability classes and recommended land treatment management practices (Stark et al., 1966; Pretall and Polius, 1981) also served as guiding tools. The water resource development and land resource development plan are shown in the Fig. 2.15 & 2.16

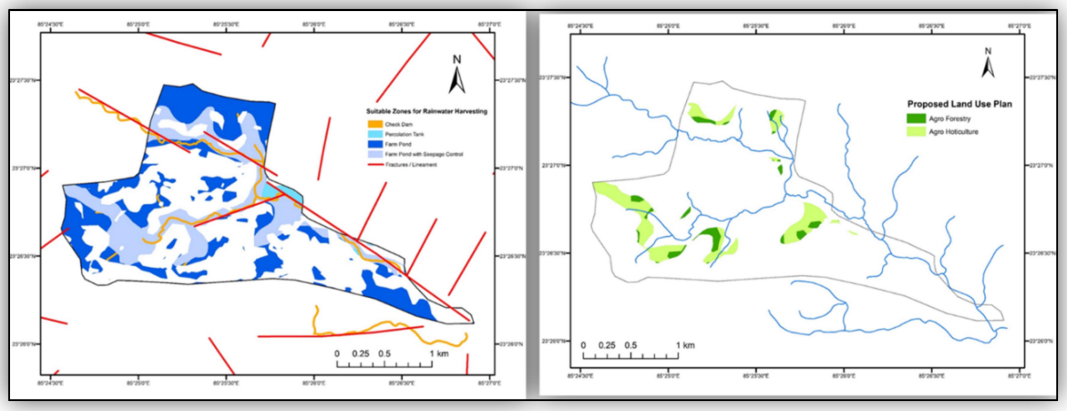



**Fig. 2.15: Water Resource Development Plan (***Source – prepared by NRSC, ISRO)*

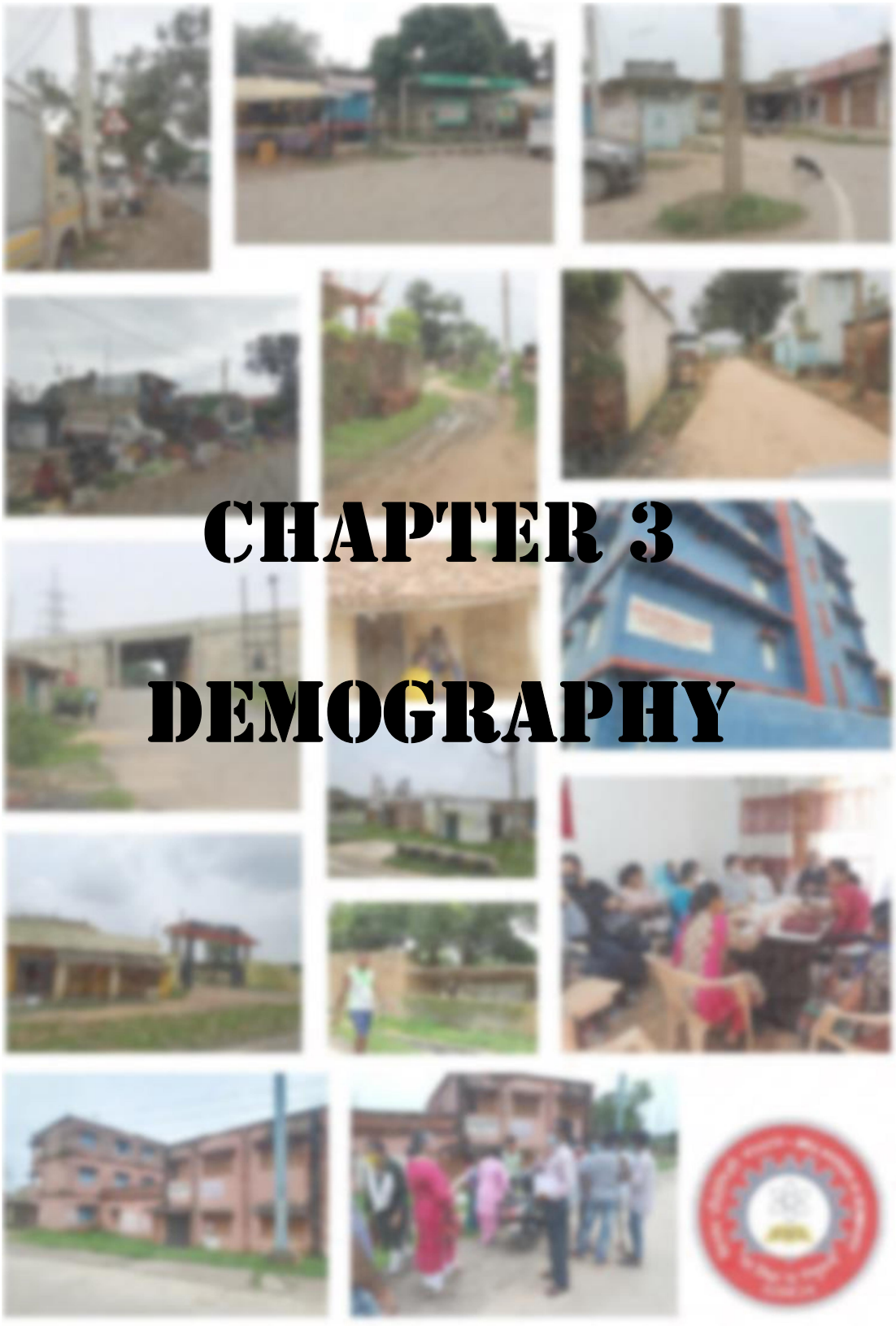
**Fig. 2.16: Land Resource Development Plan (***Source – prepared by NRSC, ISRO)*

## 2.7 RECOMMENDATIONS & SUGGESTIONS FOR IMPROVING NATURAL RESOURCES IN GP

- Rain water harvesting measures such as farm ponds, percolation tanks and check dams are suggested in the GP considering study GP characteristics, which they have significant role in rainfed and dryland farming cultivation. To minimize the cost of construction in case of farm ponds, suitable zones were identified for two soil conditions i.e. with or without seepage control. Dimensions of the pond can be evaluated on the basis of volume of water to be stored. Further, feasible locations for check dam are identified.
- Rainwater harvesting structures reduce runoff velocity there by minimizes erosion and secondly allow the retained water to percolate and thus results in increased recharge in the wells located downstream of the structure. Some slots should be provided in the check dam so as to allow passing through early monsoon flow that carry appreciable amounts of sediment. The late/post monsoon flow can be stored by plugging the slots with either wooden planks or similar another suitable device.
- Mean runoff coefficient estimated based on the 35 years rainfall data is nearly 0.46 that indicated that nearly 46% of rainfall is converted to runoff. Number of rainy days also varied between 89 to 106 days during the period 1979-2013, which indicates ample scope for retaining surface runoff water through adoption of suitable rainwater harvesting measures.
- Water resource development plan indicated that nearly 110 ha of area is suitable for farm pond. However, cadastral map needs to be overlaid on the WRD plan for implementation purpose. Thus, these structures directly address the temporal discontinuity between the availability of rainfall and crop moisture demand. Irrigation and water supply can be planned from the wells lying in the dam command. Thus, rainwater harvesting technique helps in recycling water for raising double cropping system and agro-horticulture crops.
- In the Neori GP, nearly more than 50% of the area is either under fallow or uncultivable wasteland. Inspite of having sufficient rainfall in the study GP, 90% of the study area is under single cropped areas. Thus, by retaining surface runoff, single cropped areas can be converted to double cropped areas.
- Further, areas suitable for agroforestry and agro-horticulture areas are identified considering the current land use, soil, slope and surface and ground water potentials of the GP. Nearly 50 ha GP area is suitable for agroforestry

and agro-horticulture. This indicates possibilities for transformation of existing single cropped areas, fallow and wastelands to intensive agriculture, agro-horticulture, horticulture, social forestry and fodder crop etc.

- Fruit trees, if suitably integrated, would add significantly to overall agricultural production including food, fuel and fodder, conservation of soil and water and stability to production and income. Dryland fruit trees, being deep rooted and hardy, can better tolerate monsoon aberrations than short duration crops, thus can utilize off-season rains and soil moisture from deeper layers.
- Adoption of policy to earmark at least 10 – 20% of land for tree farming and grass strip cultivation. The generated grass would be utilized as fodder for the livestock, while tree wood would generate assured income and fuel wood.
- Poultry, commercial goat rearing and dairy development has not yet been organized and has lot of scope for improvement. Integrated rice-fish farming particularly suggested for the farmers of Eastern and North Eastern India by Water Technology Centre, Bhubaneswar can also be popularized in the study area.
- The strategic planning is defined as the future directions for the development of land and water resources in the GP establishing the long-term objectives and mobilizing the financial resources and government policy to achieve hierarchical goals. Further, involvement of local people is quite necessary as part of education, awareness and consensus. Implementation, monitoring and maintenance of the schemes and evaluation of implemented schemes for their end benefits are also the part of strategic planning activities.
- For successful implementation of land and water resource development plan in the study GP, suitable working scale needs to be identified for data analysis and implementation within the GIS framework. Most of the implementation by the implementing authorities of the government is being carried out with cadastral maps. The large-scale cadastral maps overlaid on the action plan details would be the best format for implementation.



# CHAPTER 3

# DEMOGRAPHY

# CHAPTER 3: DEMOGRAPHY

## 3.1 INTRODUCTION

Demographic profile of a habitation forms a very important segment of analysis. The present profile of Neori GP is diversified and is characterized by proportionate distribution of people of various age, sex, religion, caste and occupation.

### 3.1.1 DEMOGRAPHIC ASPECTS OF THE KANKE BLOCK AND NEORI GP

Neori gram panchayat situated in Kanke block of Ranchi district in Jharkhand has population density of 18 persons per hectare. As per the Census 2011, there are total 1,230 families residing in Neori. The total population of Neori is 6,907 out of which 3,700 are males and 3,207 are females. Thus the Average Sex Ratio of Neori is 867, which is less than that of Kanke block (924) and Ranchi District.

The population of children of age 0-6 years in Neori village is 1072 which is 16% of the total population. There are 529 male children and 543 female children between the ages 0-6 years. Thus as per the Census 2011 the Child Sex Ratio of Neori is 1,026 which is greater than Average Sex Ratio (867) of Neori village.

Schedule Caste (SC) constitutes 2.1% (144) while Schedule Tribe (ST) was 16.7% (1155) of total population in Neori village. Table presents the area and demographic details of Neori Gram Panchayat as per Census 2011 along with that of Kanke Block and Ranchi District. Table 3.1 presents the area and demographic details of the Neori Gram Panchayat as per Census 2011, and Fig. 3.11shows the population of Neori Gram Panchayat and its composition.

**Table 3.1: Area and Demographic details of the Neori Gram Panchayat as per Census 2011**

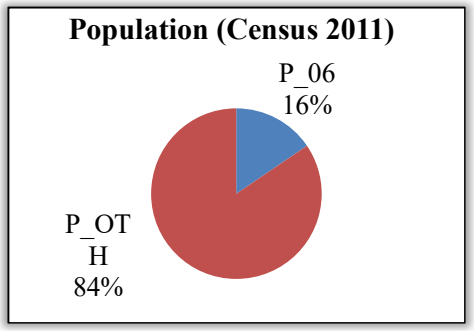
| PRI Level / Unit | Census | Area(Sq. Km) | Household | Population | Male Population | Female Population | Schedules Caste | Scheduled Tribe | Density (P/Sq. | Sex Ratio | Literacy Rate (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Jharkhand** | 20 | 79716 | 6237147 | 32,988,134 | 16,930,315 | 16,057,819 | 3,985,644 | 8,645,042 | 414 | 948 | 66.41 |
| **Ranc** | 36 | 5097 | 5665 | 29142 | 14949 | 14193 | 152,9 | 1042 | 572 | 94 | 76.0 |

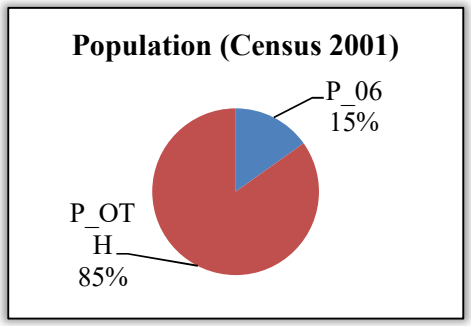
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **hi District** | 4 | | 75 | 53 | 37 | 16 | 43 | 016 | | 9 | 6 |
| **Kanke Block** | 0190 | 347.10 | 45,390 | 244072 | 125932 | 118140 | 9364 | 81280 | 3047 | 924 | 84.92 |
| **Neori** | 3735 06 | 3.89 | 1230 | 6907 | 3700 | 3207 | 144 | 1155 | 18 pp Ha | 867 | 75.73 |

*Source: Census 2011*

## 3.2 AGE STRUCTURE, SEX RATIO AND LITERACY

The population below six years of age in 2011 was 1072 which constitutes to 15.5% of total population (Fig. 3.1). This assumes significance, as amenities have to be planned for this age group to ensure a safe and healthy living. The general literacy rate of the village is 63.97% as per Census of India (2011). The general literacy and female literacy rate has improved for Neori Village based on the Census of India 2001 & 2011. Literacy rate in women is still considerably low (51.9%). This is because of the lack of awareness and adequate social infrastructure.



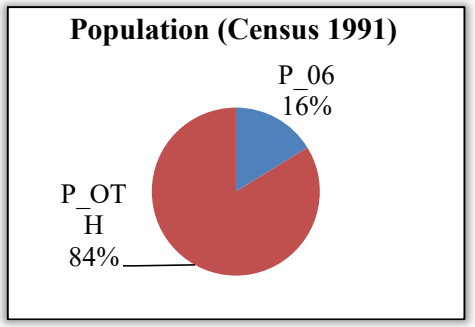




**Fig. 3.1: Population distribution of below 6 years in three census decades in Neori GP**

*Source: Census of India*

### 2.2.1 AGE STRUCTURE

The population distribution as per age has remained more or less constant in the village as per the Census of India data. The pie-charts below show the age structure in the village as per last three decades.

### 3.2.2 SEX RATIO

Sex Ratio in Neori Village is 940 as per Census of India 2011 (Fig. 3.2).The sex ratio in the Village has increased in the last three decades but still; the proportion is not at all close to one. This gap is supposed to be filled through education and awareness in the community to promote and sustain societal balance.

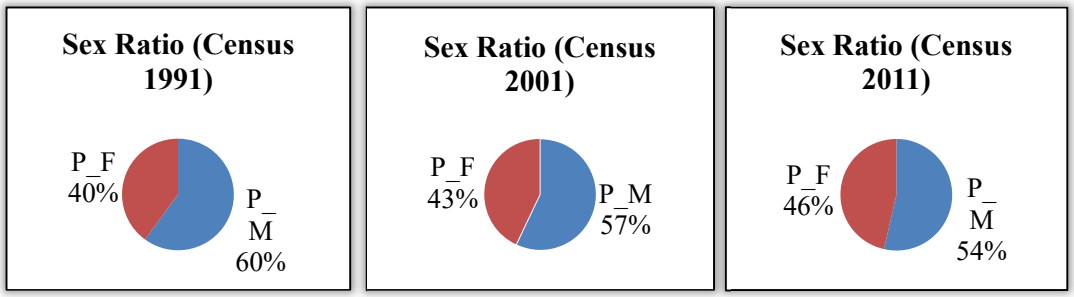



**Fig. 3.2: Sex ratio of Neori GP in three census decades**

*Source: Census of India*

### 3.2.3 LITERACY RATE

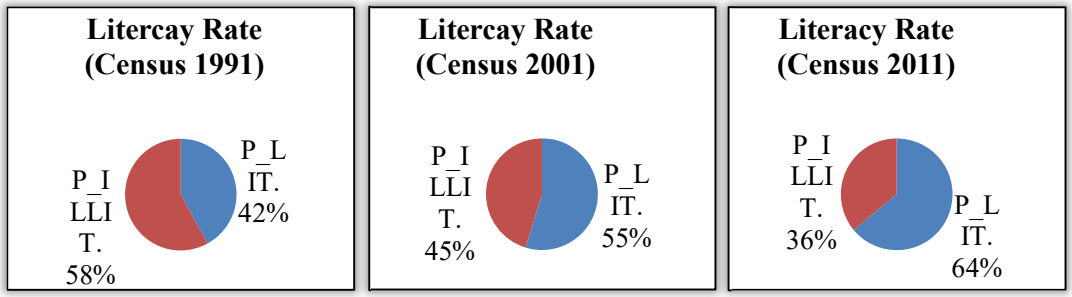



**Fig. 3.3: Literacy rate of Neori GP in three census decades**

*Source: Census of India*

The general Literacy Rate of the village is 63.97% as per Census of India 2011 (Fig. 3.3).

The Literacy Rate in the GP has considerably increased in the last three decades. But the overall literacy rate and specifically female literacy rate is considerably low in the Village (Table 3.2).

**Table 3.2: Percentage of Female Literate Population in last three decades**

| Sl.No. | Census (Year) | Total Female Population | Female Literate Population | Percentage |
|---|---|---|---|---|
| 01 | 1991 | 1473 | 263 | 17.8 |
| 02 | 2001 | 2218 | 769 | 34.6 |
| 03 | 2011 | 3207 | 1665 | 51.9 |

*(Source: Census of India)*

This is basically because of the lack of awareness and absence of adequate social infrastructure. This gap is required to be filled to achieve the goals of community development and up gradation of Village.

## 3.3 FACTORS FOR THE GROWTH OF POPULATION

The Ring Road (NH) divides the village in two parts and this ring road is connected to the parent city and other major towns and villages in Jharkhand. The village has this spatial advantage of connectivity which has led to the increase in residential as well as commercial activities in the village. The village is in close proximity to the Ranchi city's high profile healthcare services (Medanta Hospital) and Educational facilities (BIT, Mesra) which has led to the increase in demand and price of the property in the village. The growth of the city is towards the village and major changes have been witnessed in the land use pattern of the village and surrounding areas.

It is projected that by 2030 the Population of the Village will grow by almost 75% of the total current population of the Village. So in development plan amenities and facilities for community development has to be proposed keeping in mind the projected population growth by 2030 (Table 3.3).

**Table 3.3: Population & Decadal Growth Rate**

| Year | Population | Growth Rate (%) |
|---|---|---|
| 1991 | 3684 | -- |
| 2001 | 5157 | 40% |
| 2011 | 6907 | 34% |

| | | |
|---|---|---|
| 2021 (Projected) | 9449 | Geometric Increase Method |
| 2026 (Projected) | 11,051 | Geometric Increase Method |
| 2030 (Projected) | 12,930 | Geometric Increase Method |

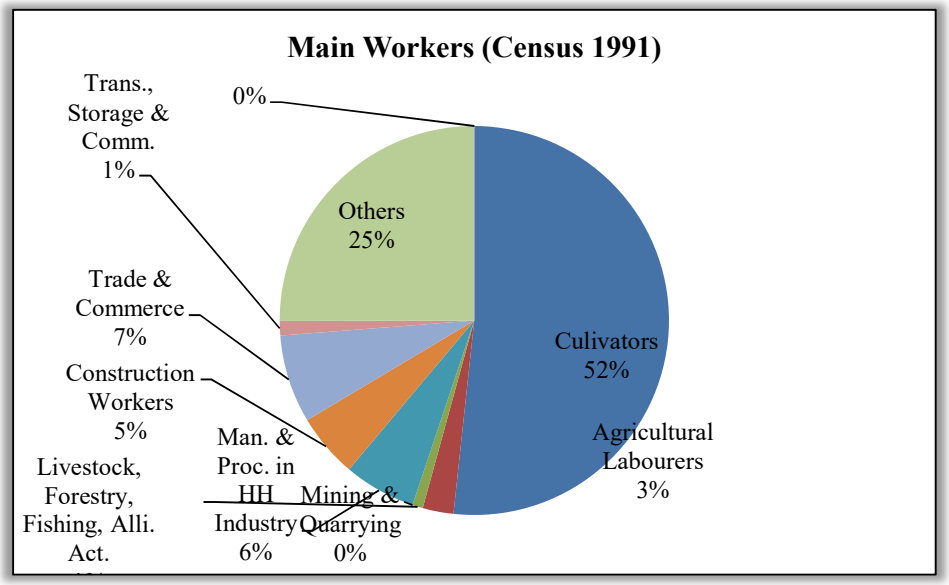
*(Projected Population) (Source: Census of India)*

## 3.4 IMPACT OF THE POPULATION GROWTH ON BASIC SERVICES

It is obvious with increase in Population the requirement of basic services in the village has increased rapidly. It is important to maintain the existing one, upgrade the services to the standards and provide the services in case of deficiency. The village has to withstand the impact in respect of basic services like water supply, sewerage, storm water drainage, roads & building infrastructures, employment opportunities, sanitation, educational, medical facilities, transportation, electrification and security. This will ensure the requirements by 2030 and support healthy and prosperous community living in the Village.

## 3.5 ECONOMIC BASE AND OCCUPATIONAL DISTRIBUTION

The major economic activities in the village are based on tertiary activities. This shows that the village has potential for development of economy based on skill based activities. The total working population in Neori is 1938.



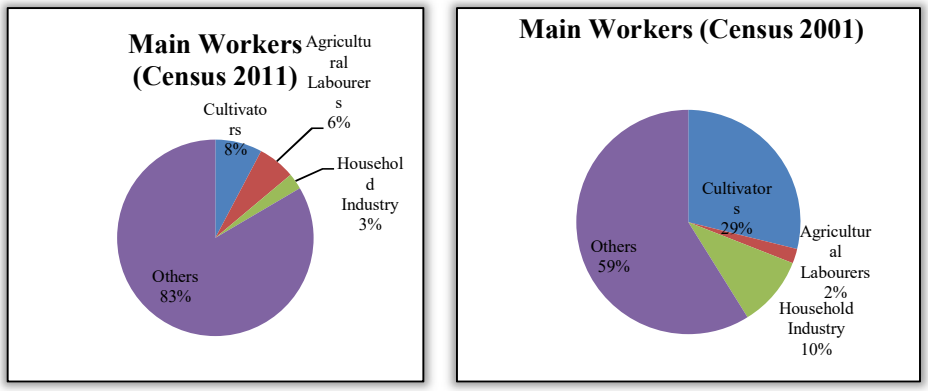



**Fig. 3.4: Distribution of Main worker in Neori GP in three census decades**

*Source: Census of India*

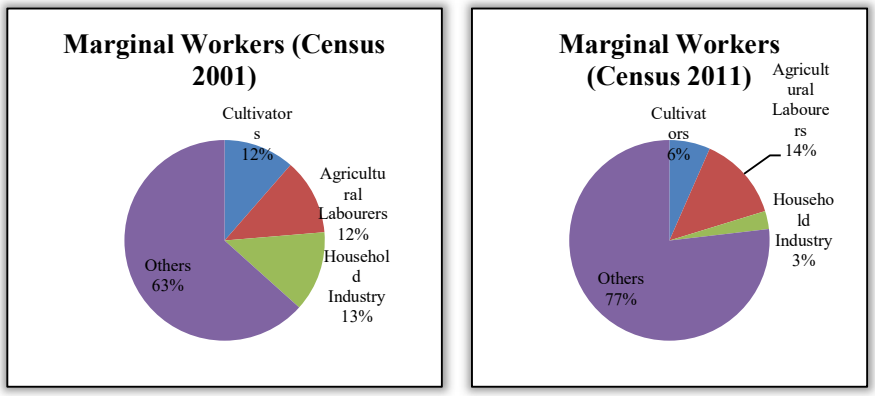



**Fig. 3.5: Distribution of Marginal workers in two census decades in Neori GP**

*Source: Census of India*

In addition to the same 18.86% of total population is the marginal workforce in village which is by children below 06 years. This needs serious interventions in terms of social development, so that this percentage of the population below 06 years is not engaged in such activities.

As almost 80% of the total population in Village is dependent on tertiary activities, so development of skills through skill development centers can be proposed in the village. Also in marginal workers almost 20% of the population is engaged in Primary activities. These activities can be developed and further upgraded, through various government schemes which will shift these workers from marginal workforce to main workforce. Almost 70% of the total population is non-working population which is again a concern for the GP and there is a need for more employment opportunities.

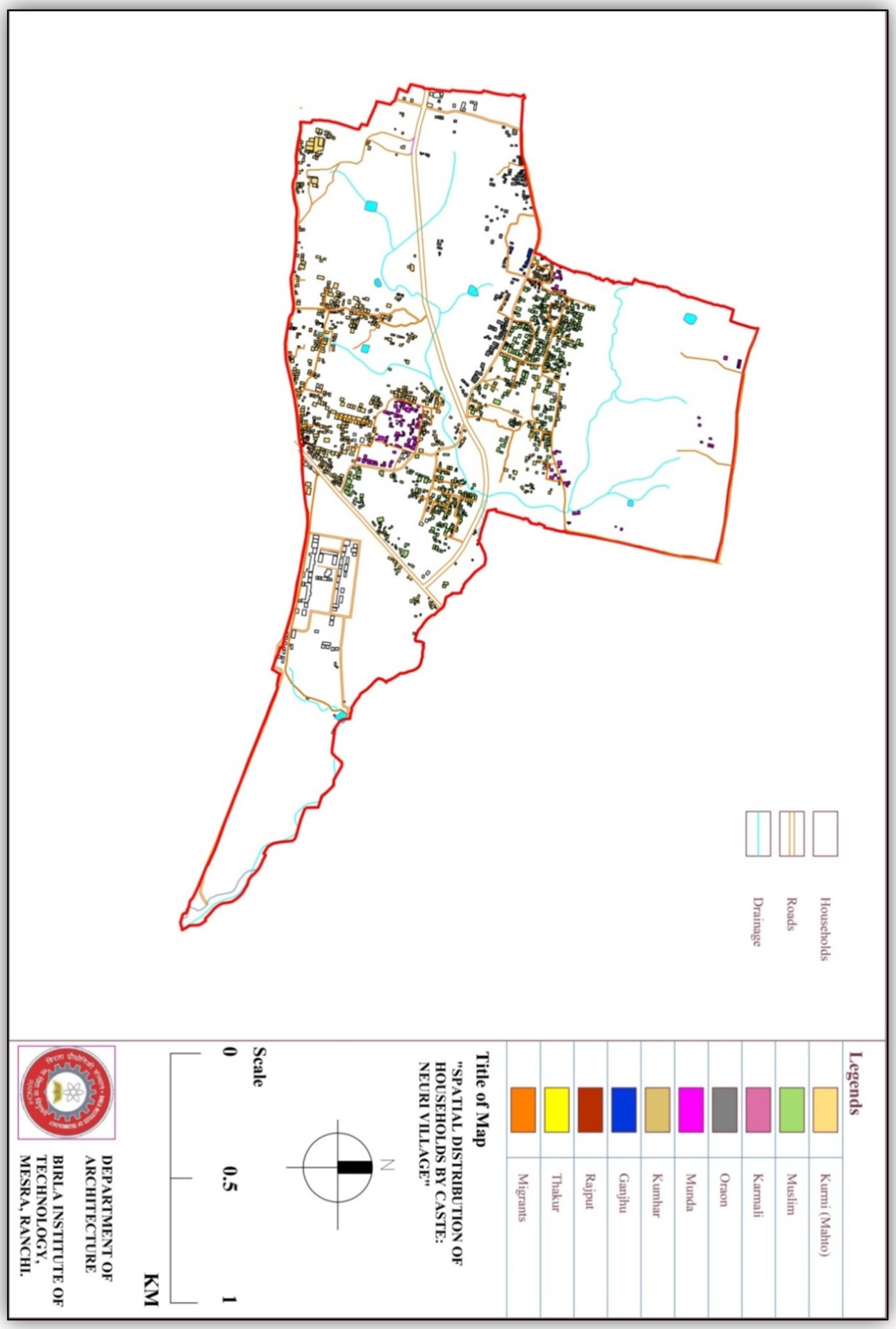
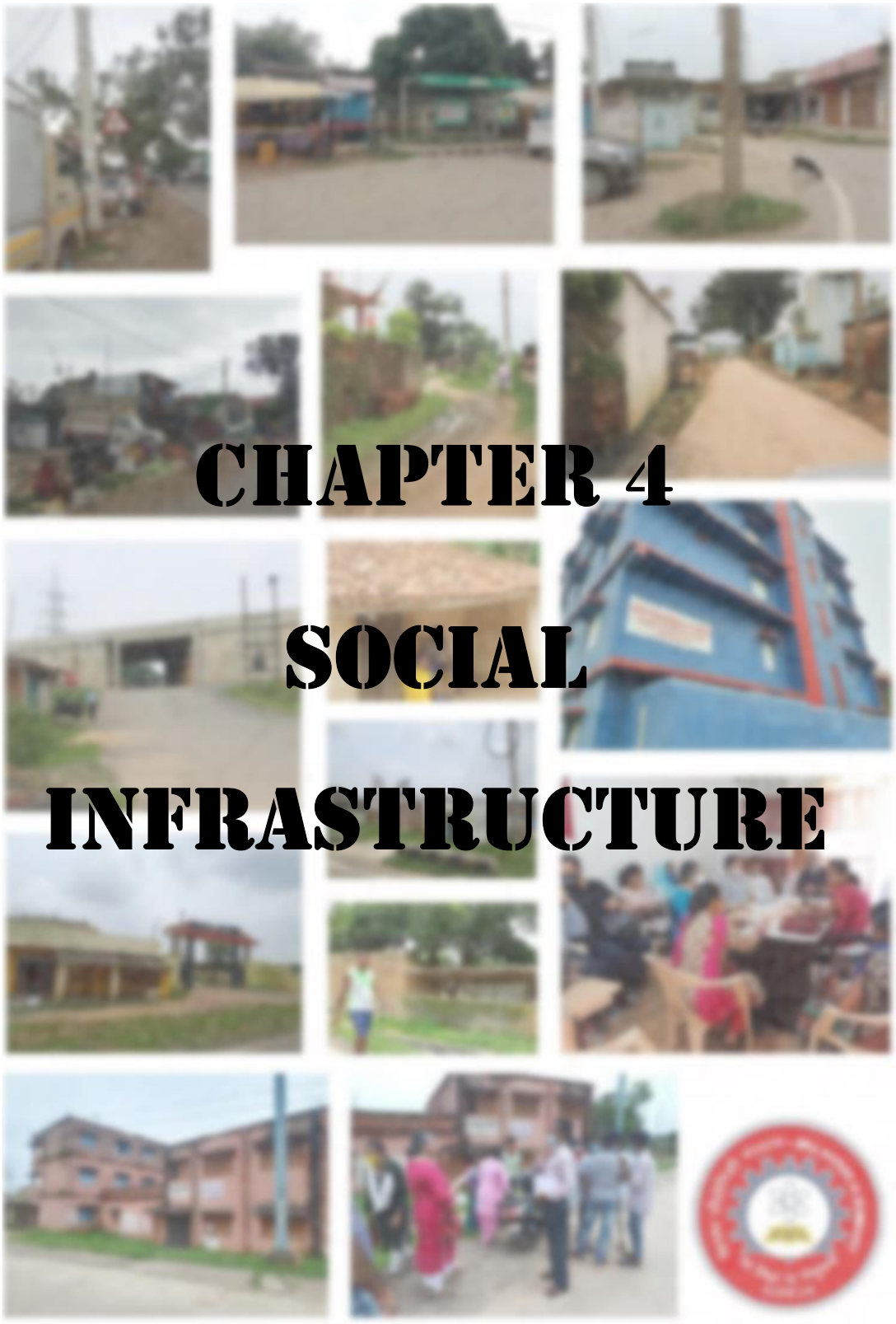



**Fig. 3.6: Map showing Spatial Distribution of Households by Castes in Neori GP**

*Source: based on household survey; prepared by the BIT Mesra Team*



# CHAPTER 4

# SOCIAL INFRASTRUCTURE

# CHAPTER 4: SOCIAL INFRASTRUCTURE

## 4.1 INTRODUCTION

Economic, physical and social infrastructures are inter-related components for a holistic and sustainable community development. Good and adequate social infrastructure is the key to achieve progressive communities.

Social infrastructure deals with the following aspects:

- Educational Facilities
- Healthcare Facilities
- Socio- Cultural Facilities
- Other Public and Semi-Public Facilities: Police, Fire & Emergency Services, Communication (Postal Facility), Banking Facility
- Recreational Facilities & Open Spaces

## 4.2 EDUCATIONAL FACILITIES

Education is the basic factor which makes a community aware and empowered. One of the Millennium Development goals postulated by UN is to achieve 'Universal Primary Education' and so is the goal of Sarva Shiksha Abhiyan (SSA) program of GoI. The current Neori GP has 02 Government Primary (01 is Urdu as well as Hindi), 01 Private Primary School, 04 Private Secondary School, 04 Anganwadi Centre and 01 Senior Secondary School (Refer Table 4.1).

**Table 4.1- Number of Educational Institutions in Neori GP by Hierarchy**

| Sl.Nos. | Institutes | Total Numbers |
|---|---|---|
| 01 | **Schools** | |
| | Pre Primary School (Nursery School) | 00 |
| | Government Primary School (I to V) | 02 |
| | Private Primary School (I to V) | 01 |
| | Private Secondary School (I to X) | 04 |
| | Senior Secondary School (VI to XII) | 01 |
| 02 | Anganwadi Centre | 04 |
| 03 | Skill Development Centre | 00 |
| 04 | Social Welfare Hostel | 00 |
| 05 | Industrial Training Institute | 00 |
| 06 | Customer Service Centre (Digital Infrastructure) | 00 |
| 06 | Libraries | 00 |

*Source: Primary survey*


**Fig. 4.1: Government Primary School in Kendua Toli- Neori GP***(Source:Author)*

As per the primary survey not every family in the village sends their children to the schools. As per educational infrastructure the village is having sufficient facilities. A typical government school and a typical private school is shown in Fig. 4.1 and 4.2 respectively. But it is also said that educational facilities not only depends on the number of population but also on the characteristics of the population. Considering the fact that female literacy rate is considerably low and there is a significant percentage of population below 06 which is engaged in economic activities rather than education, it is thereby important to generate awareness and increase the type of educational facilities especially for women and children.

There can be more/up-gradation of Anganwadi Centers in the village within easy walkable distance (300-800 m). The local community should be encouraged, especially women, in management of the local level facilities to promote efficient utilization of the resources.Anganwadi is the focal point for the delivery of services at the community level, to children below six years of age, pregnant and nursing mothers, and adolescent girls. Anganwadi center also serves as the meeting place for women's groups, mothers' clubs and Mahila Mandals promoting awareness and joint action for child development and women's empowerment.

In order to achieve an overall development, it is important to create employment opportunities in the rural area. It is essential to impart vocational training and employable skills to the rural youth for promotion of sustainable rural livelihood. Neori presently has no vocational training/ industrial training institute or any skill development center under any government schemes like PMKVY.


**Fig.4.2: Private Secondary School, NeoriGP** *(Source:Author)*

## 4.3 HEALTHCARE FACILITIES

Healthcare facilities and their easy accessibility are important for the progressive communities. It also makes an important contribution to economic progress, as healthy population live longer and is more productive. It includes a system of healthcare and protection that is available, acceptable and of good quality.

The Healthcare Services is to have referral linkage to the next level of health-care facility of Primary Health Centre (PHC) at the rate of 1 PHC per 6 H-SC. In population norm terms, PHC to be provisioned as 1 for every 20,000 population in Hilly/Tribal/Difficult Access Areas and 1 for every 30,000 population in Plain Areas, while the bed norm is 4-6 beds in each PHC.

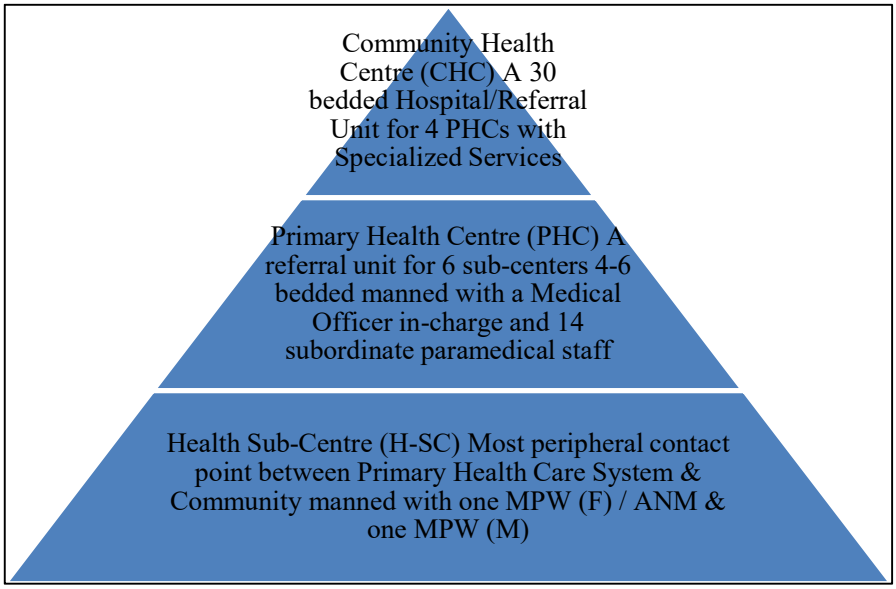



**Fig.4.3: Hierarchy of Healthcare delivery system in India prescribed by MoHFW, GoI**

There is one Health Sub Centre, one Community Health Centre (CHC), one Private Clinic and one Veterinary Clinic in the GP which is in place as per the Guidelines for Rural Development (Refer Fig. 4.3 and Table 4.2). There is a number of private multispecialty hospitals located in Irba (Village) which is within the 03 km range of the NeoriGP.As per primary survey 50 % of the people are satisfied with the Health facilities and others travel to RIIMS (almost 12 km) for medical emergency.

**Table 4.2:Number of Health Facilities in NeoriGP by Hierarchy**

| Sl.Nos. | Type of Health Facilities | Numbers |
|---|---|---|
| 1. | Health Sub Centre (H-Sc) | 01 |
| 2. | CHC/PHC | 01 |
| 3. | Veterinary Clinic Hospital | 01 |
| 4. | Private Hospital | 01 |

*Source: primary survey*

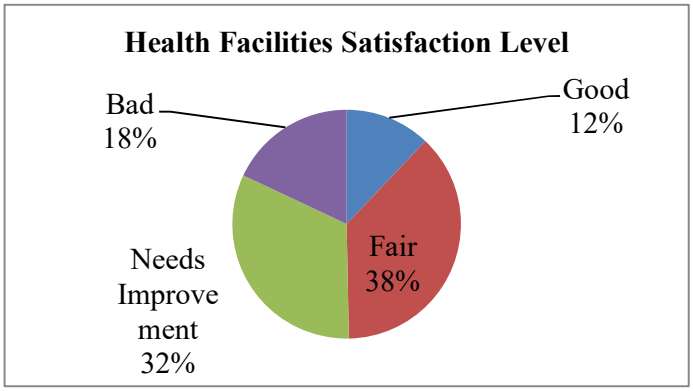



**Fig. 4.4: Health facilities satisfaction level of residents of Neori GP**

*Source: Primary Survey of the Village*

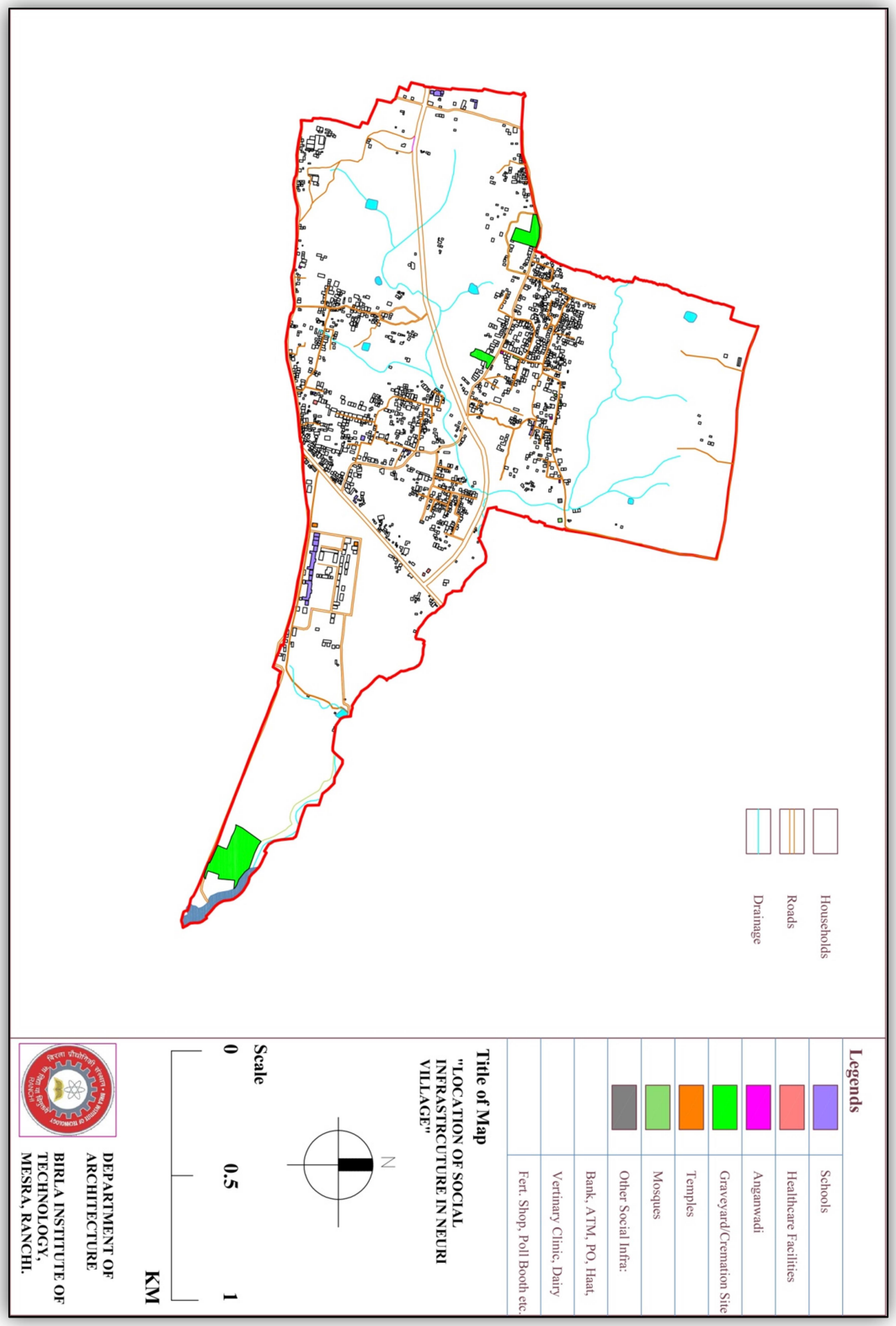



**Fig. 4.5: Map showing Location of Social Infrastructure in NeoriGP**

*Source: based on household survey;prepared by the BIT Mesra Team*

## 4.4 SOCIO-CULTURAL FACILITIES

The culture, traditions of tribes, stories, music, art and crafts always define the identity of a village. There is one Club Ghar (Chandni Tola) and one JSLPS (Jharkhand State Livelihood Promotion Society) present in the village. There has to be a socio-cultural center proposed in the village comprising of Community Hall, Library, Recreational Club, Music, Dance and Drama Centre. The existing Club Ghar present near Mahto Toli and JSLPS near Panchayat office can be upgraded and used for this purpose. Fig. 4.5 shows location of all social infrastructure in Neori GP.

## 4.5 OTHER PUBLIC AND SEMI PUBLIC FACILITIES

A well distributed network of police stations and police out posts throughout a habitable region to provide security to the residents and create a peaceful and law abiding community is essential. At present there is no police station in Neori, it is under Mesra Police Post which is adjacent to the village.

Also, Fire Services are needed for protecting people from fire hazards, building collapses, and other unforeseen emergencies / disasters. Fire is categorized as a disaster. It can spread over large area in no time and cause great damage to life and property. The nearest fire station is the Army Fire Station (09 km) and Raj Bhawan Fire Station (16 km) away from the village.

The Postal Service, telephone and the internet form the communication network for any area. There is one Post Office present in the village near to the Vikas Chowk and there is also one Internet Café present in the village but there is no government digital center. Nearly, all the villagers use mobile phones for telecommunication.

## 4.6 COMMERCIAL FACILTIES

The commercial facilities in Neori GP are largely confined along the flank of the NH 33. The shops aligned along GP include clothing, daily needs, furniture, groceries, motor parts, and there is also a car-showroom. There is a bi-weekly haat for vegetables, fruits and non-vegetarian items of daily use that takes place abutting to NH 33 on Monday and Thursday which creates a lot of commotion and unwanted spillover pollution on the NH. Otherwise there are a very few daily need shops dispersed over the GP to meeting grocery needs of the people.

## 4.7 RECREATIONAL FACILITIES AND OPEN SPACES

There are no designated parks or playgrounds present in the village. Although there are government open spaces in the village, they are not developed as a Park or a Playground. As per URDPFI Guidelines, 10-12 sq.m of open space per person is desirable. In the government open space a Park or a Playground is proposed be provided.

## 4.8 MISCELLANEOUS FACILITIES

The following other facilities is required in the Villages:

- Banks/ ATMs
- Poll Booths
- Rural Haats (Weekly Market)
- Dairy
- LPG Distribution Centre
- Common Service Centre (Digital Infrastructure)
- Fertilizer Shop
- Temples /Mosques/ Churches
- Cremation Sites/Burial Grounds
- Auto/ Rickshaw Stands

As per Primary Survey all the villagers have their account in the bank. There are 02 banks present in the village. There are also 02 ATMs associated with the bank present in the Village. There are 06 Polling Booths (Neori School) present in the Village and one model Polling Booth (Kanke Block) present in Neori Panchayat Bhawan. The weekly market (rural haat) (Fig. 4.6) is held from Vikas Chowk to Panchayat Bhawan along road side in the Village and is done twice in a week (Monday & Thursday). There is one Dairy also present in the village in Kendua Toli. There is no LPG Distribution Centre present in the village under Pradhan Mantri Ujjwala Yojna. Currently LPG cylinders are supplied from Booty More Distribution Centre in the Ranchi City. There is one Fertilizer shop also present in the village. There are 07 temples (Fig. 4.7), 04 mosques and 01 Sarna Sthal present in the village. There are 02 Cremation Sites (01 for ST) and 01 Burial Grounds present in the village. There is no designated space for Auto/ Rickshaw parking.


**Fig. 4.6: Rural Haat (Weekly Market) along roadside near Vikas Chowk in dilapidated condition**

*(Source:Author)*

At present there is no infrastructure for digital literacy in the Village. There are 03 internet services present in the Village.

- Pragya Kendra (Mesra Paschim)- Vikas Chowk
- Neori Pragya Kendra- Near Post Office
- One Internet Café in Kendua Toli

As per National Fiber Optics Network (E-DISHA), 2011 there has to be 01 Customer Service Centre, for every 5000 persons or 01 per Gram Panchayat which is at present lacking in the village. At least one person per household or atleast 20% population in the village has to be digital literate; this deficiency needs to be addressed.

**Fig. 4.7: A Temple in Neori GP**

*(Source:Author)*

## 4.9 PROPOSALS AND RECOMMENDATIONS

Primary objective of GPSDP is to identify and formulate ways of addressing real needs of local people. Economic development of the village is one of the prime

concerns and therefore supporting sources of income needs to be encouraged in the Village. GPs should be encouraged to develop and use locally relevant indicators on issues of development, including aligning actions with localizing the SDGs and take up activities which would increase local production and productivity, increase employment and employability, improve market access and marketability of the local produce, promote value addition, create productive infrastructure like markets, ponds, fisheries, livestock development, horticulture development, land development, minor irrigation facilities, dug wells, irrigation tanks etc. The GP should converge different programs for livelihood promotion through MGNREA, NRLM, PMAY, PMGSY, NSAP, RKVY etc.

GPSDP should focus on literacy, education, skill development, health, nutrition, livelihood promotion etc. It should focus on improving quality of human development services through Anganwadis, schools, hospitals and improving access to them.

GPSDP should be aimed at improving the wellbeing of vulnerable and marginalized groups like SCs, STs, Other Backward Classes including minorities, persons with disabilities, elderly people, women, children, bonded laborers, child laborers, distress migrants, manual scavengers, victims of trafficking etc.

GPSDP should also focus on how Panchayats can play a major role in skill building and ensure that the most vulnerable sections, including women participate in the program. GPs have to plan for generating awareness about the skills related program, facilitating the mobilization efforts, creating databases for skill demand and placement, assist in conducting the Job mela and support the project implementing agencies in all stages of skill training.

The following proposal should be developed in the Neori Village in different phases:

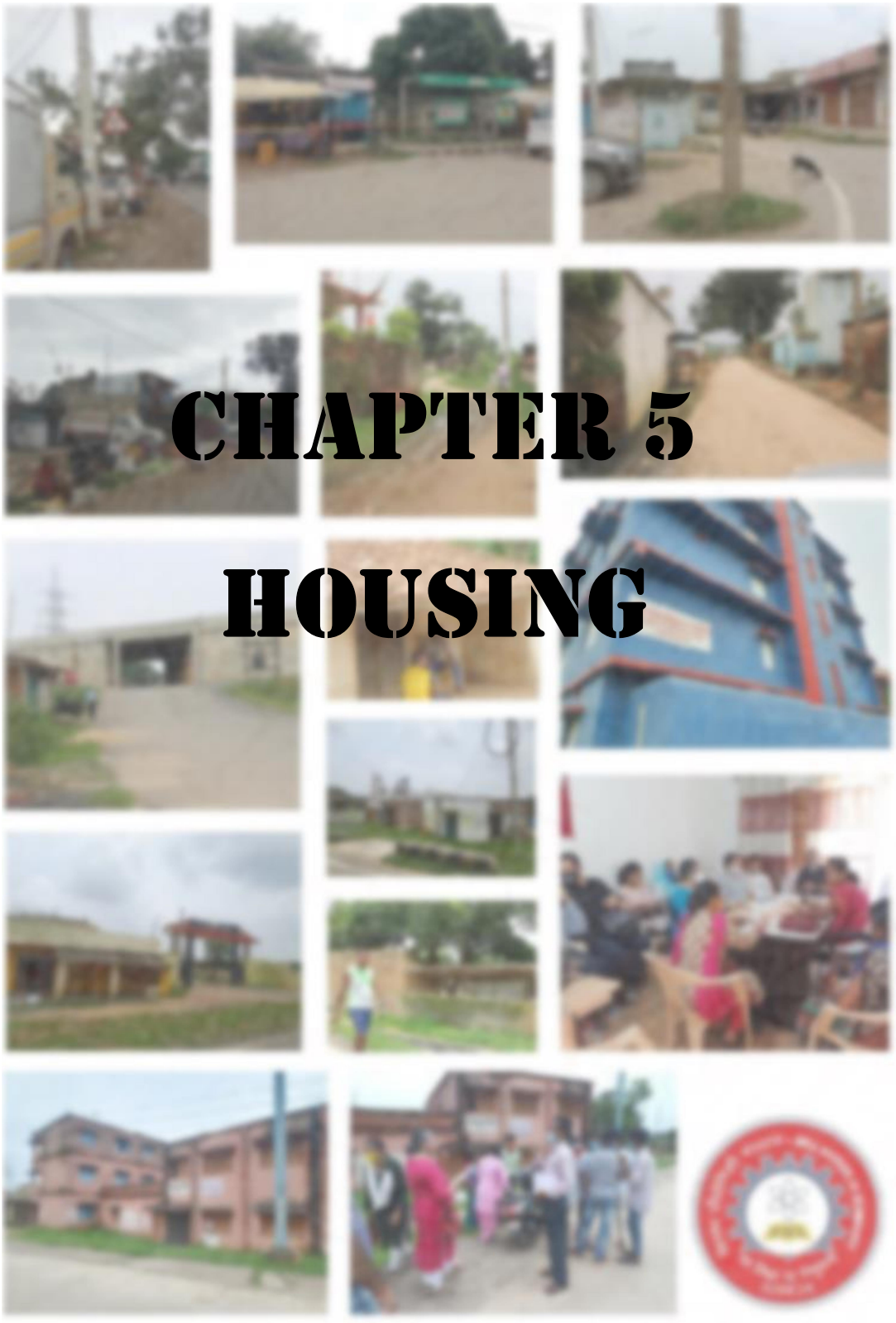
- The projected population of the Neori Village for 2026 is 11,000 and by 2031 to be almost 13,000. Residential and infrastructure developments catering to this population has to be planned in two phases. For this land parcels suitable for development and existing infrastructure up gradation and augmentation potential has to be identified and proposed in phases.
- Under the Ministry of Rural Development and Ministry of Skill Development and Entrepreneurship self-employment skills for all eligible youths must be developed. For this there has to be a Skill Development Centre, Vocational Training Institute in the Village which provides a platform for the

development of skills of villagers especially youth and women. At the same time this center or institute must focus on creation of job for the trainee at the local level within or near to the village. This can be done in the existing Panchayat Bhawan building and vacant government buildings near Panchayat Bhawan and their up-gradation.

- Under the Ministry of Human Resource Development existing government schools in the village must ensure 100% attendance and efficient learning outcomes. As in the village female literacy rate is still very low, it is because of many social and economic factors, a Government Higher Secondary School for girls (intake of 300, with a ratio of 01 teacher per 30 students) with adequate infrastructure is proposed. This school can be proposed in the existing government vacant plots in the village.All existing schools must upgrade their infrastructure, library and sports facility. A school for adult education under the scheme of Samagra Shiksha Abhiyan (SMS) providing non formal education can be proposed in the village. This can also be done in the existing AnganwadiCenters and can also work as Women and Child Development Centre.
- The tribal population has a very rich culture and culture based regeneration activities can be encouraged in the Village. For this there has to be a Community Hall or Open Space at Gram Panchayat level. A land parcel or chowk within the residential colony has to be identified for community gathering and celebrations.There is an open space near the Graveyard which is used by villagers for community in Bantoli. The existing Club ghar/JSLPS is proposed to be upgraded for the same purpose.
- As far as Health infrastructure is concerned the village is already having a Health Sub Centre, Public Health Centre and a Private Nursing Home. The existing services must be made more efficient with emergency ambulance facility, 100% immunization and 100% treatment of community spread diseases.
- The rural haat in the village has to be renovated, supported and marketed at the Panchayat level. With the development of village and increasing demand it is to be increased and made more efficient supporting the local people.
- Under the Ministry of Social Justice & Empowerment and Department of Empowerment of Persons with disabilities various schemes relating to Scholarships for SCs, STs, OBCs, Minorities and differently abled people must be provided. Skill training and Social Security for differently abled persons have to be provided and can be done at existing Anganwadi centre in a different time zone or can be done in proposed skill development centre. Aids

and appliances to these people must be provided by the GP. Community facilities (toilets) catering to the needs of this section of society also have to be provided at suitable locations.

- One LPG Distribution centercan also be proposed in the villageto facilitate better capitalization of Pradhan Mantri Ujjwala Yojna.



# CHAPTER 5

# HOUSING

# CHAPTER 5: HOUSING

## 5.1INTRODUCTION

Housing in the country has been identified as a basic human need.Thehousing sector has been on the priority list of the Government of India right from the first five-year plan till date. Envisaging for the promotion of housing, the Government has initiated various fiscal incentives, through large number of schemes, to fulfill both the demand and supply sides. These schemes, under various names, focus mainly on housing for the poor and are aligned to improve the housing conditions of industrial workers/ economically weaker sections and of low-income groups. The continuous effort from the Government through various programshave resulted in the positive growth in the totalhousing stock, which has increased from 13.30 million units in 1961 to 78.48 million units in 2011(MoHUPA, 2013).

Housing and housing amenities are important indicators to assess human well-being of a country. The statistics on living conditions, as represented by the type of housing available, average space available to each person in the house, the basic civic amenities available to the household etc. will give a picture of the overall socio-economicprogress of the society. This statistical information relating to housing condition in quantitative terms is required for anassessment of the overall housing needs and helps in the formulation of housing policies and programs along with its execution and evaluation. These housing policies and programs constitute an integral part of the overall social and economic plans of the country or part thereof.

This chapter discusses the housing situation in Neori under three sections. The first section outlines the statistical information regarding housing characteristics based on 2011 census and the primary household survey (conducted through mobile app developed by ISRO) to portray the situation in perspective. The second section deals with the key observation and findings of existing housing condition. Finally, in the concluding section, we discuss about the proposals and recommendations which need to be taken up in two phases along with suggestions for policies for ameliorating the housing condition in Neori Gram Panchayat.

## 5.2 HOUSING CHARACTERISTICS

The housing characteristics of a settlement aptly describe the socio-economic condition and highlight the aspects for which interventions in the form of physical

planning proposals and policy guidelines can be developed.This chapter compares and highlights the general characteristics of Neori gram panchayat about their the ownership status, type of structure, building height, age of structure, condition of house, profile of thekey housing characteristics and housing facilities based on 2011 census data and primary survey conducted during August 2020.

### 5.2.1HOUSE OWNERSHIP STATUS

Home ownership has been argued to provide the most stable tenure arrangement to satisfy basic household needs and promote a sense of well-being for the residents. The home tenure status, according to census 2011 data, of Neori GP shows that 82.6 percent of households own their house whereas 9.9 percent of household are rented. The remaining 7.5 percent of households had other arrangement (Table 5.1).

**Table 5.1 Percent ownership status**

| | **Census 2011** | **Primary Survey 2020** |
|---|---|---|
| Owned | 82.6 | 93.3 |
| Rented | 9.9 | 1.3 |
| Any others | 7.5 | 5.4 |
| **Number of Households** | **1230** | **1230*** |
| **Total Population** | **6907** | **6907*** |

*Mission Antyodaya Baseline Survey 2018, Neori Gram Panchayat Score Card, Ministry of Rural Development, Govt. of India

The result from primary survey indicate significant increase in percent household owning house from 82.6 percent to 93.3 percent while rented householdsdeclined from 9.9 percent to 1.3 percent. The percent of household having other arrangement also dropped from 7.5 percent to 5.4 percent. The spatial distribution of houses in Neori GP and change in ownership status from 2011 to 2020 is shown in Fig. 5.1 below:

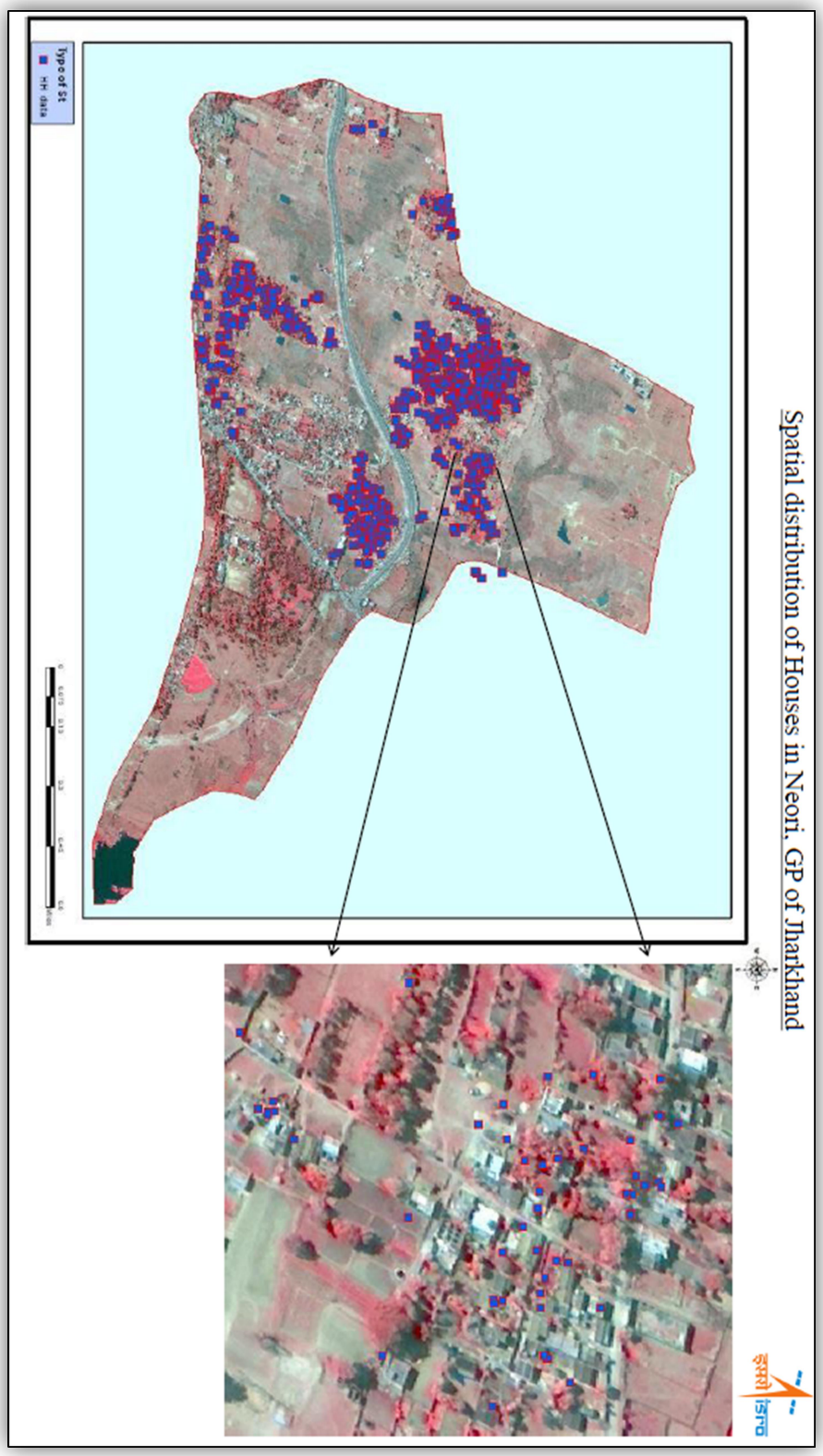



**Fig. 5.1: Spatial distribution of Houses in Neori GP**

*Source: Based on survey data; Prepared by NRSC/ISRO*

### 5.2.2 HOUSES BY TYPE OF STRUCTURE

According to 2011 census, overall 3.6 percent of households live in *kachha* houses, 40.1 percent live in *semi pucca* houses, and the remaining 56.1 percent live in *pucca* houses (Table 5.2). The data from primary survey presents a complete different situation. The percent of households living in *kachha* houses increased to 44 percent from merge 3.6 percent whereas the percent of households living in *pucca* houses decreased to 14.8 percent from 56.1 percent. The percent of households living in *semi pucca* houses decreased marginally from 40.1 percent to 39.8 percent.

**Table 5.2 Percent Household by type of structure of census houses**

| | Census 2011 | Primary Survey 2020 |
|---|---|---|
| Pucca | 56.1 | 14.8 |
| Semi-pucca | 40.1 | 39.8 |
| Kuchcha | 3.6 | 44 |
| Other | 0.2 | 1.4 |

The spatial distribution of houses in Neori GP based on house type and comparison of the percent of households living in houses by the type of structure is shown in Fig. 5.2 and Table 5.2 respectively.

### 5.2.3 HOUSES AND ITS CONDITION

Among the total census houses in Neori GP, 42.6 percent occupied for residence are classified as 'good habitable condition', whereas 48.4 percent occupied houses are classified as 'livable habitable condition'. The houses in 'dilapidated condition' account for 4 percent (Table 5.3).

**Table 5.3 Percent Household by its condition**

| | Census 2011 | Primary Survey 2020 |
|---|---|---|
| Good | 42.6 | 15.4 |
| Livable | 48.4 | 59.4 |
| Dilapidated | 4 | 25.2 |

The survey result shows that there is decrease in percent of houses in 'good' condition from 42.6 percent to 15.4 percent. The houses with 'livable' condition increased from 48.4 percent to 59.4 percent whereas there is a significant increase of houses in 'dilapidated' condition from 4 percent to 25.2 percent.

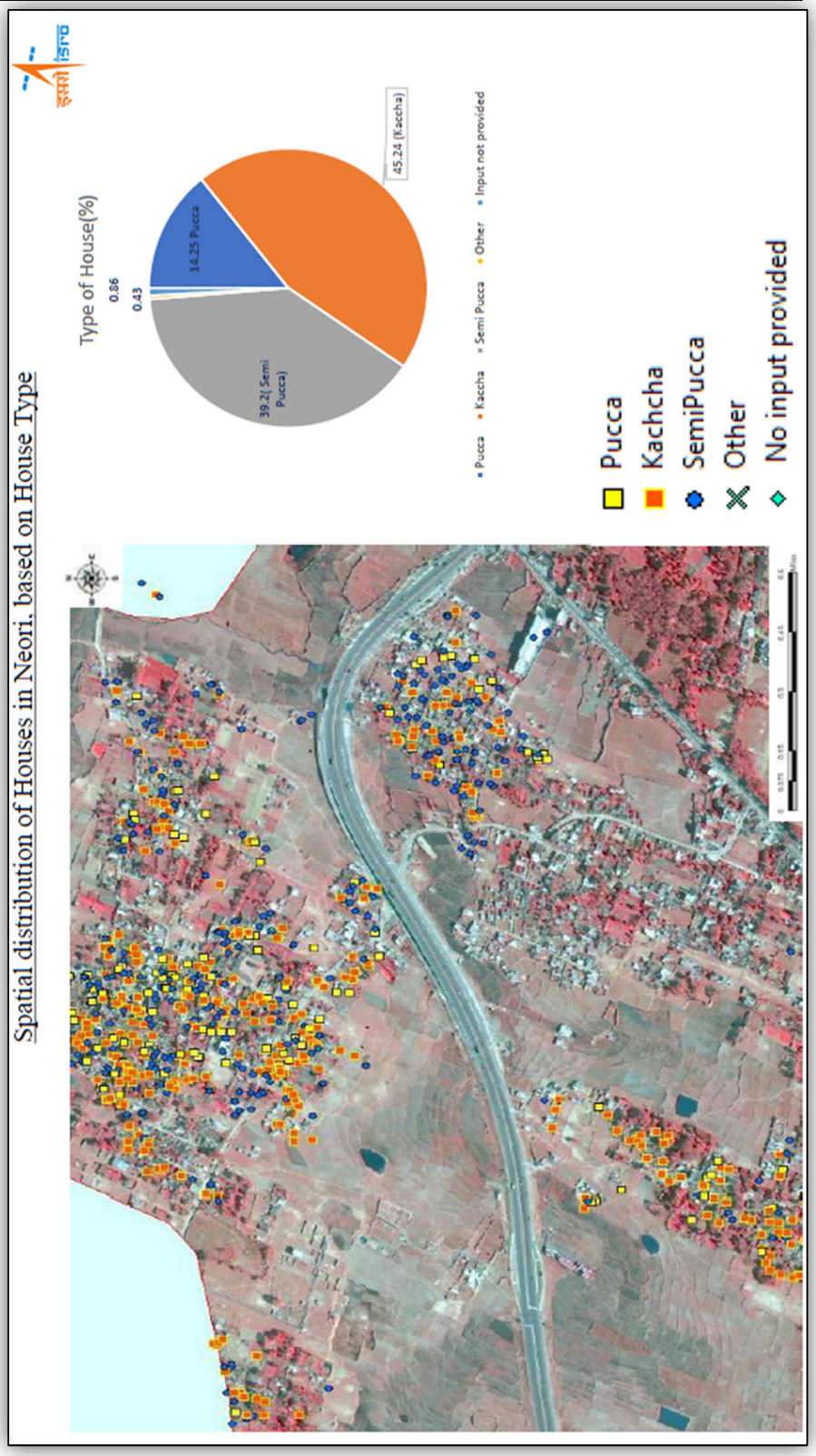



**Fig. 5.2: Spatial distribution of Houses in Neori, based on House Type**

*Source: Based on survey data; Prepared by NRSC/ISRO*

### 5.2.4 HOUSES BY ITS HEIGHT

Primary survey of the Neori GP indicates that the height of buildings is uniform to a large extent, with houses having only ground floor accounts for 96.6 percent. The houses extending up to G+1 constitute 3.4 percent whereas those with G+2 in height are only 0.2 percent of houses (Fig.5.3). The spatial distribution of houses based on heights given in Fig. 5.4.

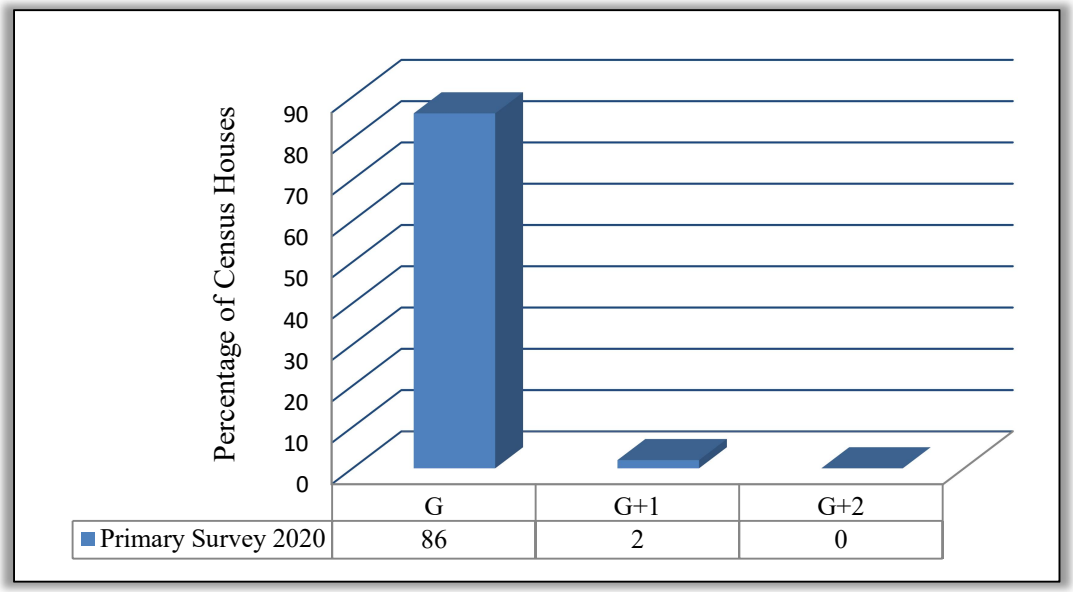



**Fig. 5.3: Percent Census Houses by its height**

*Source: Primary survey conducted during August 2020*

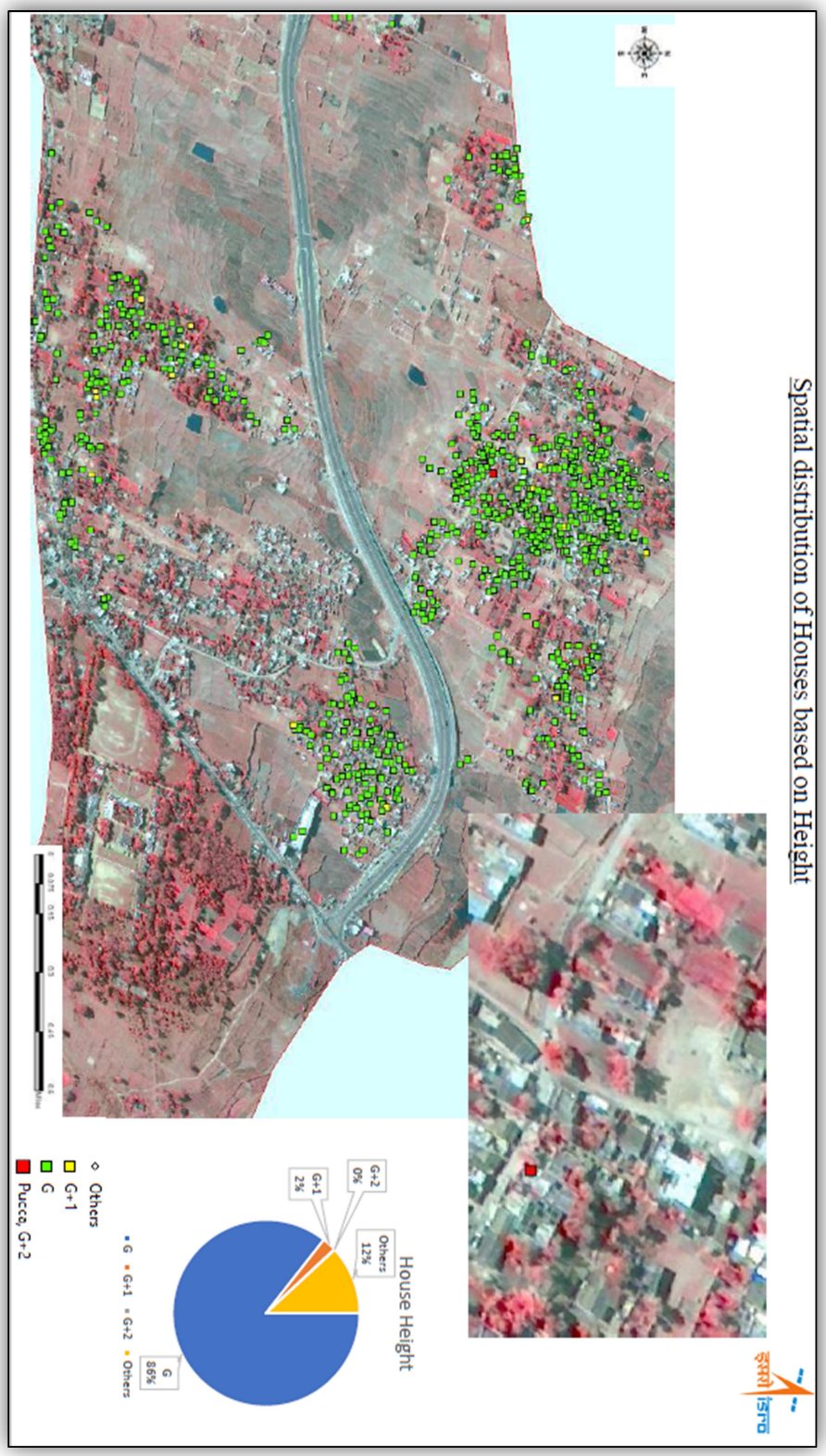



**Fig. 5.4: Spatial distribution of Houses based on Height**

*Source: Based on survey data; Prepared by NRSC/ISRO*

### 5.2.5 HOUSES BY AGE OF STRUCTURE

The household survey conducted in Neori GP attempted to determine the age of structure within its boundary. Houses constructed within ten years accounted for 35.1 percentand those constructed during past 10-20 years were 30.7 percent of total houses. Houses which are 20 to 50 years old constitute 22.2 percent whereas those constructed before 50 years are significantly less accounting for 11.9 percent (Fig. 5.5). The spatial distribution of kuccha houses based on the duration of residence is shown in Fig. 5.6.

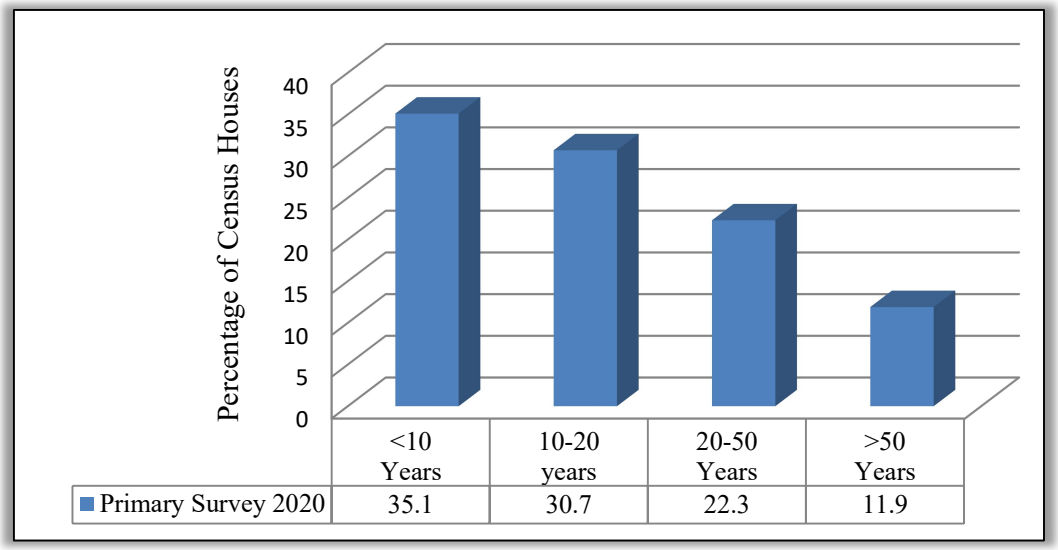



**Fig. 5.5: Percent Census Houses by age of structure**

*Source: Primary survey conducted during August 2020*

### 5.2.6 HOUSES BY MATERIAL OF ROOF

According to census 20011, the percent of houses in Neori GP with grass, thatch, bamboo, wood, mud was 5 percent, whereas those using plastic and polythene as roof material were 0.3 percent. Houses with roof made of handmade tiles and brunt bricks were 21.9 percent and 1.3 percent respectively. GI metal and asbestos sheets etc. constitute 44.4 percent of census house in Neori GP 68.4 percent. Houses with roof made concrete were 26.2 percent (Table 5.4).

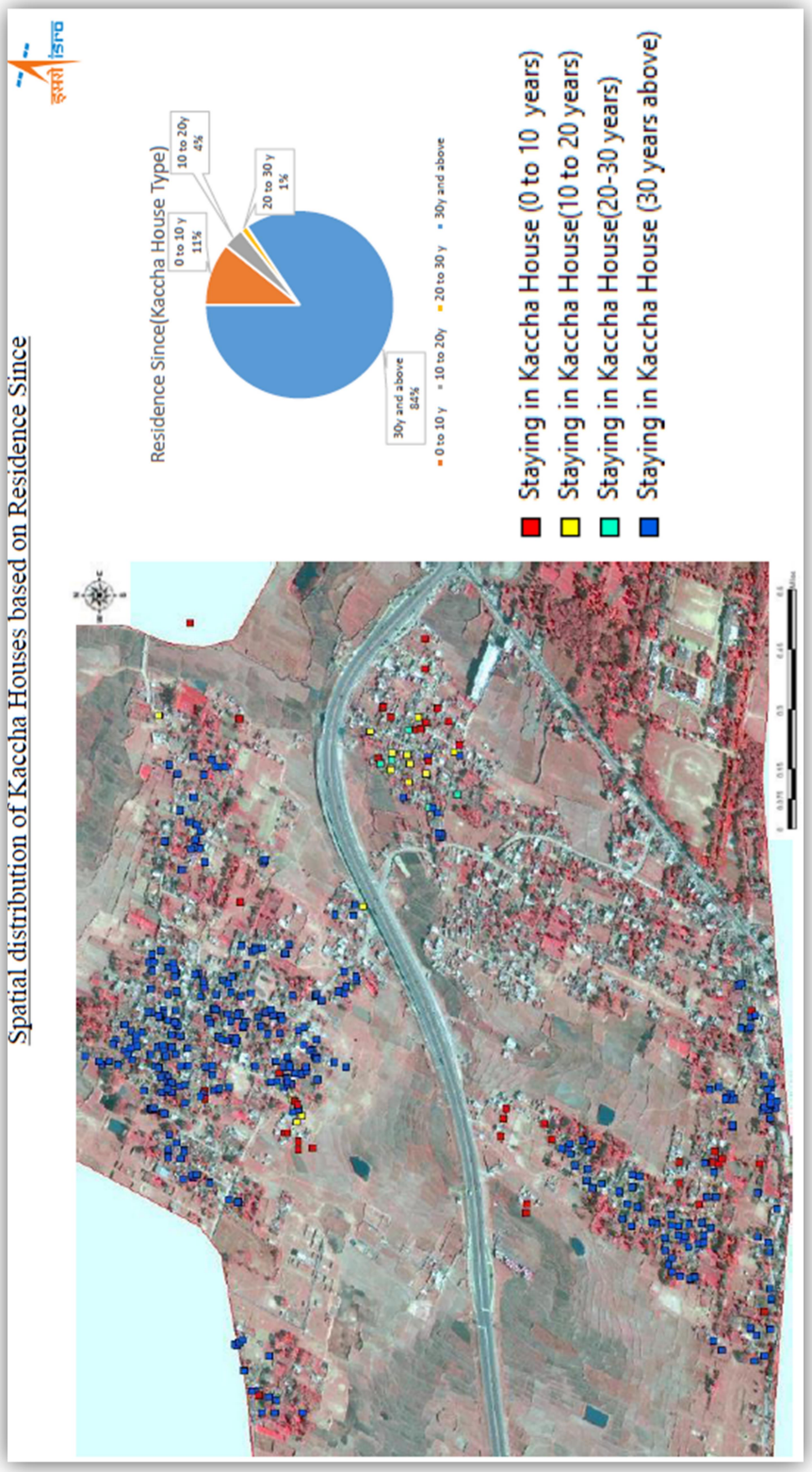



**Fig. 5.6: Spatial distribution of Kuccha Houses in Neori, based on age of residence (***Source: Based on survey data; Prepared by NRSC/ISRO)*

| Table 5.4 Percent of houses by the material of roof | | |
|---|---|---|
| | **Census 2011** | **Primary Survey 2020** |
| Grass/ Thatch/ Bamboo/ Wood/Mud etc. | 5 | 19.7 |
| Plastic/ Polythene | 0.3 | 0 |
| Handmade Tiles | 21.9 | 25.8 |
| Machine made Tiles | 0 | 0 |
| Burnt Brick | 0.8 | 0 |
| Stone/ Slate | 1.3 | 5.7 |
| G.I./Metal/ Asbestos sheets | 44.4 | 37.1 |
| Concrete | 26.2 | 11.7 |
| Any other material | 0 | 0 |

The primary survey reveals that the percent of houses with grass, thatch, bamboo, wood, mud increased to 19.7 percent from 5 percent. Houses with roof made of handmade tiles increased to 25.8 percent from 21.9 percent. Use of GI metal and asbestos sheets etc. as a roof material decreased to 37.1 percent from 44.4 percent. Houses with roof made concrete decreased from 26.2 percent to 11.7 percent.

### 5.2.7 HOUSES BY MATERIAL OF WALL

According to census 20011, the walls made of burnt bricks were prominent in Neori GP and constituted 53.2 percent of census houses followed by mud and unburnt bricks constituting 42 percent of houses. Walls made up of stone packed with mortar and of stone not packed with mortar were 2.6 percent and 0.8 percent respectively.

| Table 5.5 Percent of houses by the material of wall | | |
|---|---|---|
| | **Census 2011** | **Primary Survey 2020** |
| Grass/ Thatch/ Bamboo etc. | 0.1 | 0.3 |
| Plastic/ Polythene | 0.1 | 0 |
| Mud/ un burnt bricks | 42 | 58.9 |
| Wood | 0 | 0 |
| Stone not packed with mortar | 0.8 | 0 |
| Stone packed with mortar | 2.6 | 3.7 |
| G.I./ Metal/ Asbestos sheets | 0 | 0 |
| Burnt brick | 53.2 | 35.9 |
| Concrete | 1.1 | 1.5 |
| Any other material | 0.2 | 0 |

The walls made of Grass, Thatch, Bamboo etc. and those made of Plastic or Polythene were 0.1 percent each. Concrete used as a wall material constituted 1.1 percent of the census houses in Neori GP (Table 5.5).

The primary survey of households indicates that the percent of houses with wall made of burnt bricks decreased from 53.2 percent to 35.9 percent whereas walls made of mud and unburnt bricks increased from 42 percent to 58.9 percent.Walls made up of stone packed with mortar increased from 2.6 percent to 3.7 percent. The walls made of Grass, Thatch, Bamboo etc.and those made of concrete also increased marginally from 0.1 to 0.3 percent and from 1.1 to 1.5 percent respectively.

### 5.2.8 HOUSEHOLD DISTRIBUTION BY DRINKING WATER SOURCE

There is limited number of households in Neori having access to an improved source of drinking water. An improved source of drinking water includes, in addition to water piped into the dwelling, yard or plot, water available from a public tap or standpipe, a tube well or borehole, a protected dug well, a protected spring, and rainwater (Table 5.6).

**Table 5.6 Household distribution by drinking water**

| Source | Census 2011 | Source | Primary Survey 2020 |
|---|---|---|---|
| Tap water from treated source | 8.2 | Public Tap | 4.4 |
| Tap water from untreated source | 1.2 | Private Tap | 5.9 |
| Covered well | 2.2 | Covered well | 0 |
| Un-covered well | 51.2 | Un-covered well | 47 |
| Hand-pump | 33.9 | Hand-pump | 30.9 |
| Tubewell/Borehole | 1.5 | Tubewell/Borehole | 11.1 |
| Spring | 0 | Spring | 0 |
| River/ Canal | 0 | River/ Canal | 0 |
| Tank/ Pond/ Lake | 0 | Tank/ Pond/ Lake | 0 |
| Other sources | 1.8 | Other sources | 0.6 |

According to census 2011, only 8.2 percent of households in Neori have access to treated piped water and 1.2 percent of households get tap water from untreated source. Most people obtain their drinking water from uncovered well (51.2 percent) and hand-pump (33.9 percent); however, 2.2 percent of households get water from covered well

and 1.5 percent of households depend upon Tubewell/Borehole for their water requirement.

The result from primary survey shows that 4.4 percent of households have access to public tap and 5.9 percent of households have private tap in their house. Majority of household (47 percent) fulfill their water need from well and 30.9 percent of households get water from hand-pumps. 11.1 percent of households draw water from bore-well and 0.6 percent of households get water from other sources.

### 5.2.9 HOUSEHOLD DISTRIBUTION BY TYPE OF FUEL USED FOR COOKING

Smoke from solid cooking fuels is a serious health hazard. Solid cooking fuels include coal/lignite, charcoal, wood, straw, shrubs, grass, agricultural crop waste and dung cakes. Among Neori GP households, those using coal, lignite and charcoal were 49.2 percent followed by cow dung cake using household at 20.1 percent. Crop residue as a fuel for cooking purpose was used by 7.7 percent and 6.8 percent of households used fire wood. Thus, 83.8 percent of household use solid cooking fuel. The households using LPG/PNG were at 15.8 percent. The use of Kerosene oil and biogas are abysmally low with household at 0.1 percent each (Table 5.7).

**Table 5.7 Percent of houses by type of fuel used for cooking**

| Types of fuel | Census 2011 | Primary Survey 2020 |
|---|---|---|
| Fire-wood | 6.8 | 9.6 |
| Crop residue | 7.7 | 0 |
| Cowdung cake | 20.1 | 22.6 |
| Coal,Lignite,Charcoal | 49.2 | 27.4 |
| Kerosene | 0.1 | 0.1 |
| LPG/PNG | 15.8 | 39.1 |
| Electricity | 0 | 0 |
| Biogas | 0.1 | 1.2 |
| Any other | 0.1 | 0 |

The result from primary survey shows that households, using coal, lignite and charcoal decreased from 49.2 percent to 27.4 percent whereas those using LPG increased from 15.8 percent to 39.1 percent. Fire wood as a fuel for cooking purpose increased from 6.8 percent to 9.6 percent and use of cow-dung cake increased from 20.1 percent to 22.6 percent. The use of Kerosene oil remained stagnant for 0.1

percent households. The use of biogas for households has increased from 0.1 to 1.2 percent.

### 4.2.10 HOUSEHOLD DISTRIBUTION BY AVAILABILITY OF TOILET FACILITIES

The primary household survey conducted in Neori GP reveals that 83.9 percent of households are having toilet facility and 16.1 percent of household have no access to formal toilet facility. The households who use community toilet are 6.9 percent and those going for open defecation constitute 9.2 percent (Fig. 5.7). Out of the households owning the toilet facility 30.3 percent of household constructed the toilet through Government sponsored schemes whereas 69.7 percent constructed the toilet by their own resources. Financial assistance ranging from Rs. 10,000 to Rs. 20,000 was provided to construct toilet through various schemes.

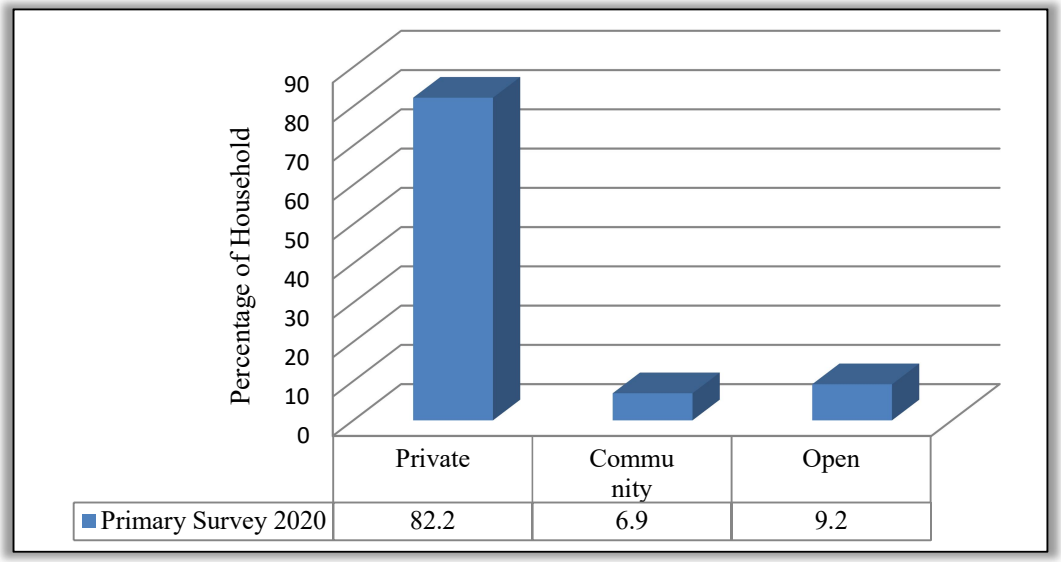



**Fig. 5.7: Percent Household by availability of toilet facility**

*Source: Census 2011 and primary survey conducted during August 2020*

The spatial distribution of houses is shown based on caste in Fig. 5.8, availability of BPL card in Fig. 5.9, based on area of land in Fig. 5.10, availability of water in Fig. 5.11, condition of house in Fig. 5.12, solid waste disposal in Fig. 5.13 and availability of toilets are shown in Fig. 5.14 respectively.

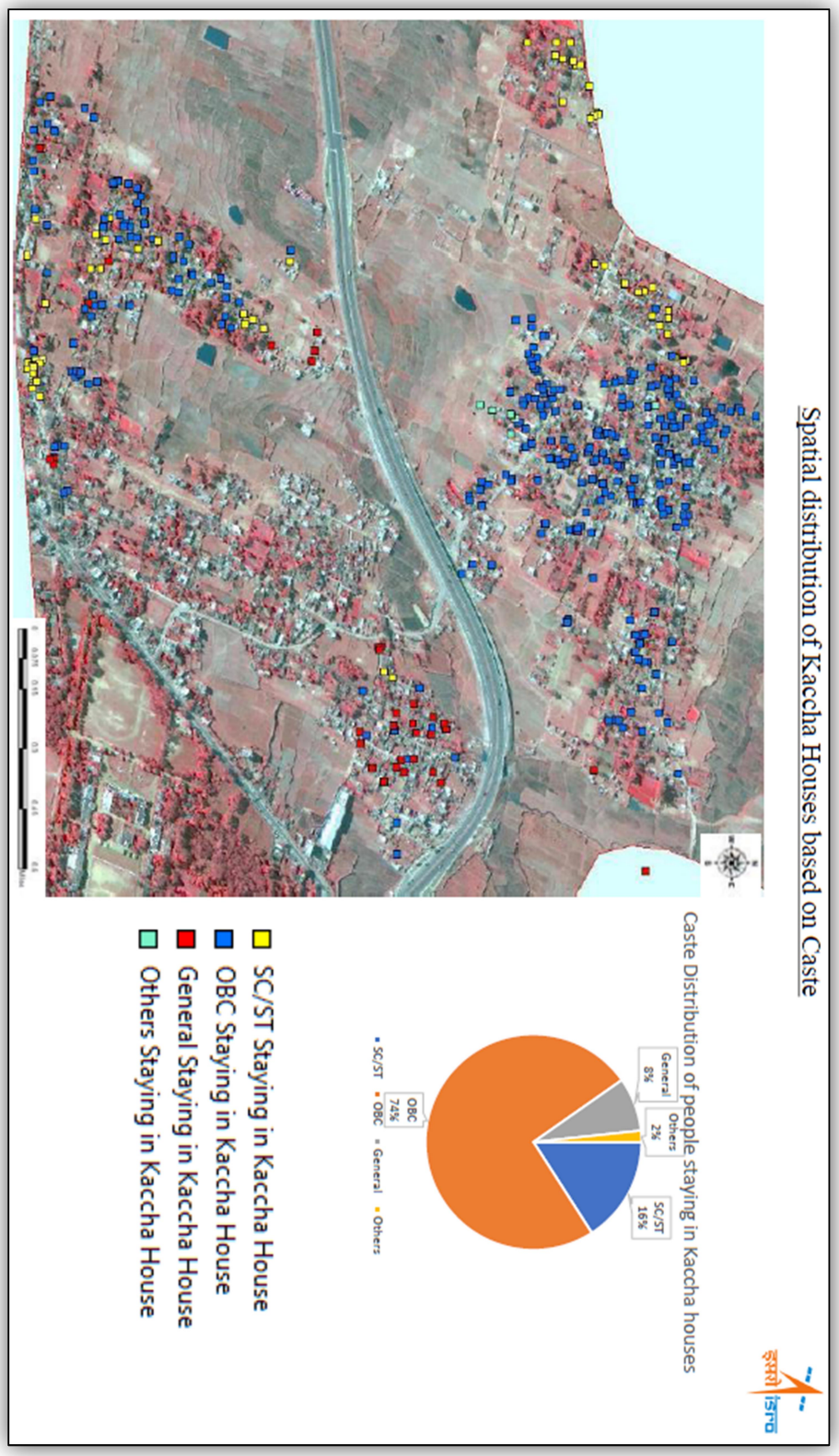



**Fig. 5.8: Spatial distribution of Kuccha Houses in Neori, based on Caste**

*Source: Based on survey data; Prepared by NRSC/ISRO*

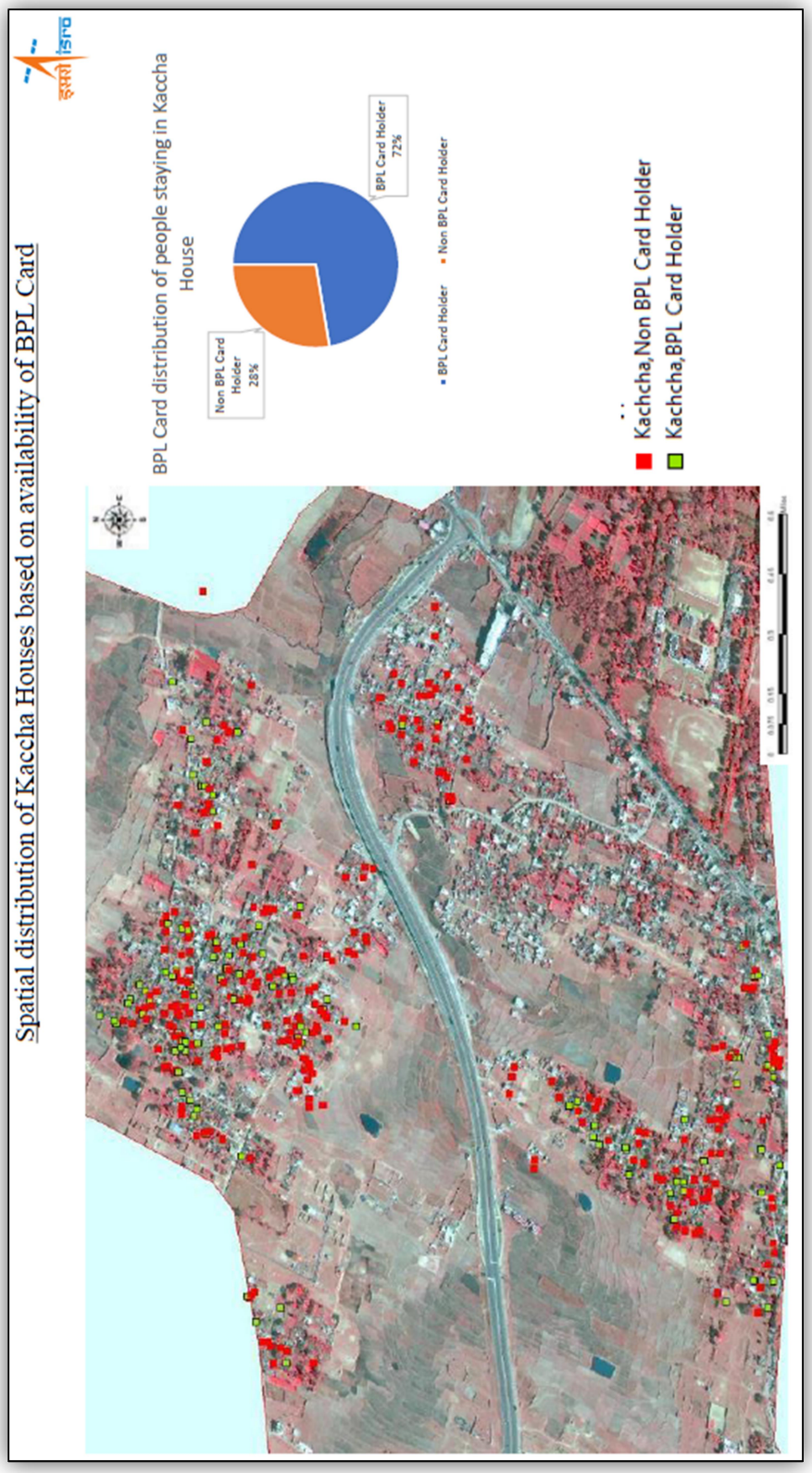



**Fig. 5.9: Spatial distribution of Houses in Neori, based on availability of BPL card (***Source: Based on survey data; Prepared by NRSC/ISRO)*

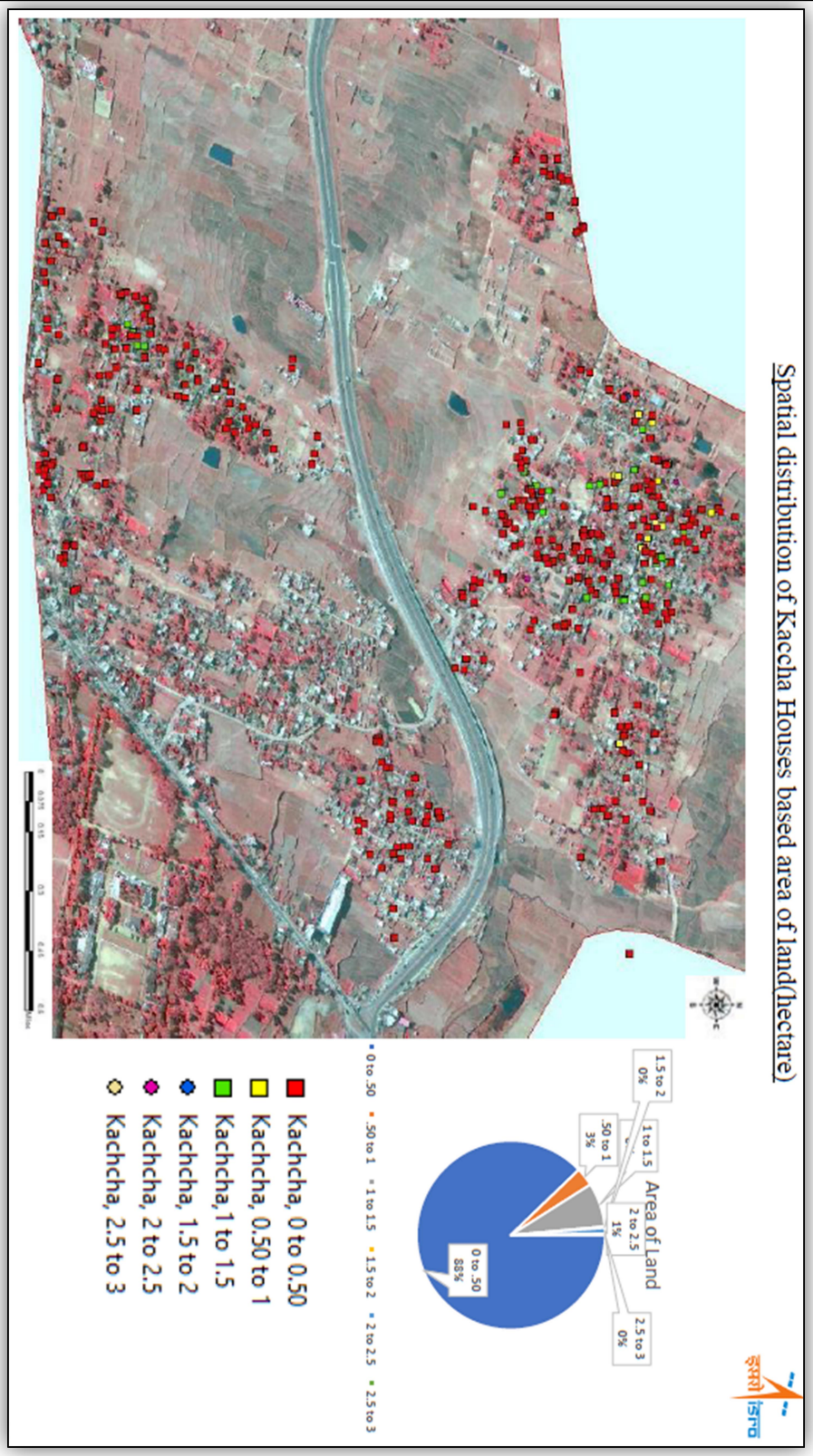



**Fig. 5.10: Spatial distribution of Houses in Neori, based on area of land (Hectare)**

*Source: Based on survey data; Prepared by NRSC/ISRO*

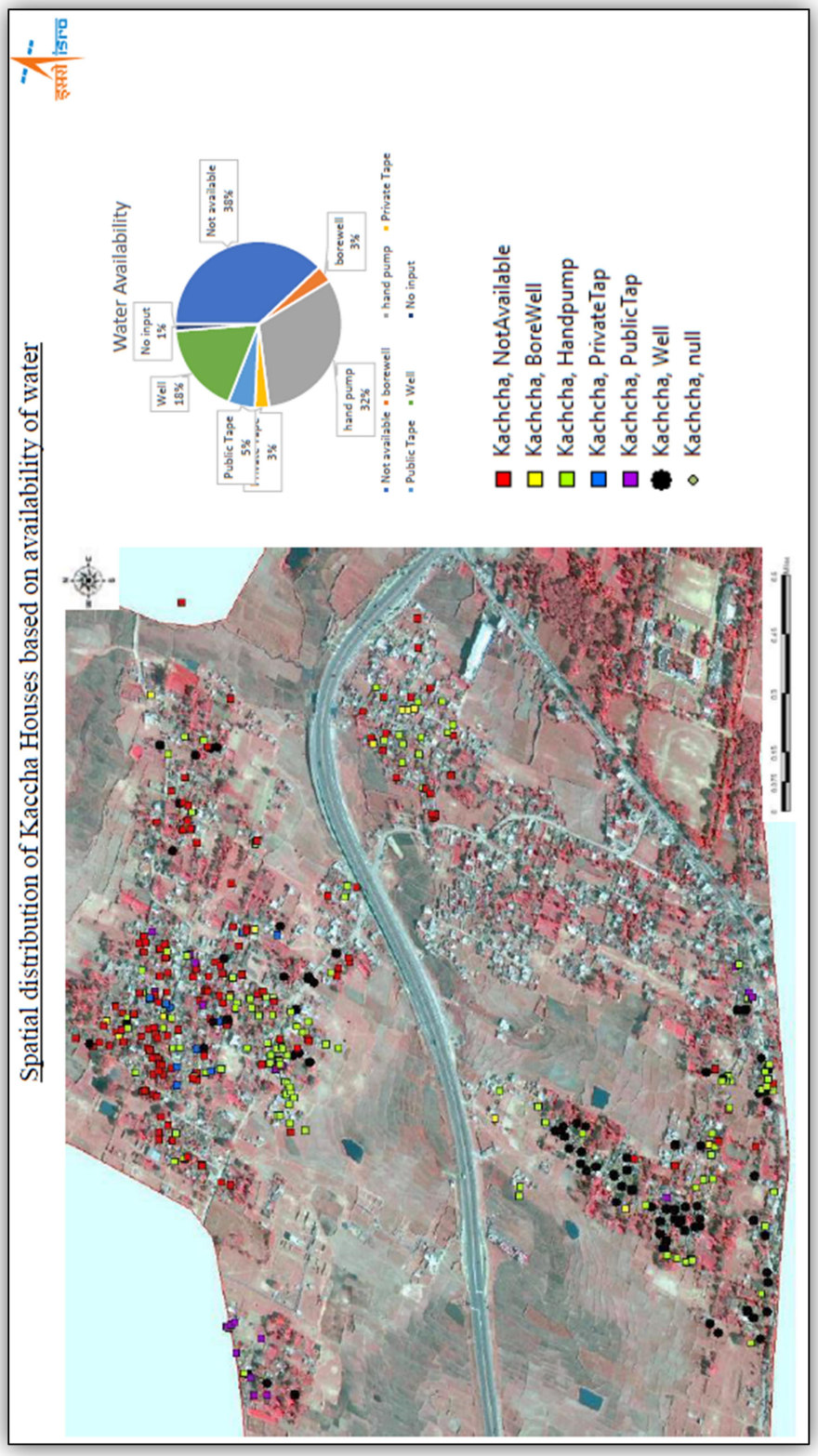



**Fig. 5.11: Spatial distribution of Houses in Neori, based on availability of water**

*Source: Based on survey data; Prepared by NRSC/ISRO*

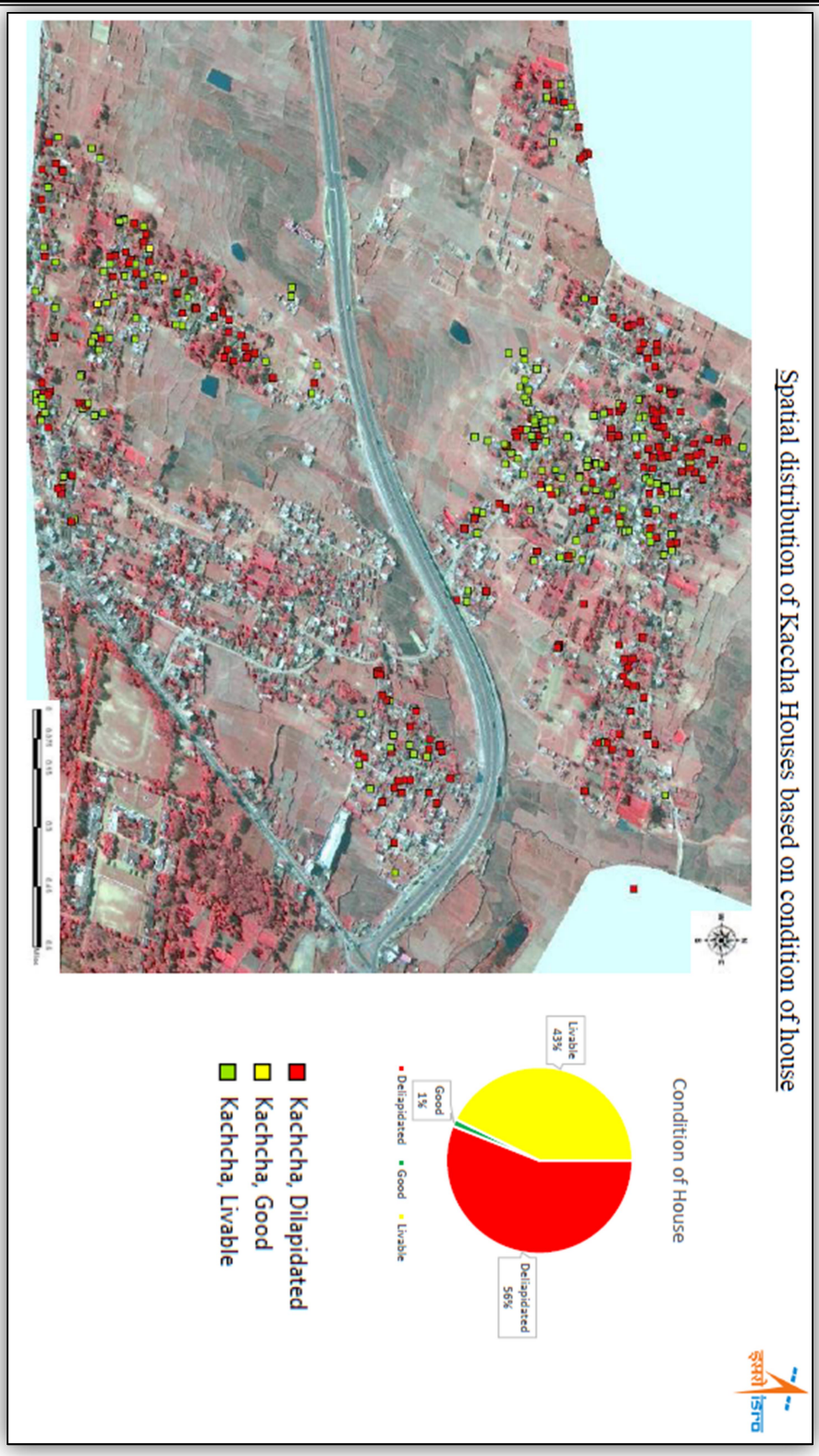



**Fig. 5.12: Spatial distribution of Houses in Neori, based on condition of House**

*Source: Based on survey data; Prepared by NRSC/ISRO*

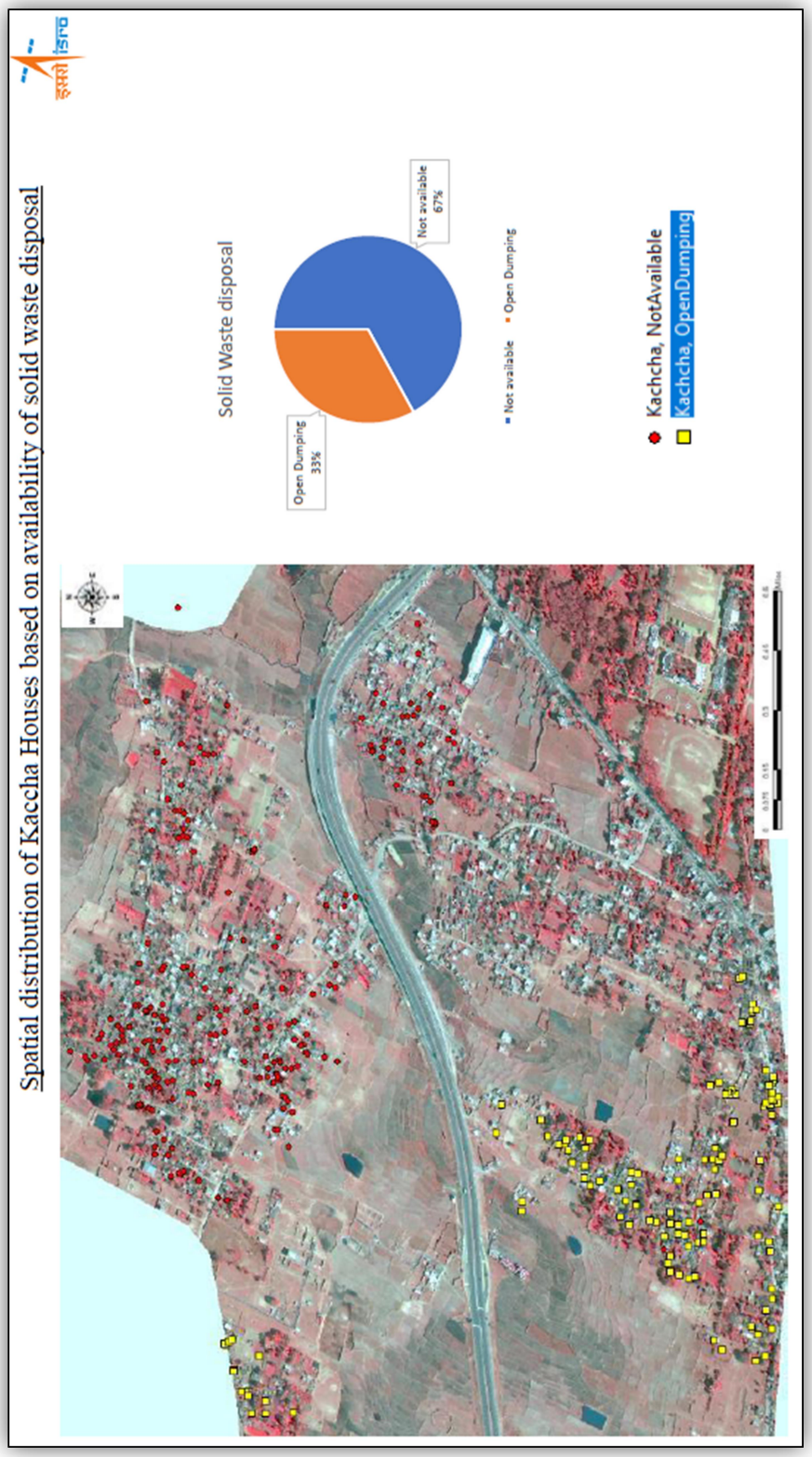



**Fig. 5.13: Spatial distribution of Houses in Neori, based on availability of solid waste disposal (***Source: Based on survey data; Prepared by NRSC/ISRO)*

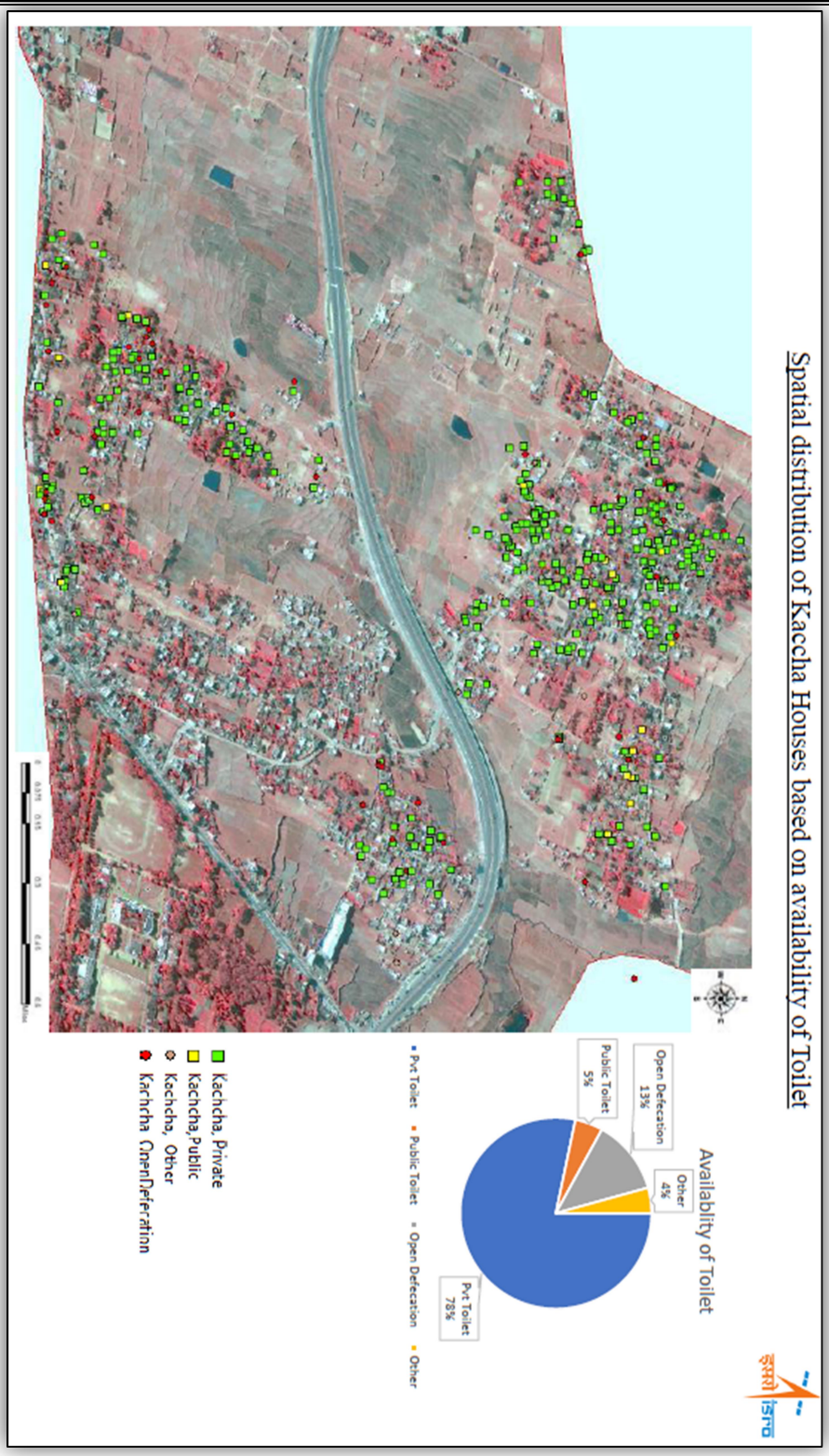



**Fig. 5.14: Spatial distribution of Houses in Neori, based on availability of Toilet**

*Source: Based on survey data; Prepared by NRSC/ISRO*

## 5.3 KEY OBSERVATIONS OF EXISTING HOUSING CONDITION

The following are the key observation regarding the existing housing condition of Neori GP:

- Though the homeownership percent has increased significantly from 82.6 % to 93.3 %, the conditions of houses have deteriorated considerably. The percent of dilapidated houses have increased from 4 % to an alarming 25.2 % (Fig.5.15).
- The increase in home ownership can also be attributed to the increase in the construction of Kuchcha houses which escalated from 3.6 % to 44 % (Fig.5.16).

**Fig. 5.15: Dilapidated house in Neori GP,** *Source: Author*

**Fig. 5.16: Kuchcha house in Neori GP** *Source: Author*

- Neori GP is characterized by houses of single floor which accounts for 96.6 percent of total houses (Fig. 5.17).

**Fig. 5.17: Single floor houses in Neori GP**

**Fig. 5.18: Houses in Neori GP constructed within the span of 10 years**

*Source: Author*

**Fig. 5.19: Houses in Neori GP with temporary roof material** *Source: Author*

- Majority of houses in Neori GP (35.1 percent) are built within the span of 10 years. This is an indication of future growth potential of Neori GP (Fig. 5.18).
- There is a visible concern regarding materials used as roof and floor in house. In 88.3 percent of

houses, roofs are made of materials other than concrete, whereas a total of 64.1 percent of houses do not have burnt bricks as the material of wall (Fig. 5.19).

- The households having access to tap water in Neori GP is mere 10.3 percent. The flagship scheme of "Nal se Jal" through Jal Jeevan Mission, under the newly created Jal Shakti Ministry needs toexpeditethe process in order to achieve the objective of providing tap water to every rural households.
- Only 4 out of 10 households (39.1 percent) use LPG as fuel type for cooking purpose. Under Pradhan Mantri Ujjawala Yojna, the beneficiary needs to be identified and extended with LPG facility.
- About 1 in 10 households (9.1 percent) resort to open defecation. It is observed that 30.3 percent of households have received financial assistance ranging from Rs. 10,000 to Rs. 20,000 under various schemes to construct or upgrade toilets in Neori GP. The households having no toilet facility need to be extended financial support to achieve the objective of Open Defecation Free (ODF) Gram Panchayat.
- According to the report of MGNREGA, under the aegis of Pradhan Mantri Grameen Awas Yojna (PMGAY), during the financial year of 2019-20, construction of 79,524 houses in rural areas of Jharkhand has been sanctioned but work has not started. There are total of 22,587 projects which are ongoing and construction of 82 houses has been completed. The Panchayat office of Neori GP has constructed only 41 houses under PMGAY since its inception.

## 5.4 PROPOSALS AND RECOMMENDATIONS

It has been proposed to undertake the implementation of planning proposals under two distinct phases. The first phase will be for the period of 2020 to 2026 and the second phase will run through 2026 to 2030.

### FIRST PHASE (2020-2026)

It has been observed that the demands for housing in Neori GP may arise under following circumstances.

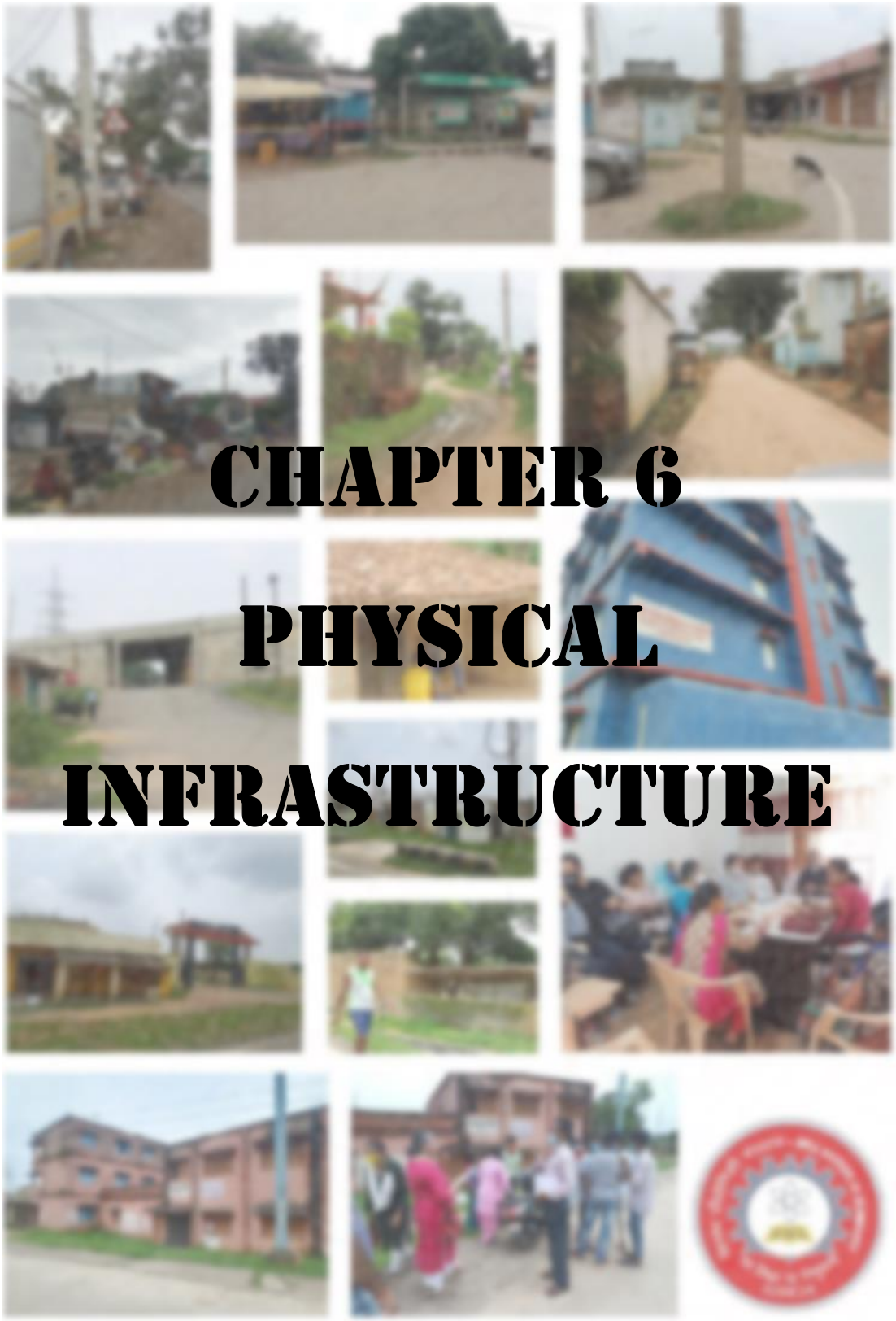
- The houses in dilapidated condition should be taken up for repairing and reconstruction in situ through PMGAY. The process can be expedited by removing bottlenecks in the identification of beneficiary and attending to the vulnerable households on priority basis. The housing delivery mechanism under this head will be government assisted. Availability of microfinance for housing needs to be promoted.

- The projected population for 2026 is 11,051, an increase of 4,144 persons. Considering the current household size of 5.62, 738 housing units will be required in the first phase. Assuming the requirement of 50 sq m plot size for each house and allowing 20 percent for access and other infrastructural facilities, total land requirement will be 44,280 sq m or 11 acres. The record of Panchayat office states the availability of 2acres of government owned land as shown in map in Fig. 5.17. This land will cater to the requirement of 130 houses. It is further proposed that the state government may take initiative todevelop land information system, where fallow lands and other wastelands are highlighted. The housing delivery mechanism will be partially government assisted up to the extent of land available with the government through public private partnership/joint venture. The rest of the housing requirement will be developed as per the housing market dynamics and can be taken up by builders/developers or individual households.
- It has been proposed to extensively upgrade the social and physical infrastructure,which will boost the employment requirement in the Neori GP. Housing will be needed in Neori GP by persons seeking work in Neori GP or in nearby urban areas. As Neori GP is under the strong influence of capital city of Ranchi, it is expected that development driven by Ranchi will take place within the planning area of Neori GP. The presence of outer ring road and NH within the planning area of Neori GP will further accelerate the development process and would generate additional housing need.The builders/developers or individual household will undertake land transaction process and construct the house as per market demand or their individual requirement.

**SECOND PHASE (2026-2030)**

The housing requirement in second phase will be mainly due to the population growth and extent of development in the Neori GP.

- The projected population for 2030 is 12,930, an increase of 1889 persons which would require additional 336 housing units in second phase of development. Based on the previous assumption total land requirement will be 20160 sq m or about 5 acres. In this phase, it is proposed that group housing be delivered through public private partnership/joint venture so that government can take care of LIG and EWS section of the society.
- The housing requirement generated by accelerated development process as mentioned during the first phase will be met through individual endeavor and private builders/developers.



# CHAPTER 6

# PHYSICAL INFRASTRUCTURE

# CHAPTER 6: PHYSICAL INFRASTRUCTURE

## 6.1 INTRODUCTION

For the efficient operation of a society and necessary for an economy to function with sustainability, physical infrastructures are highly required. Socio-economic growth of a town is facilitated with working on land resources and the provision of the physical infrastructures in the form of roads, water supply, waste water management, drainage networks, street lighting and solid waste management. Physical infrastructures are the most important assets of a town in terms of capital investment, provision of services and sustainable and resilient development. The impact of various physical infrastructures has been increasingly going beyond their core functions and which suggests that a wider array of stakeholders should be involved in making decisions on infrastructure development policies.

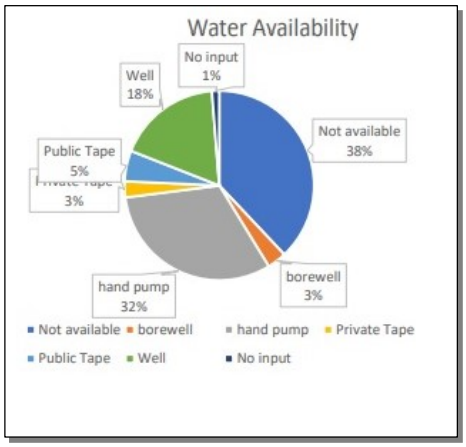
This chapter comprises of abovementioned various components of physical infrastructures and deals with them by studying the existing scenario, analyzing the demand and supply gap and accordingly propose for the future growth in an integrated manner so as to facilitate the socio-economic growth of the study area of Neori GP and is outlined below.

## 6.2 WATER SUPPLY

Planning for water supply system starts with the search of a source of water supply in the vicinity of the study area. Its capacity to serve for the planning period is of utmost importance. Storage for the further treatment of water is the next step in the process. Storage may be underground or at an elevated level. Elevated service reservoirs create the required pressure head for the distribution networks. Suitable system should then be designed to distribute the treated water through a network of distribution pipes to the individual households.

### 6.2.1 EXISTING STATUS

There is no provision of piped water distribution system in the entire Gram Panchayat area. Currently water supply in Neori GP consists of both ground water and surface water sources. People use water from hand pump, well and bore well. Data collected through mobile application survey (refer Fig. 6.1) suggests that 38% of household still




don't have the availability of water. Water is available to 32% of the households through the hand pumps. Water availability is 5% from the private tap and 3% from the public tap system. Public tap water availability is through 16 numbers of Jal Meenars. Water is available to 3% of households through private bore wells.

**Fig. 6.1: Availability of water in Neori GP**

*Source: Mobile App survey data collection and visualization of Neori GP*

### 6.2.2 GROUND WATER

The Neori GP is primarily being sustained by ground water sources. The existing ground water resources are dug wells and hand pumps. There are around 156 nos. of wells with private ownership and 02 nos. with government ownership. As per the survey conducted by Census 2011, about 56% of the population is depending on Dug Wells and rest is dependent on Jal Meenars and Hand Pumps (Fig. 6.2).

Jal Meenar

Hand Pump

Private Well

**Fig. 6.2: Sources of underground water in Neori GP**

*Source: Author*

Considering the need of the people GP has installed around 16 Jal Meenars (solar operated deep tube wells) for supporting the existing supply water system through point source (Fig. 6.3). A declining trend of ground water has been noticed during recent years specifically during the summer.

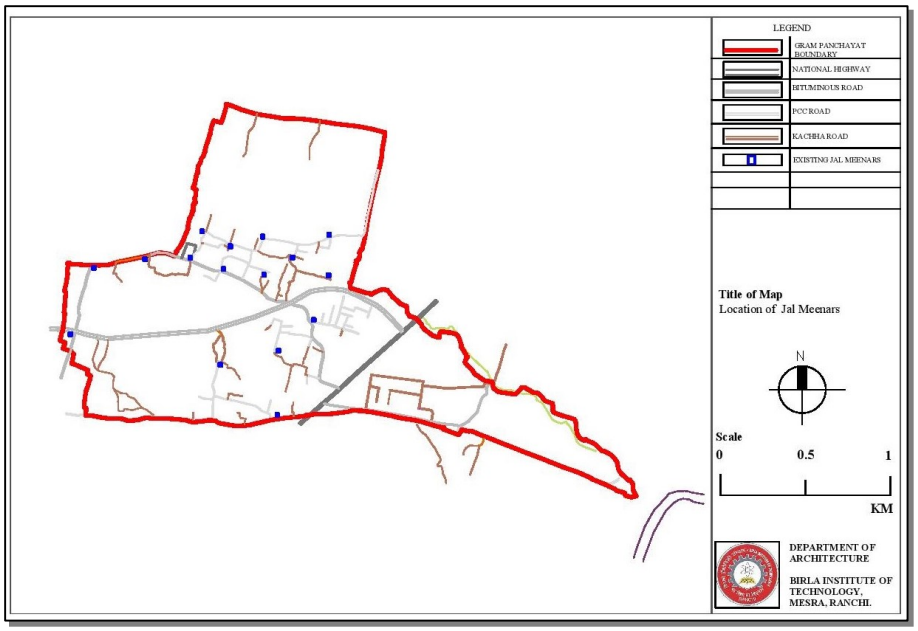
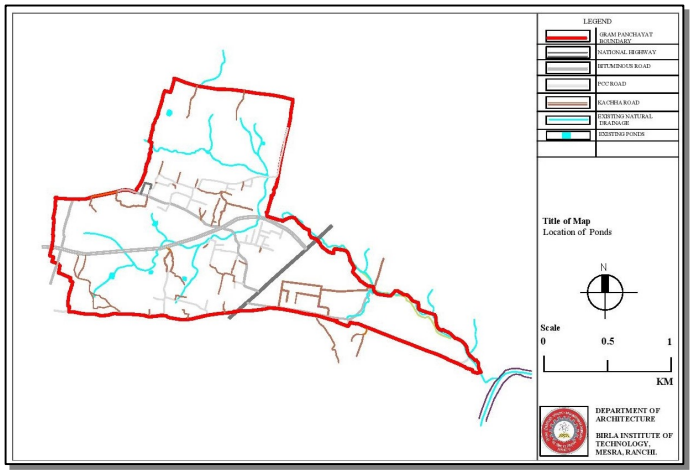



**Fig. 6.3: Map showing the location of Jal Meenars in Neori GP**

*Source: based on survey; prepared by the BIT Mesra Team*

Jal Meenars are the only source of water for the people who doesn't own a private dug well as most of the hand pumps are not operational. The distance travelled to and fro for many households is beyond the walking distance and hence they prefer either their own well or they rely upon the nearby wells. The following map shows the location of the existing Jal Meenars in the Neori GP.

### 6.2.3 SURFACE WATER




A large section of the GP are still dependent on local surface water resources i.e. the ponds. There are 6 number of Ponds (refer to Fig. 6.4) in the GP inclusive of private and govt. ownership and used for washing, bathing and other domestic purposes in the villages.

**Fig. 6.4: Map showing the location of Ponds in Neori GP**.

*Source: based on survey; prepared by the BIT Mesra Team*

### 6.2.4 SERVICE LEVEL BENCHMARKING

Following Table 6.1 shows the service level benchmarking for the water supply in the Neori GP.

**Table 6.1: Service level benchmarking for Water Supply**

| Sl. No. | Water Supply Indicators | Benchmarks | Neori GP Status |
|---|---|---|---|
| 1 | Coverage of piped water supply | 100% | 0% |
| 2 | Per capita supply of conduited water | 135 lpcd. | no piped supply |
| 3 | Coverage of water supply by Jal Meenars | | 44%* |
| 4 | Extent of metering of water connection | 100% | 0% |
| 5 | Extent of non-revenue water | 20% | 0% |
| 6 | Continuity of water supply | 24 hours | no piped supply |

*Source: SLB report by MoUD, Govt. of Jharkhand*

** As per the survey conducted.*

### 6.2.5 WATER QUALITY

As non conduited supply of water is too low to meet the extent and need of the populace of the GP, a significant number of people is surviving only on ground water through Jal Meenars, dug wells, hand pumps etc. During the field visits and interaction with the community, it was revealed that the general quality of surface water being consumed is hard in nature with a higher concentration of iron.

### 6.2.6 WATER DEMAND ASSESSMENT

Water demand assessment starts with the identification of the source of water supply in the vicinity of the Neori GP. Further the water demand is assessed based on the projected population. The storage should be designed for the ultimate design capacity keeping in view the non-revenue water.

#### 6.2.6.1 Source of water supply

Getalsud Dam on the Subarnarekha River is the major, surface water source, located in the vicinity of the GP, at the distance around 3 km at Rukka. As per Master Plan of

Ranchi 2037, the total design capacity of Getalsud Dam is 341.0 MLD and currently 171 MLD water is being supplied to a major part of Ranchi city from this Dam. Hence the present capacity of this Dam is able to cater to the needs of Neori GP. The supply mains of this Dam pass through the western boundary of the GP along the National Highway 33. Another water supply mains pipeline laying is over along the Ring Road, branching from the same water supply trunk line, and is proposed to start supply shortly. Tapping of water from these two supply mains at a suitable point or points (refer Fig. 6.5), may provide an economical solution by taking use of this existing infrastructure, for the source of water supply of Neori GP. Moreover, the water that is supplied through the Rukka-Ranchi Trunk line is treated water. There is a treatment plant of 114 MLD with an intake capacity 171 MLD intake well in the vicinity. Since the Ring Road supply mains is branching from this Rukka-Ranchi trunk line, hence in near future, when the supply will start, this will also be treated water. This existing water supply infrastructure is going to prove an economical facility for the Neori GP, as there is no need to treat the tapped water. Only storage of water and further the distribution of water have to be considered for Neori GP.

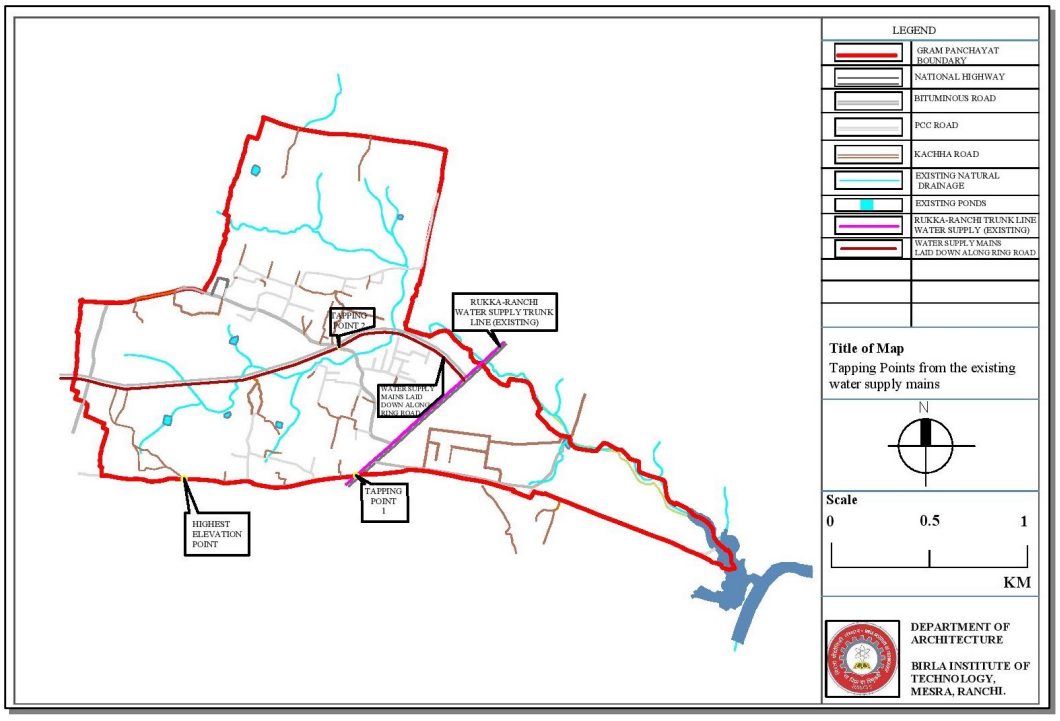



**Fig. 6.5: Map showing the tapping points for storage of water**

*Source: based on survey; prepared by the BIT Mesra Team*

| Table 6.2: Water demand projections upto 2030 | | | | |
|---|---|---|---|---|
| **Year** | **Population** | **Per capita water supply** | **Water demand in MLD** | **Water generation including 15% of NRW, in MLD** |
| 2021 | 9,949 | 90 | 0.63 | 0.73 |
| 2026 | 11,051 | 135 | 1.22 | 1.40 |
| 2030 | 12,930 | 135 | 1.62 | 1.87 |

*Source: Projections based on Calculations*

### 6.2.6.2 Water demand projections

Based on the population projections and assuming a water demand of 135 liter per capita per day including 15% of Non-Revenue Water (NRW), gross demand for water supply till the year 2030 would be 1.87 MLD. From 2020 to 2030 water demand after every five year has been given in Table 6.2.

### 6.2.6.3 Storage Demand Assessment

Based on the water demand as estimated above the capacity requirement of water storage reservoirs/ Overhead tanks (OHT) are assessed in the Table 6.3.

**Table 6.3: Storage Demand Assessment**

| Year | Total water demand (MLD) | Existing storage (MLD) | Storage Demand (MLD) |
|---|---|---|---|
| 2021 | 0.73 | NIL | 0.73 |
| 2026 | 1.40 | NIL | 1.40 |
| 2030 | 1.87 | NIL | 1.87 |

*Source: Based on Analysis and Calculations*

Storage reservoirs store the treated water for supplying water during emergencies such as fire, breakdown and repairs etc. and also to help in absorbing the hourly fluctuations during the normal water demand.

OHT are the rectangular, circular or elliptical overhead tanks erected at a certain suitable elevation above the ground level and supported on towers. They are constructed where the pressure requirements necessitate considerable elevation above the ground surface. They are constructed in areas where the combined gravity and

pumping system for water distribution is adopted. Water is pumped into these elevated tanks from the surface reservoirs and then supplied to the households through distribution networks.

### 6.2.7 IDENTIFICATION OF A SUITABLE DISTRIBUTION NETWORK FOR PIPED WATER SUPPLY SYSTEM IN NEORI GP

Keeping in view of the water demand and topography of Neori GP, out of the available various types of water distribution network, Grid Pattern with Loop is found to be most suitable water distribution system. Since water in the supply system is free to flow in more than one direction, stagnation does not occur as readily as in the branching pattern. In case of repair or break down in a pipe, the area connected to that pipe will continue to receive water, as water will flow to that area from the other side. Water reaches all points with minimum head loss. At the time of fires, by manipulating the cut-off valves, plenty of water supplies may be diverted and concentrated for fire-fighting.

#### 6.2.7.1 Grid Pattern with Loops

Since water in the supply system is free to flow in more than one direction, stagnation does not occur as readily as in the branching pattern. In case of repair or break down in a pipe, the area connected to that pipe will continue to· receive water, as water will flow to that area from the other side. Water reaches all points with minimum head loss. At the time of fires, by manipulating the cut-off valves, plenty of water supply may be diverted and concentrated for fire-fighting. Loops may be provided in a grid pattern to improve water pressure in portions of the GP (business and commercial areas). Loops should be strategically located so that the GP develops the water pressure should be sustained.

### 6.2.8 WATER SUPPLY – PROPOSALS

All the pumping system, feeder main and distribution systems are proposed for the ultimate requirement. However, the pump sets will be installed for the intermediate capacity which will be replaced by suitable pump set at the end of intermediate stage to take care of the ultimate requirement.

There are two tapping points as described earlier in the source of water supply section. One tapping point is near Vikas Chowk. The water tapped from this point will

be stored near the Neori Pachayat Bhavan by providing an underground service reservoir (USR) and will be lifted through pumps to the over head tank (OHT). The second USR and OHT are proposed in the Kendua Toli along the southern boundary of the GP, which is also very near to the highest elevation point of the GP. The third USR and OHT are provided in Mahli Tola area, which is also one of the highest elevation points in the GP, in the northern area of the GP beyond the Ring Road. While deciding the location of USR and OHT, the water demand, the population density and the topographical profile has been kept in mind. All the three OHTs are such located that gravity flow will facilitate the distribution for almost the entire Neori GP.

For distribution of the water from the OHT, the entire Neori GP is provided with peripheral water supply mains and is the main loop of distribution system. It is almost bisected by the supply line provided along the Ring Road. Three supply feeder supply network connects these two main lines and covers the entire households of NeoriGP.Various loops are formed through the supply feeders and supply mains. This enables the distribution system to maintain the optimum water pressure through the entire network as the water reaches a certain section through various routes of grids and the loops.

The detail of proposed water supply and distribution arrangements within the Neori GP is outlined in Fig 6.6.

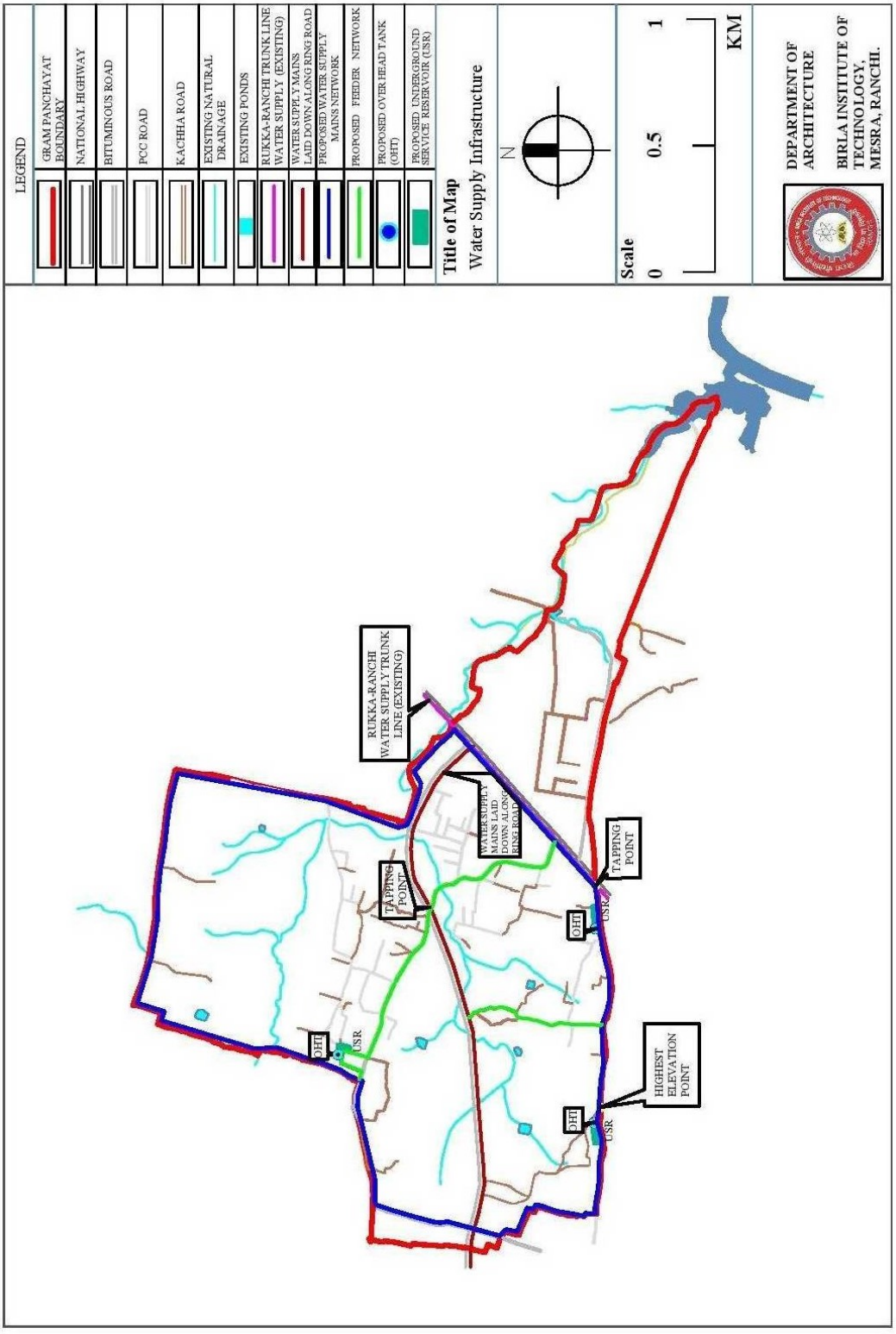



**Fig. 6.6: Map showing proposals for water supply infrastructures in Neori GP**

*Source: prepared by the BIT Mesra Team*

### 6.2.9 PHASING

To achieve the targets and translate the vision into reality, certain goals have been marked as per water supply service level benchmarks. These goals are bifurcated within 10 years of time frame in three phases, i.e. short term goals till three year, medium term till five years and long term till ten years and are as per Table 6.4.

**Table 6.4: Phasing for proposed water supply system**

| Parameters | Unit | Benchmarks | Baseline | Short term 1 year (2021-2022) | Medium term 3 years (2022-2025) | Long term 6 years & beyond (2025-2031) |
|---|---|---|---|---|---|---|
| Coverage of water supply | % | 100 | 5% | √ | | |
| Per capita supply of water | LPCD | 135 | 50 | √ | | |
| Extent of metering of water connection | % | 100 | 0 | | | √ |
| Extent of non-revenue water | % | 20 | 15 | | √ | |
| Continuity of water supply | Hrs. | 24 | 2 | | √ | |
| Quality of water supplied | % | 100 | NA | | √ | |
| Efficiency in redressal of customer complaints | % | 80 | NA | | √ | √ |
| Cost recovery in water supply services | % | 100 | NA | | | √ |
| Efficiency in collection of water related charges | % | 90 | 0 | | | √ |

*Source: SLB report by MoUD, Govt. of Jharkhand*

## 6.3 SEWARAGE SYSTEM

### 6.3.1 EXISTING STATUS

Neori GP does not have proper sewerage facility. In absence of organized sanitation facilities/ sewerage system in the Neori GP, a major portion of waste water generated from the households, institutional and commercial area (both black and grey water) normally finds their way either directly to the roads whether kutcha or pucca without any drainage system or open fields that finally ends at lower fallow fields

Current drainage system comprises of open/ covered drains (*pucca* drain, *kuchcha* drain) constructed in an unplanned manner in different parts of Neori GP, mainly built on as and when required, and on fund availability basis. As per census of India 2011, approximately 7.8% of the GP is covered by drainage system, out of which 90.2% is closed drain. 92.2% of the GP area has no drainage system. The brief status of the drainage system in Neori GP is provided in Table 6.5.

**Table 6.5: Present category wise drainage connections**

| Sl. No. | Category of Drain | % of HHs connected |
|---|---|---|
| 1 | Closed drainage | 7.2 |
| 2 | Open drainage | 0.6 |
| 3 | No drainage | 92.2 |
| | **Total** | **100%** |

*Source: Primary survey*

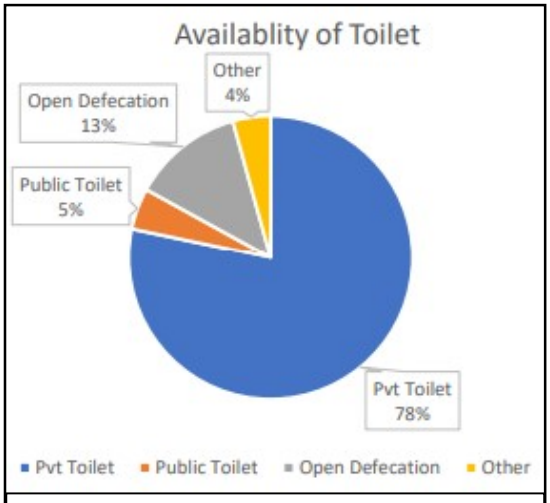



**Fig. 6.7: Availability of toilets in Neori GP**

*Source: Mobile App survey data collection and*

Neori GP does not have proper sewerage facility. In absence of organized sanitation facilities/ sewerage system in the Neori GP, a major portion of waste water generated from the households, institutional and commercial area (both black and grey water) normally finds their way either directly to the roads whether kutcha or pucca without any drainage system or open fields that finally ends at lower fallow fields

As per the primary survey conducted (refer Fig. 6.7), households having the private toilets are 78%. Public toilet availability is for only 5% households.13% of households' still practice open defecation. Households having pit latrines without septic tank /soak pit facility discharge the effluent directly within their own individual plots, nearby open plots or in few cases on the roads.

**Fig. 6.8: Toilets built under Swachh Bharat Mission** *Source: Author*

Fig. 6.8 shows couple of the toilets built under Swachh Bharat Mission. As per the primary survey conducted, households having the toilets built under Swachh Bharat Mission are around 30%. Besides that many households having privately built toilets with septic tanks is around 50%. Rest of the households either practice open defecation or has pit latrines without septic tank /soak pit facility discharging the effluent directly within their own individual plots or open plots.

Most of the septic tanks do not have soak pits, while few soak pits are found in dilapidated condition with broken top slabs and pipes. As a result, effluents from the septic tanks generally overflow and discharge within the plot or open lands.

Major drains flowing through the Neori GP carrying storm water and waste water with their disposal points are given in the Table 6.6.

**Table 6.6: Major drains and their discharge points**

| Coverage | Sewage disposal system |
|---|---|
| The entire Neori GP | Due to poor drainage system most of the houses carrying waste water have no option left other than to have the outlets in vacant land or ponds. In all these wards water gets discharged either inside the own plot, or outside the plot into the roads, or low lands. Many of these low lands are agricultural fields. |

### 6.3.2 WASTE WATER GENERATION

There is no accurate estimate of per capita water consumption available with DW&SD Government of Jharkhand. However, based on discussion with DW&SD officials, it was assessed that approximately 50 lpcd of water is being consumed by the residents both from government and private sources. Waste water generation for the Neori GP is calculated considering 80% of the water consumed (i.e. 40 lpcd), comprising of 30% black water (12 lpcd) and 70% grey water (28 lpcd). Data from secondary sources indicate that waste water generation from pour flush toilet is approximately 10 -25 lpcd per day, which was further confirmed by the residents during field visit that 10 -15 lpcd of water is used for flushing toilet facilities. An estimate of the total waste water being generated for the town is presented in Table 6.7.

**Table 6.7: Domestic waste water generation in Neori GP**

| Year | Total Population | Total Water Supplied @ 50 lpcd[1] (m3) | Total Waste Water generated @ 40 lpcd[2] (m3) | Total Black Water transferred to the Septic Tanks @12 lpcd [2] (m3) | Total grey water generated @ 28 lpcd ( m3) |
|---|---|---|---|---|---|
| 2021 | 9449 | 473 | 378 | 113 | 265 |
| 2026 | 11051 | 995[3] | 796 | 239 | 557 |
| 2030 | 12930 | 1746[4] | 1397 | 419 | 978 |

*Source: Calculation as per population projection*

**Note:**

As per population projection

1. Waste water assumption - 80% of water supplied (@50 lpcd)
2. black water 30% of total waste water and grey water 70% of total waste water supply
3. water supply rate is assumed to be 90 lpcd in the year 2026 assuming water supply system will be functional by then
4. Water supply rate is assumed to be 135 lpcd in the year 2031 for achieving the 100% SLB.

### 6.3.3 SEPTAGE MANAGEMENT

Neori GP has no suction machine for maintenance of the septic tanks as there is no system of septage management in the entire GP.

### 6.3.4 SERVICE LEVEL BENCHMARKS

Service level benchmarks for sewerage status for Neori GP is provided in Table 6.8. Although the town does not have the integrated sewerage system, the service level benchmarks have been provided to indicate the level of service expected in the long term.

**Table 6.8: Sewerage and sanitation service level benchmarks in Neori GP**

| Sl. No. | Sewerage and Sanitation | Benchmarks | Neori GP Status |
|---|---|---|---|
| 1 | Coverage of toilets | 100% | 80%* |
| 2 | Coverage of sewage network services | 100% | 0% |
| 3 | Collection efficiency of the sewage network | 100% | 0% |
| 4 | Adequacy of sewage treatment capacity | 100% | 0% |
| 5 | Quality of sewage treatment | 100% | 0% |
| 6 | Extent of reuse and recycling of sewage | 20% | 0% |
| 7 | Complaint Redressal | 80% | 0% |
| 8 | Extent cost recovery in sewage management | 100% | 0% |
| 9 | Efficiency in collection of sewage related charges | 90% | 0% |

Note: * Includes toilets constructed under SMM as well as the privately constructed by the house owners

*Source: SLB report by MoUD, Govt. of Jharkhand*

### 6.3.5 ONGOING SCHEMES AND PROPOSED INITIATIVES

Currently, there is no scheme or work for development of sewerage system at Neori GP. However, Neori GP is now going to implement schemes according to SBM guidelines. Since the entire GP does not have proper sewerage facility, it has to take exclusive plan and initiative accordingly to tackle the existing sanitation problems that the GP is facing.

### 6.3.6 KEY ISSUES

- **Absence of sewerage system**: Though there are septic tanks constructed with

individual households and public toilets, there is absence of sewerage network in Neori GP resulting into discharge of waste water in open drains leading to unhygienic conditions in the town.

- **Degradation of natural water bodies**: Flowing untreated waste water into natural drains and finally to the open fields, which are both agricultural and fallow, lead to degradation of quality of water bodies and soil thus causing damage to the overall eco system. There is threat to human health and environment due to degradation of water quality.
- **Choked drains**: Most of the drains are choked with dumped solid waste / plastic waste and causing localized water logging (mixed with waste water) and flooding like situation during the monsoon in many of the residential areas.
- **No reuse and recycling of waste water**: At present there is no reuse and recycling of waste water in Neori GP.

### 6.3.7 IDENTIFICATION OF A SUITABLE SEWERAGE SYSTEM FOR NEORI GP

Neori GP has a very low level of non conduited water supply (approximately 50 lpcd) and high dependence on ground water. Waste water generation is low, approximately of 40 lpcd. Hence, cconventional off site underground sewerage system for waste water management cannot be proposed for the Neori GP as of now; and decentralized wastewater treatment system (DEWATS) seems to be the best options for Neori GP in current situation. The shift from onsite to offsite will be decided based on the factors such as and when water supply @ 135 lpcd will be made available for the entire Neori GP. In addition, other factors like availability of uninterrupted electricity, peoples' acceptability of sewerage system particularly connecting to sewer as well as high capital and operation cost and necessary institutional needs etc. will decide on the time frame for shifting from on site to an integrated sewerage system.

Currently, the electric power supply is unstable in Neori GP, which is crucial for operation and maintenance of sewerage system. Integrated sewerage system usually involves laying of sewers at considerable depth, construction of manholes, installation of intermediate / main pumping stations and sewage treatment plant. These require stable electric power and in case of shortage of electricity, standby arrangements in the form of DG sets have to be provided, which further increases the operation and maintenance cost. Also, narrow roads and unplanned development might affect the efficiency of laying the sewer network.

In Neori GP, the BPL population and slum population may not afford high cost of maintenance of conventional sewerage system. In addition, the majority of population having already constructed septic tank may take longer time for connection of toilets to the sewerage system. Therefore, utmost care should be taken in the decision making process to avoid any wasteful investment in the sector.

It is, therefore, necessary to consider cost effective sewerage system in the Neori GP, which is affordable and sustainable. Following Table 6.9 provides the suitability of the various types of sewerage system between conventional and low cost sewerage system:

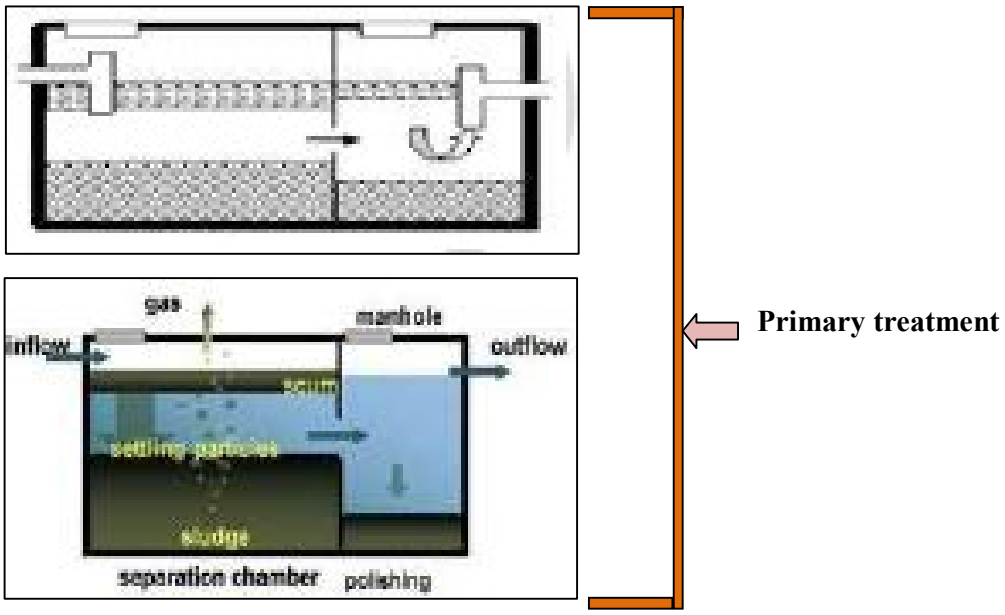
**Table 6.9: Options for waste water conveyance system**

| Types of system | Description |
|---|---|
| 1. Conventional sewerage system | Conventional sewerage system is a centralized waste water treatment system consisting of closed system of pipes, manholes and pumping station. The underground sewer network conveys black and grey water from individual households to centralized treatment facility. The main line or primary line runs through the center of the system and all the other lines empty into it. |
| 2.Low cost sewerage system | |
| 2.1 Shallow Sewers | Shallow sewers are conventional sewers constructed to relaxed standards which are made possible by low traffic loads and short connection lengths allow the use of inspection chambers rather than manholes. Since these are not designed for entry of persons, they can be much smaller and cheaper than manholes, thus considerably reducing the cost of sewerage |
| 2.2 Decentralized wastewater treatment system (DEWATS) with Small-bore sewerage | All waste water is diverted to an on-plot septic tank. Households constructing new individual sanitation facilities should be encouraged to construct septic tanks. Some households could use pit latrines. Only black water may be connected to sewers. Septage is removed for further treatment and final disposal. Small diameter sewer pipe (100- 200 mm) is laid at a flatter gradient to carry the effluent from inceptor tanks which are similar to septic tanks. |
| 2.3 Combined system | The combination includes both on-site sanitation arrangements and off-site sanitation systems. |

*Source: Author*

Development of sewerage network would take a longer time frame and would depend on external factors such as availability of funds for implementation of cost intensive sewerage and wastewater treatment systems, the objective of this project component is to address the immediate need of treating the wastewater (black water) that are discharged into the surface drains and to minimize pollution on the surface water bodies, in the interim period. Decentralized waste water treatment system **(**DEWATS) system is cost effective, both in terms of capital investment and maintenance needs. The functioning of DEWATS is explained in Fig. 6.9. The system should also be capable of taking variable loads considering the proposed development of wastewater infrastructure within the Neori GP that over the time will reduce the wastewater load into the drains. These DEWATS would be established in various locations of Neori GP and one module would treat waste water for approximately 400 HHs. Septic tanks would be set up in the low lying area but above the flood level so that gravity flow can be maintained. Not only in the existing housing area but for the housing to be developed in future too could have this system of waste water treatment. Locally treated water can be further utilized for other purposes such as gardening, road cleaning and washing.

### 6.3.8 FUNCTIONING OF DEWATS SYSTEM



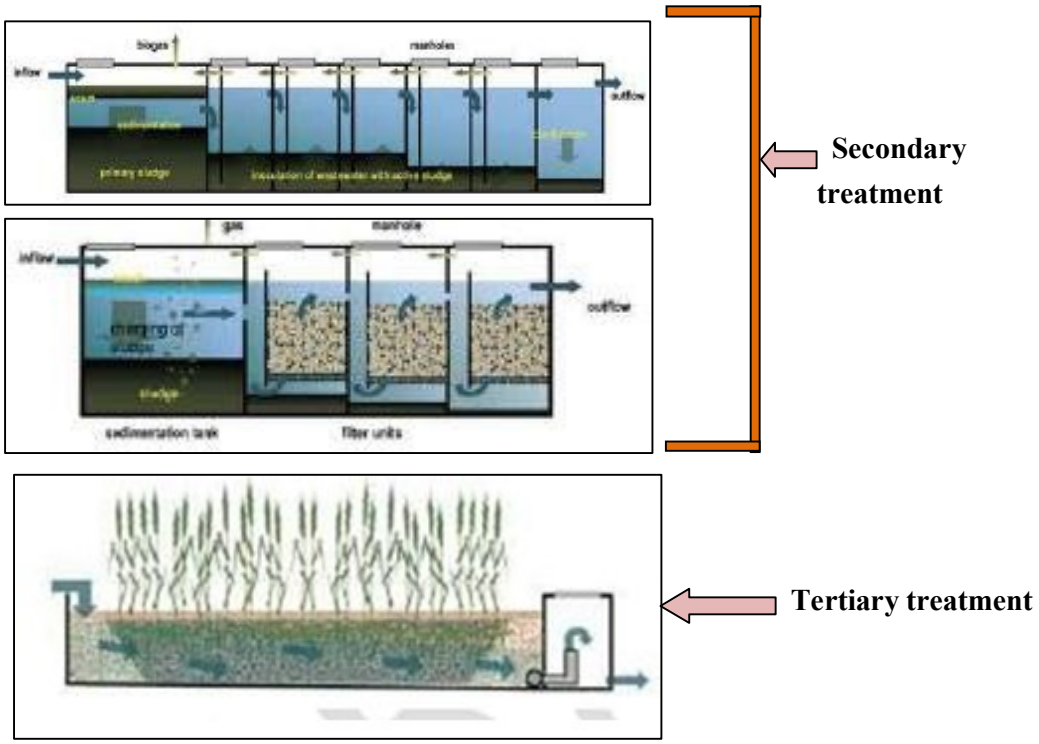



**Fig. 6.9: Functioning of DEWATS system**

*Source: Guidelines on Solid and Liquid Waste Management (SLWM) in Rural Areas, Ministry of Drinking Water and Sanitation 2014*

### 6.3.9 WASTE WATER CONVEYANCE BY SMALL BORE SEWER SYSTEM

For grey water, surface drain is the cheapest option for collecting such waste water. For black water, mixed with grey water, small bore sewer is the appropriate and sustainable options for collecting waste water in rural areas. Small bore sewer systems are designed to receive only the liquid portion of household wastewater for off-site treatment and disposal. Grit, grease and floating materials are separated from the waste flow in interceptor tanks similar to septic tanks. Such interceptor tanks are installed for a group of household. Depending upon the size of interceptor tanks and inflow of waste water, settled solids should be removed periodically from the interceptor tanks. The functioning of the small bore sewer system is shown in Fig. 6.10.

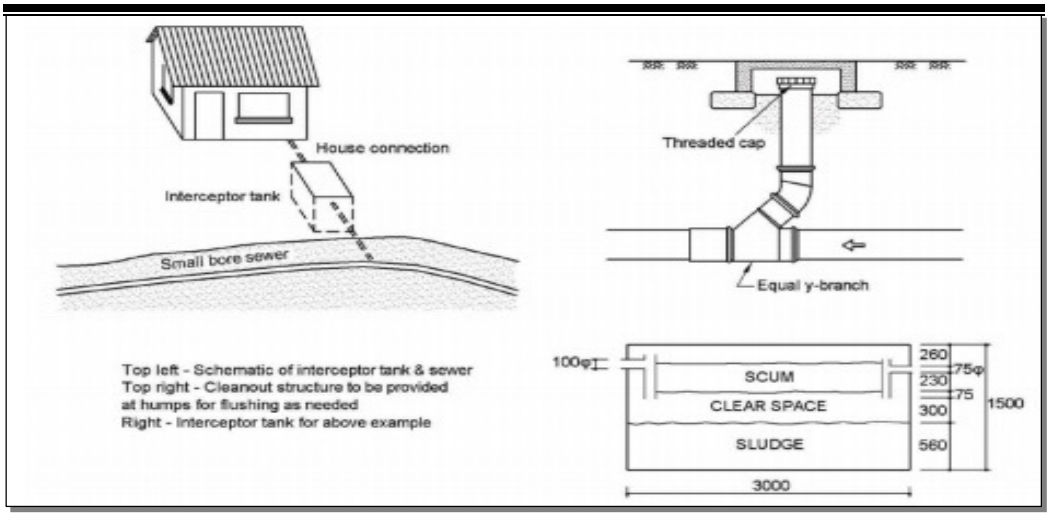



**Fig. 6.10: A schematic diagram of Small bore sewer system**

*Source: Manual on Sewerage and Sewage Treatment Systems – 2013, Ministry of Drinking Water and Sanitation, chapter 8*

### 6.3.10 COMPONENTS OF A SMALL BORE SEWER SYSTEMS

- House connection: The house connection is made at the inlet to the interceptor tank.
- Interceptor tank: It is designed to detain the liquid flow for 12 to 24 hours and to remove both floating and settleable solids from the liquid stream. Volume is also provided for storage of the solids, which are periodically removed through an access port. The design of interceptor tank is similar to conventional septic tanks
- Sewer: Sewers are small bore pipe (minimum diameter of 100 mm) which is trenched into the ground at a depth sufficient to collect the settled wastewater from most connections by gravity. Unlike conventional sewers, small bore sewers are not necessarily laid on a uniform gradient with straight alignment between manholes or cleanouts.
- Cleanout Manhole: Cleanouts and manholes provide access to the sewers for inspection and maintenance. Also, they can be easily concealed to prevent tampering. They function as flushing points during sewer cleaning operations.

#### 6.3.10.1 The Small Bore System has the following advantages

- Reduced water requirements. It is suitable where per capita waste water generation is very low. It is more suited in rural areas where per capita water supply is low, making conventional sewer system technically unfeasible.

- Reduced excavation costs. With the troublesome solids removed, the sewers can be designed with minimum depth, required to maintain self-cleansing velocity when the slope is kept minimum, excavation costs are minimized.
- Reduced materials costs. Peak flows, for which the small bore sewers must be designed to handle, are lower than those experienced with conventional sewers because the interceptor tanks provide some surge storage. Expensive manholes are not required in case of small bore system.
- Reduced treatment requirements. Interceptor tanks arrest floating materials, oil and grease and most of the settleable solids from wastewater. Therefore, it reduces cost of the treatment, as it requires lesser hydraulic retention time for treatment of such waste water.

Thus, small bore sewer systems provide an economical way to upgrade existing sanitation facilities to a level of service comparable to conventional sewers. Because of the lower costs of construction and maintenance and the ability to function with little water, small bore sewers can be used where supply of water is low and consequently low volume of waste water is generated per household.

### 6.3.11 WASTE WATER GENERATION PROJECTION

Based on the population projections and projecting water demand of 135 lpcd day (2026 onwards), net demand for water supply till the year 2031 would be 17.46 MLD. Current water demand is based on existing per capita supply of 50 lpcd. It has been assumed that by year 2026, water supply infrastructure work will be completed and per capita supply will increase to 135 lpcd.

As per CPHEEO manual on Sewerage and Sewage Treatment, waste water generation is 80% of water supply, hence total waste water generation till the year 2031 would be about 13.97 MLD, considering 15% ground water infiltration as the water table is very low in the GP. Table 6.10 provides the projected waste water generation details from 2020 to 2031. Projected septage generation is described in Table 6.11.

**Table 6.10: Waste water generation projection in Neori GP**

| Year | Population | Net water demand at consumer end (MLD) | Waste water generation including 15% ground water infiltration |
|---|---|---|---|
| 2021 | 9449 | 4.73[1] | 4.35 MLD |
| 2026 | 11051 | 9.95[2] | 9.15 MLD |
| 2030 | 12930 | 17.46[3] | 13.97 MLD |

*Source: Projections based on CPHEEO Manual and Population Projections*

**Note:** 1 Assumption being 50 lpcd, as there is no piped water supply for 2021

2 Assumption being 90 lpcd, considering that piped water supply will be augmented by 2026 and onwards

3 Assumption being 135 lpcd, considering that piped water supply will be augmented by 2031 and onwards

**Table 6.11: Projected septage generation in Neori GP**

| Particular | Unit | 2021 | 2026 | 2031 |
|---|---|---|---|---|
| Population | No. | 9449 | 11,051 | 12,930 |
| No of households | No. | 1817 | 2125 | 2487 |
| Households having septic tank | No. | 493 | 1162 | 1990 |
| Nunber of septic tank to be cleared every year – 50% of the total | No. | 247 | 581 | 995 |
| Septage generation @ 2.5 m3 per septic tank | m3 | 618 | 1453 | 2488 |
| No of cleaning vehicles required | No. | 2 | 4 | 8 |
| Existing number of vehicle | | 0 | 0 | 0 |
| Actual number of vehicle required | No. | 2 | 4 | 8 |

*Source: Calculation based on population projection*

Following assumptions were made for above calculation

- Average volume of septage produced by emptying one septic tank – 2.5 $m^3$.
- Septic tank is cleaned once in two years. On an average 50% of the septic tank gets cleaned in a year.
- Each vacuum de-sludging vehicle will clear 4 septic tanks in a day
- After 2026, with the development of Decentralized sewerage system the septage generation will get reduced.

### 6.3.12 Proposals And Recommendation For Sewerage System In Neori GP

While identifying the treatment area for DEWATS, the slope profile plays very important role, as the natural gravity flow facilitates to develop an economical and sustainable waste water management system. The location of the treatment area should be such as that it is not going to pollute the surface water or the ground water table by any means and hence it should not be located to any nearby water body, water stream or river. Based on the topographical and hydrogeological details which include soil type, ground water table and general topography of Neori GP, and

available open spaces, the small bore DEWATS is proposed with the following salient points:

- The sewerage network is designed for the Ultimate requirement.
- The small bore sewer system will be provided with small bore of 100mm u-PVC pipes for the conveyance of the black water.
- The collected black water will be transferred to cluster inception tanks for further treatment. The effluent from the inception tanks would be forwarded further for the tertiary treatment by biological process (planted bed filters).
- The treated sludge would be reused as manure and the treated water will be reused for agricultural purposes.

### 6.3.13 Recycling Of Treated Waste Water For Non-Portable Applications

Recycling of wastewater is essentially, reusing treated waste water for beneficial purposes such as agricultural and landscape irrigation, toilet flushing and replenishing a ground water basin. Recycling and reusing are both aimed at conservation and reduction of wastage. Action plan for recycling and reuse of waste water should be developed along with the development of sewerage system and sewage treatment plant. Reuse is especially critical for Neori GP since water supply is relatively low and high cost of getting piped water supply for the Neori GP.

Waste water can be recycled to agricultural farms, commercial and institutional establishments. This will entail a direct saving to the consumer of water and a direct saving for the Neori GP which continuously struggles to find or locate new sources of water to meet the growing demands of the population.

### 6.3.14 Proper Operation and Maintenance of Sanitation Infrastructure

Sewerage System need to be maintained as per the guidelines provided in CPHEEO Manual on Sewerage and Sewage treatment. Both preventive and the emergency maintenance should be done regularly for the proposed sewerage system. The waste water management system proposal is outlined in Fig. 6.11.

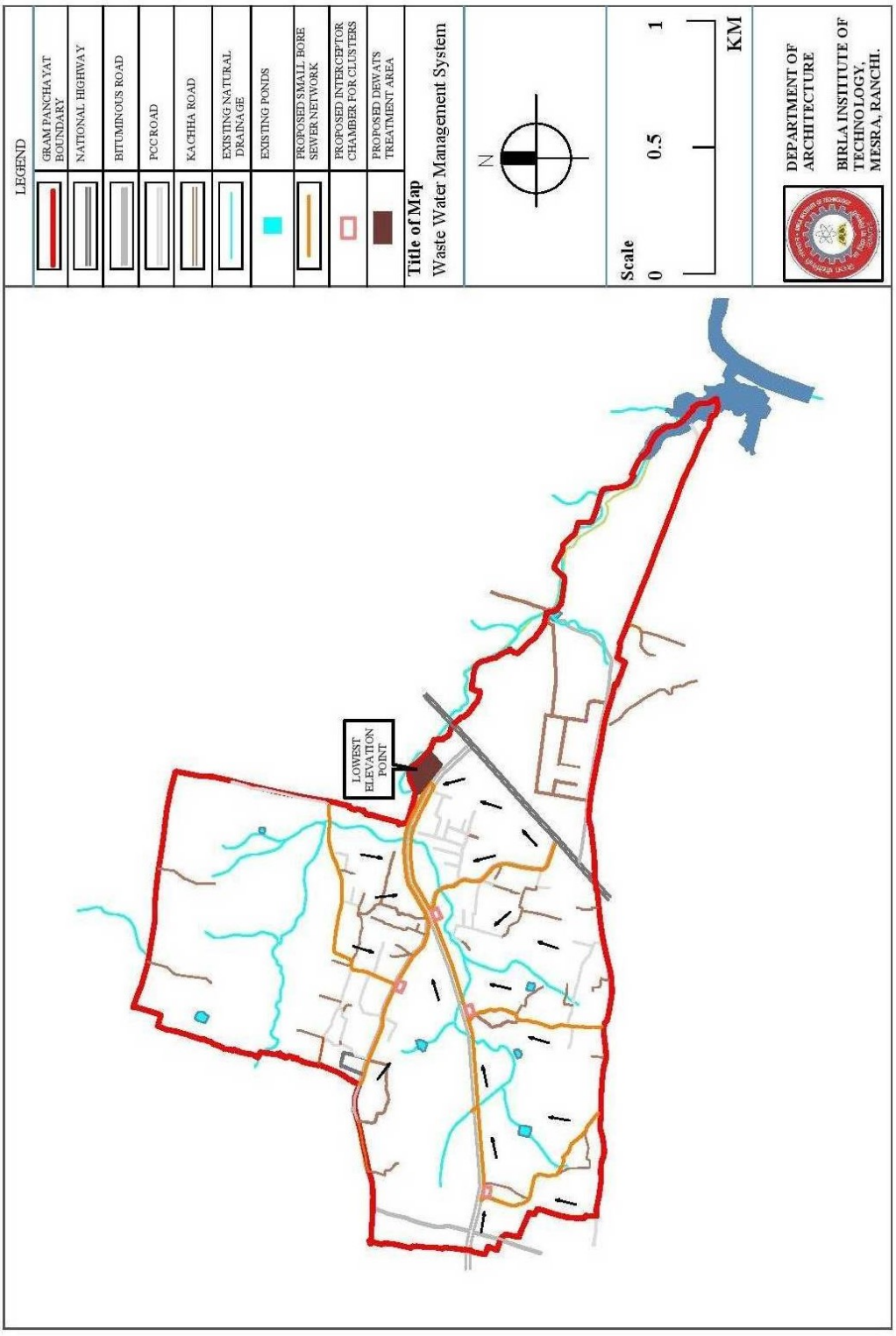



**Fig. 6.11: Map showing the proposals for the waste water management system for Neori GP** *(Source: prepared by the BIT Mesra Team)*

### 6.3.14 PHASING FOR WASTE WATER MANAGEMENT SYSTEM

The main goal is to develop suitable waste water collection and treatment system for Neori GP. In the long term, all the waste water generated in the Neori GP shall be collected and conveyed through sewer network to treatment plants, treated to acceptable quality levels and disposed, recycled or reused.

It has been proposed a three-phase approach to implement the plan in this report, namely immediate / short-term, medium-term and long-term benefits to upgrade the waste water management system for the town. Each term would be spread over a certain period of years to complete the targeted tasks. Under this, it has been adopted that financial approval of the scheme would probably be completed by the year 2021 and tenders for implementation of works would be floated.. This has been referred to as "immediate phase" having a projected time period of 1year when the project works are expected to be completed. The next phase of development over another 2 years from 2022 till 2024 is mentioned as "short-term," and the remaining works to be taken up over the remaining 7 years is referred as "medium-term (2 years) and long-term (more than 5 years).This phased approach aims to navigate through the challenges posed by the limitations in investments and funding, existing administrative framework, institutional capacities and community engagement in a proficient manner. The sewerage goals with respect to the service level benchmarks have been provided in Table 6.12.

**Table 6.12: Phasing for the waste water management system in Neori GP**

| Parameters | Unit | Benchmarks | Baseline | PHASING | | |
|---|---|---|---|---|---|---|
| | | | | Short term 1 years | Medium term 2 years | Long term 7 years |
| Coverage of toilets | % | 100% | 80% * | √ | | |
| Coverage of sewage network services | % | 100% | 0% | | √ | √ |
| Collection efficiency of the sewage network | % | 100% | 0% | | √ | √ |
| Adequacy of sewage treatment capacity | % | 100% | 0% | | √ | √ |
| Quality of sewage treatment | % | 100% | 0% | | √ | √ |

| | | | | | | |
|---|---|---|---|---|---|---|
| Extent of reuse and recycling of sewage | % | 20% | 0% | | √ | √ |
| Complaint redresses | % | 80% | 0% | | √ | √ |
| Extent cost recovery in sewage management | % | 100% | 0% | | √ | √ |
| Efficiency in collection of sewage related charges | % | 90% | 0% | | √ | √ |

*Source: SLB report by MoUD, Govt. of Jharkhand*

Note: * Includes toilets constructed under SMM as well as the privately constructed by the house owners

## 6.4 STORM WATER DRAINAGE SYSTEM

### 6.4.1 EXISTING SCENARIO

In Neori GP, currently there is no storm water drainage system except for the southern and western boundaries. The drainage system on the western boundary of Neori GP is developed by NHAI along the NH no.33. The drains on the southern boundary are constructed under the scheme of Mukhya Mantri Gramin Sadak Yojna. Except for these two stretches there is absolute absence of drainage system in the entire GP. Fig. 6.12 shows the existing condition of drainage in Neori GP and Table 6.13 shows Drains and outfall points in Neori GP.

Absence of drainage in almost entire Neori GP

Covered Pucca Drains

No drainage along the PCC Roads the southern and western boundary

**Fig. 6.12: Existing condition of drainage in Neori GP**

*Source: Author*

**Table 6.13: Drains and outfall points in Neori GP**

| Coverage | Drainage system |
|---|---|
| Along southern and western boundary of Neori GP | Only this section is provided with covered pucca drains |
| Rest part of Neori GP | Drainage system is almost absent. Only few parts have open kuccha drains. Outlets in vacant land, agricultural land or ponds. |

### 6.4.2 Drains and the Slope Profile in Neori GP

The topography and the slope profile of the Neori GP is suitable for development of an efficient drainage network, The northern and the southern edges are with the highest elevation and a valley is formed along the Ring Road. The entire GP can be provided with drainage network draining out the storm water following its topographical slopes. The slope profile suggests secondary and tertiary drains can be developed along the roads to cover the entire GP and finally these should be connected to the major storm water drainage along the Ring Road, The junction of Ring Road with the NH No. 33 is the lowest elevation point in the entire GP. Fig. 6.13 shows the existing drains with the slope profile of the Neori GP

Water logging is major issues in the GP, during the monsoon season low lying areas get inundated. Many of the vacant plots and pits also gets filled with water and become breeding grounds of the mosquitoes and flies. There is no water draining pump available with Neori GP to tackle the problem of water logging. As revealed from the discussions with the stakeholders including officials of the Neori GP, there are as many as 8 (eight) locations having problem of water logging in Neori GP and most of these are located beyond Ring Road on the northern zone of the GP. The area south to the Ring Road is a better situation due to the natural gradient of the site.

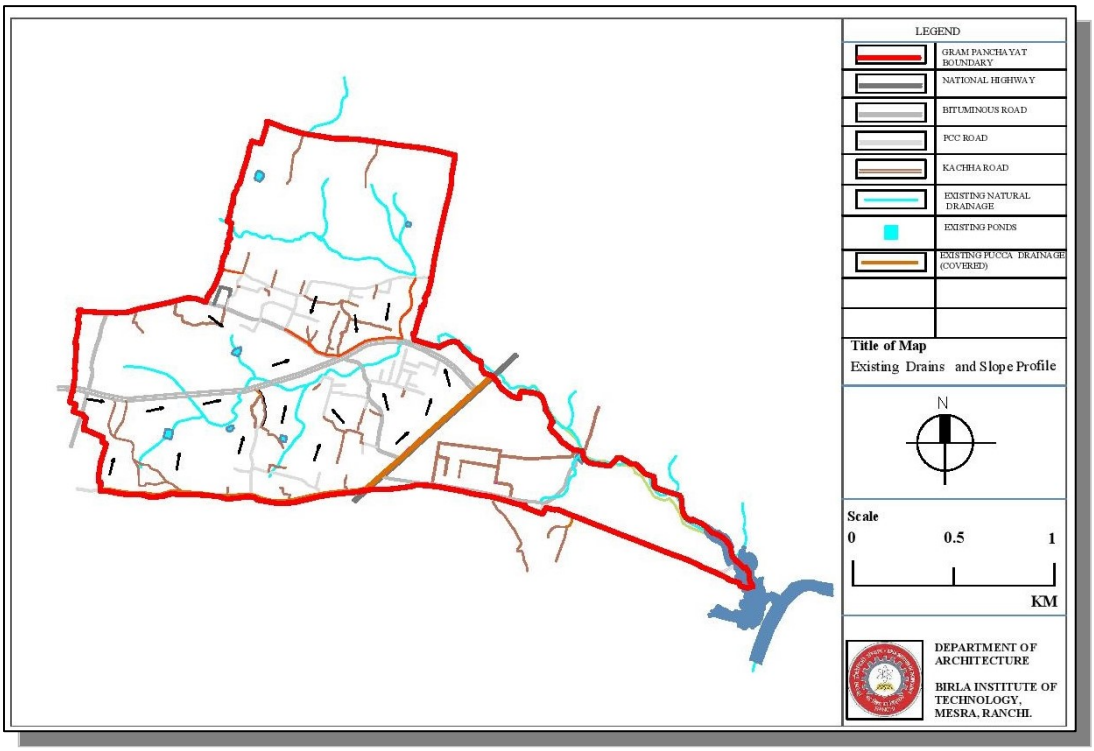



**Fig. 6.13: Map showing the existing drains and the slope profile of Neori GP**

*Source: based on household survey; prepared by the BIT Mesra Team*

### 6.4.3 SERVICE LEVEL BENCHMARKS

Service level benchmark and its status with respect to the GP is shown in Table 6.14**.**

**Table 6.14: SLB of drainage system in Neori GP**

| Sl. No. | Drainage System | Benchmark | Neori GP Status |
|---|---|---|---|
| 1 | Provisions of storm water drainage network | 100% | NA |
| 2 | Incidents of water logging/flooding | 0 | 8 |

*Source: Neori GP and discussions with GP Officials*

### 6.4.4 KEY ISSUES

- **Mixing of storm water and waste water**: There is mixing of waste water and storm water in the drain. Due to absence of proper sewerage system and public ignorance household waste water is finding way directly into the drains. Mixing of waste water and storm water drain is the major problem faced by the GP.
- **Degradation of natural water bodies**: Flow of waste water into nearby ponds leading to degradation of water quality.
- **Absence of proper storm water drainage network**: In the absence of storm water system the waste water finds its way on the roads resulting in serious water pollution in all the water bodies in the GP.
- **Choked drains:** Most of the drains are choked with solid waste / plastic waste and causing localized water logging situation in many of the residential areas.
- **Silting in drains:** Regular and proper cleaning of drains is not being done. Major drains are cleaned occasionally, only or if any complaint is lodged. Heavy silting of drains resulting into overflow of water and water logging in rainy season.

### 6.4.5 PROPOSALS

As per the natural drainage pattern and topography of Neori GP, the 8(eight) numbers of water logged areas of the GP have been proposed to be provided with a secondary storm water drainage system leading to the major drains to be constructed along the ring road.

The existing drainage system shall also be improved in the west and south side of the GP. As the junction of Ring Road with the NH No. 33 is the lowest elevation point in the entire GP the nallah flowing beside this is the outfall point for all the natural drains flowing in this GP. All the drainage system leading to nearby ponds shall be diverted in alignment with the major drains constructed along the ring road. The tentative alignments of the proposed major storm water drains and construction of other secondary and tertiary drains are indicated in the Fig. 6.14

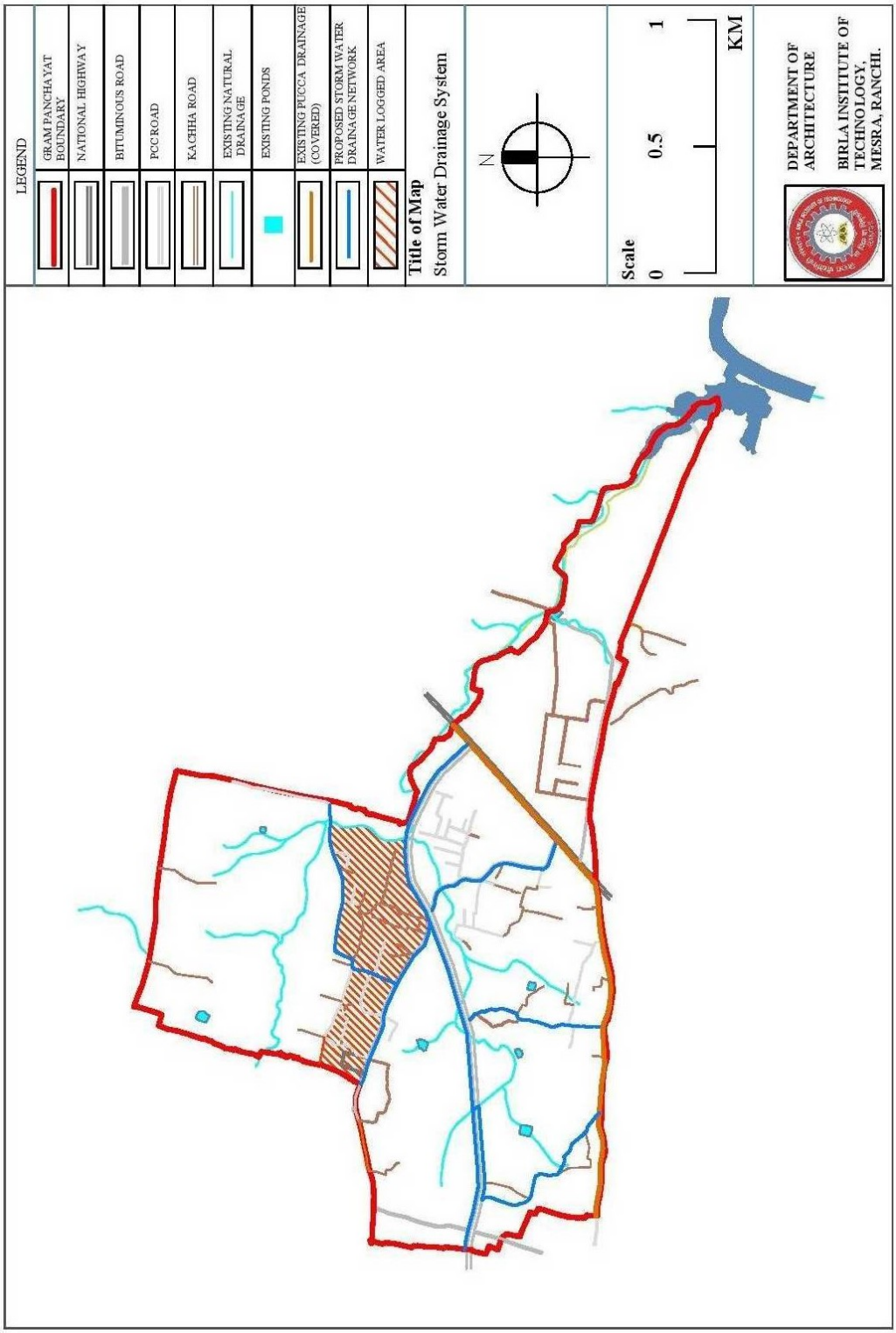



**Fig. 6.14: Drainage map for Neori GP showing existing and proposed drains**

*Source: based on household survey; prepared by the BIT Mesra Team*

### 6.4.6 OTHER RECOMMENDATIONS

1) **Strengthening of the Existing Storm Water Network for Neori GP:** Topography of the Neori GP makes drainage situation relatively better in the GP. The general slope of the GP is towards the ring road which almost bisects the GP. However, some of the natural drains are heavily silted and thus, are inadequate to accommodate and transport the storm water. Thus strengthening of storm water drainage channel is recommended. The strengthening is primarily comprise of following activities

- De-silting of existing drains to increase the carrying capacity. To make the drain cleaning system sustainable, there is a need to undertake periodical desilting operation, which can keep the drains clean and prevent all six numbers of existing ponds water from getting polluted.
- All the natural drains flowing through Neori GP need to flow freely for proper storm water discharge. All such drains will also be kept encroachment free with required de-silting / dredging from time to time.
- Appropriate plantation / beautification on the banks of the natural drains are required.

2) **Construction of New Storm Water Drainage system:** After review of the status and efficacy of the primary and secondary drainage in Neori GP., it is suggested to construct new storm water drains for almost the entire Neori GP.

3) **Integration of existing ponds and water bodies in the town in the storm water drainage network:** Some of the drains in the GP carries storm water and waste water to the ponds and pollute the water. These drains should be rerouted and either connected to other natural drains or should be connected to prevent flow of storm water into ponds.

4) **Source Control and Ground water recharge initiatives to be developed along with storm water drains:**

Urbanization and development of hard pavement and dedicated storm water drainage system leads to high surface runoff to bigger drains and finally to nearby Nallas / Rivers. Rain water harvesting for utilizing the primary source of water and preventing the run off from going to the storm water drains should be encouraged. Recharging of the ground water using appropriate technology should be done for Neori GP. Central Public Works Department. Government of India has developed a technical manual for rain water harvesting and conservation. Neori GP can refer to the manual for design

details of rain water harvesting structure (refer http://cpwd.gov.in/Publication/rain_wh.PDF).

Some of state governments has been proactive in development of legislations for rain water harvesting. Jharkhand state water policy also gives due consideration to rain water harvesting in planning water resources. However, the state of Jharkhand can look into the aspect of developing legislation for appropriate rain water harvesting in the state of Jharkhand, which shall be helpful to cater the problem of draught.

### 6.4.7 PHASING FOR THE DEVELOPMENT OF STORM WATER DRAINAGE SYSTEM

The development of storm water system should start with the short term goal with the conduct of the topographical survey to mark the levels which will help in identifying the alignment of the drains. The medium phase of three years should be for the development of secondary, tertiary and major drainage construction, followed by the long term last phase of the development of the primary drainage network along with individual house connections. Table 6.15 outlines the phasing for the development of the entire new storm water drainage system for the Neori GP.

**Table 6.15: Phasing for storm water drainage system in Neori GP**

| Sl No. | Short Description | Phasing for the proposed storm water drainage system in Neori GP | | |
|---|---|---|---|---|
| | | Short term | Medium term | Long term |
| | | 2021-2023 | 2023-2026 | 2026-2031 |
| 1 | Conduct Topographical Survey for the Neori GP area to recognize the current condition of the sites etc. | √ | | |
| 2 | Development of new pucca main storm water drainage networking along ring road and connection of various other sub-mains to the main | √ | √ | |
| 3 | Development of individual house drainage Network along with the connection to it | | | √ |

*Source: Author*

## 6.5 SOLID WASTE MANAGEMENT - INTRODUCTION

The domestic solid waste generation in the rural household of India is increased, and now it plays a significant role in the field of health management. The solid waste generated in the rural area is organic and biodegradable in nature. These solid wastes are not handled properly, and eventually, they create problems for the entire region.

### 6.5.1 EXISTING STATUS

**Table 6.16: Existing Solid Waste Management System in Neori Gram Panchayat**

| Waste Generation | Collection and Transportation | Disposal |
|---|---|---|
| **Total estimated Solid Waste Generated:**<br>✓ 2-3 tonnes per day (based on an estimate of 330g per person per day)<br><br>**Types of Solid Waste:**<br><br>✓ **Biodegradable:** Animal waste, vegetable waste<br>✓ **Non-Biodegradable:** Plastic bags, papers, glass<br><br>**Solid Waste Sources:**<br><br>✓ HH, Weekly markets, Schools/Anganwadis, shops etc. | Presently there is no system to collect and/or transport the daily generated solid waste.<br><br>Once in 2 to 3 months, waste is collected from the roads/drains and transported to an open area outside the village<br>This process is contracted out by the GP | **Current Disposal methods**<br><br>- **Vegetables & Food Waste:** Given to livestock, reused in field<br><br>- **Plastics:** Thrown outside in the open area, fields, drains or burnt |

*Source: Primary survey*

Table 6.16 described the Solid Waste Management in Neori GP. Currently there is no reliable waste system in Neori GP. Generated solid waste is managed by households only. Generally, they disposed of all waste material according to their suitability. There is no segregation method; most of them disposed it on barren land. Cow dung and vegetable waste directly dump on the paddy field and try to convert it in compost without using any proper method.

### 6.5.2 Forecasting Of Solid Waste Generation For Neori Area

The current waste generation of Neori is about 3 MTPD. Due to rapid growth and an increase in the population, waste generation will also be increased. The current waste generation rate of the GP is 0.338 kg/capita/day. The projected waste generation is shown in Table 6.17

**Table 6.17: Projected Waste Generation in Neori GP**

| Year | Population | Total Waste |
|---|---|---|
| 2021 | 9449 | 3.19 MTPD |
| 2026 | 11051 | 3.73MTPD |
| 2030 | 12930 | 4.37 MTPD |

*Source: Computed by author*

### 6.5.3 Types and Quantity of Waste

The types of waste generation vary as per:

- The geographical region of any particular area.
- The socio-economic condition of any area
- The seasonal variation which affects the types of food
- The packaging of food items.

In general, it is observed that in those areas where the supplies of packed edibles are less, they generate less volume of waste

### 6.5.4 Categories of Solid waste

Table 6.18 shows different types of waste generated in Neori GP.

**Table 6.18: Categories of Solid waste generated in Neori GP**

| | |
|---|---|
| Organic waste | Waste from the preparation of food, market places, etc. |
| Combustibles: | Paper, wood, dried leaves, packaging for relief items, etc. (high organic and low moisture content) |
| Non-combustibles: | Metal, tin cans, bottles, stones, etc. |
| Ashes/dust: | Residue from fires used for cooking |
| Bulky waste: | Tree branches, tires, etc. |
| Dead animals: | Carcasses of domestic animals and livestock |
| Hazardous waste: | Oil, battery acid, medical waste |
| Construction waste: | Roofing, rubble, broken concrete, etc. |
| *Source: author* | |

### 6.5.5 INTERVENTION LEVELS

Table 6.19 indicates general intervention strategies for the storage and disposal of solid waste in different scenarios. The same may be replicated for Neori GP.

**Table 6.19: Intervention strategies for storage and disposal**

| | | |
|---|---|---|
| Immediate Action | • Cleaning of scattered waste<br>• Burning and burial of waste on-site<br>• temporary community pits<br>• Repairing and upgrading of existing facilities | |
| Short term measure | • community pits<br>• family pits<br>• community bins | |
| Long term actions | | • community bins<br>• family pits<br>• community bins<br>• repairing or upgrading of existing facilities<br>• Recycling |

**Table 6.20: Actors in Rural Solid Waste Management System**

| Level | Organization |
|---|---|
| GP | Gram Sevak/Sachiv |
| | Panchayat Development Office |
| | Community-based organizations |
| | SHGs |
| | Private sector/entrepreneurs |
| | Households |

*Source: Ministry of Drinking Water and Sanitation and Asian Development Bank (2014) Guidelines on Solid and Liquid Waste Management (SLWM) in Rural Areas. Government of India.*

Different organisations mentioned in the Table 6.20 are involved in Neori GP for the Solid Waste Management purpose.

### 6.5.6 PROPOSED SOLID WASTE MANAGEMENT SYSTEM

The Solid Waste Management Model based on the sustainable hierarchy of waste management, in these entire system the major focus on Reduction to Recycling concepts. The entire process can be achieved by way of decentralization process of

solid waste management. The entire SWM operation may be worked on Public Private Partnership (PPP) mode involving professional agencies through Built-Operate –Transfer (BOT) platform. The private agencies may be asked to use innovative technologies and recycle agro-waste to produce manure for boosting agriculture. Such an operation may be designed to sub serve a cluster comprising of few Gram panchayats.

The entire process will comprise of:

**Segregation:** Separate bins needs to be installed for bio-degradable, non - biodegradable and domestic hazardous wastes and handover segregated wastes to authorized waste pickers.

**Storage:** Every household, shop and establishment generates solid waste on day to day basis. Generally no bins for separate storage of waste according to nature are kept at source. Very few people keep personal bins for storage of waste according to its nature.

**Collection and transportation:** Door to door and Community bin collection using the concept of Ghantagari once a day. Domestic waste is collected through house to house collection and all other type of waste i.e. institutional, commercial etc. have been collected through community bins. At primary level, wastes dumped by public in containers provided by GP will be collected through small vehicles by sanitary workers and transferred to secondary storage depots from where without segregation it will be sent through big vehicles to dumping grounds for final disposal.

**End treatment:**

**Incineration:** Incinerators is proposed to be installed through PPP mode to treat biomedical and other infectious forms of wastes.

**Landfill:** This treatment is proposed for non-biomedical and no-agro based waste.

**Preparation of Manures:** The agro based waste may be recycled to produce manure which may be sold at a nominal rate to the cultivators to boost cultivation.

The manure production may be conceived to be a part of the PPP model and the process of production and sell of manure is proposed to be conducted by the organization awarded with PPP for Ten years term period upto 2030. After 2030, as per principles of BOT project, the entire operational system will be handed over to Neori GP, which will further continue with the operation. The entire collection to disposal system will not be chargeable. However, it will be advised to the organization to employ maximum number of Neori GP residents for the entire

operation through proper training so as to increase the involvement of the locals. The proposed site for solid waste activity is shown in Fig. 6.15.

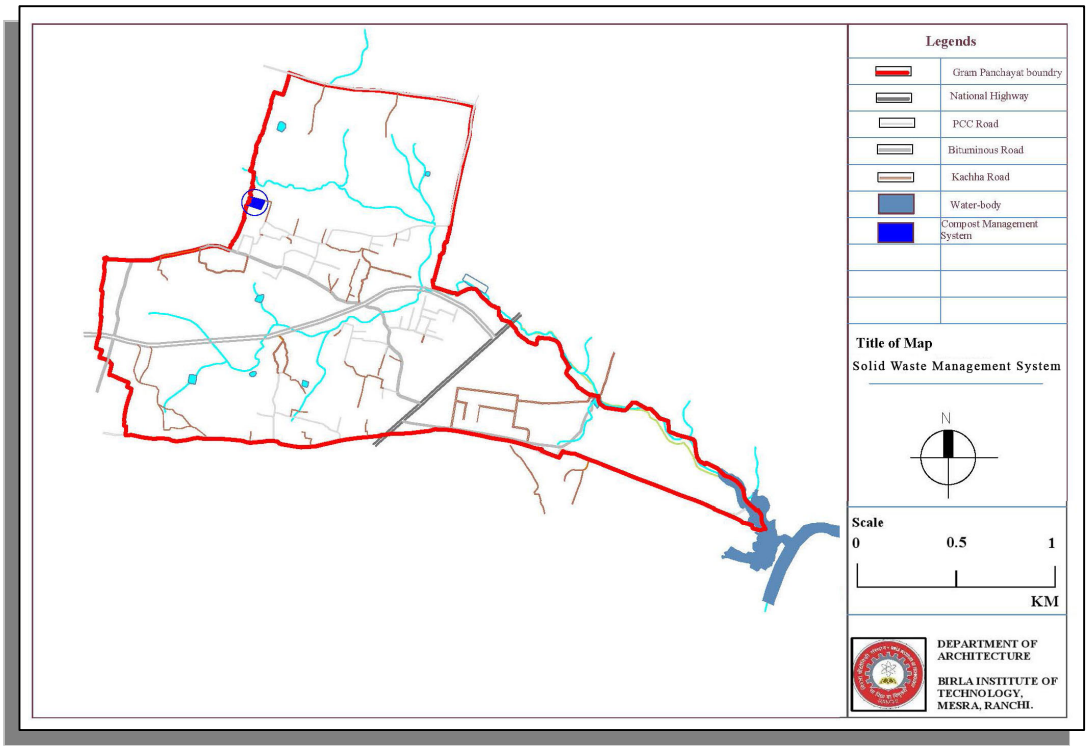



**Fig. 6.15: Proposed site for solid waste activity**

*Source: prepared by the BIT Mesra Team*

### 6.5.6.1 Physical Sustainability of Waste Management System

- A set of rules and regulations must be established with respect to the disposal of waste inside the village and every resident must be aware of them properly.
- The awareness program and information regarding waste must be supplied to them and every resident must be educated.
- A sound monitoring system must be established which will continuously monitor the entire process and also look after complaints of the residents of GP.
- Documents and reports of the entire process must be released from time to time so that people can be aware of the process.

### 6.5.7 Costing and Finances

The details of costing for the entire SWM operation are given in the table 6.21 below.

**Table 6.21: Details of cost for SWM operation**

| Sl .no. | Particular | Quantity | Unit price | Total Cost in Rs. |
|---|---|---|---|---|
| Solid Waste Management | | | | |
| 1. | Construction of waste collection center | 2000 sq feet | Based on PWD Specification | |
| No. of dustbins installed | | | | |
| 2. | Dustbins capacity 100 kg (including School, Anganwadi and Panchayat building) | 12 | 5000 | 60,000 |
| 3. | Dustbins for households and commercial green color (10 liters) | 1400 | 150 | 2,10,000 |
| 4 | Dustbins for households and commercial red color (15 liters) | 1400 | 175 | 2,45,000 |
| Collection system, segregation, and disposal of household garbage | | | | |
| 5 | Waste Collection Vehicles (Battery operated vehicles) | 4 | 200000 (approx.) | 8,00,000 |
| 6 | Other SWM Activities, Landscaping and Beautification | Lump Sum | | 30,000 |
| 7 | Construction of incinerator | 1 | | 7,50,000 |
| 8 | Manure processing plant | 1 | | 4,00,000 |
| 9 | Manure selling outlet | 1 | | 1,00,000 |

*Source: Computed by author*

## 6.6 ELECTRICITY DISTRIBUTION AND PROVISION

Supply of electricity to every household, commercial and institutional establishment is of utmost necessity in today's context. 85.3% of the households are electrified which suggest a gap of still nearly 15% of households which doesnot have electrical connections. Commercial establishments all have electrical connections. The entire Neori GP is partially facilitated with a street light. There is a total of 471 no electric pole. However, electrical connections through LED lights are present only in 236 poles.

### 6.6.1 PROVISION OF SMART STREET LIGHT (SSL)

A smart street light system includes power generation, storage, and management device using solar panel. Since it is important to harness renewable source of energy for our daily use, Smart Street Lighting system is proposed in the entire Neori GP.

### 6.6.2 HOME SOLAR SYSTEM

The house-hold survey data suggests a dismal state of affairs of the GP in terms of electricity. Average electric supply in the Neori GP is between 8-10 hours which means a large part of the day is spent in utter darkness. Even functioning of schools and establishments gets jeopardized because of shortage of electricity.

To overcome the crisis, it is proposed to establish "Home Solar system" at every household which maybe further linked with "Grid-connected system". The main advantage of "Grid connected system" includes connecting every household with the main grid so that the excess electric power generated over and above the household usage may be fed in the Grid to be used in other essential services. In this, a household is required to be installed with a roof top PV system over a roof area of approximately 100 sq ft., connected with necessary accessory items which can generate 1400 units annually. This entire process of installation and operation can work on government subsidy and may be executed through US-India Clean Energy Finance (USICEF).

### 6.6.3 PROPOSAL FOR STREET LIGHTING

Considering, the present condition, there is an urgent need to electrify all houses, institutions and commercial establishments. For better electrification of roads and to create a better safer environment, Smart electric lights are proposed to be installed in all roads, streets and narrow lanes within Neori GP. SSL should be installed alternatively because normal LED light is already installed on an alternative electric pole. Details of SSL installation is shown in the Table 6.22. Spatial location of street lights is shown in Fig. 6.16.

**Table 6.22: Details of cost of SSL installation throughout Neori GP**

| | |
|---|---|
| No. of SSL required | 236 |
| Unit cost of SSL | 32,578 |
| Total Cost | 76,88,408 |
| *Source: Computed by author* | |

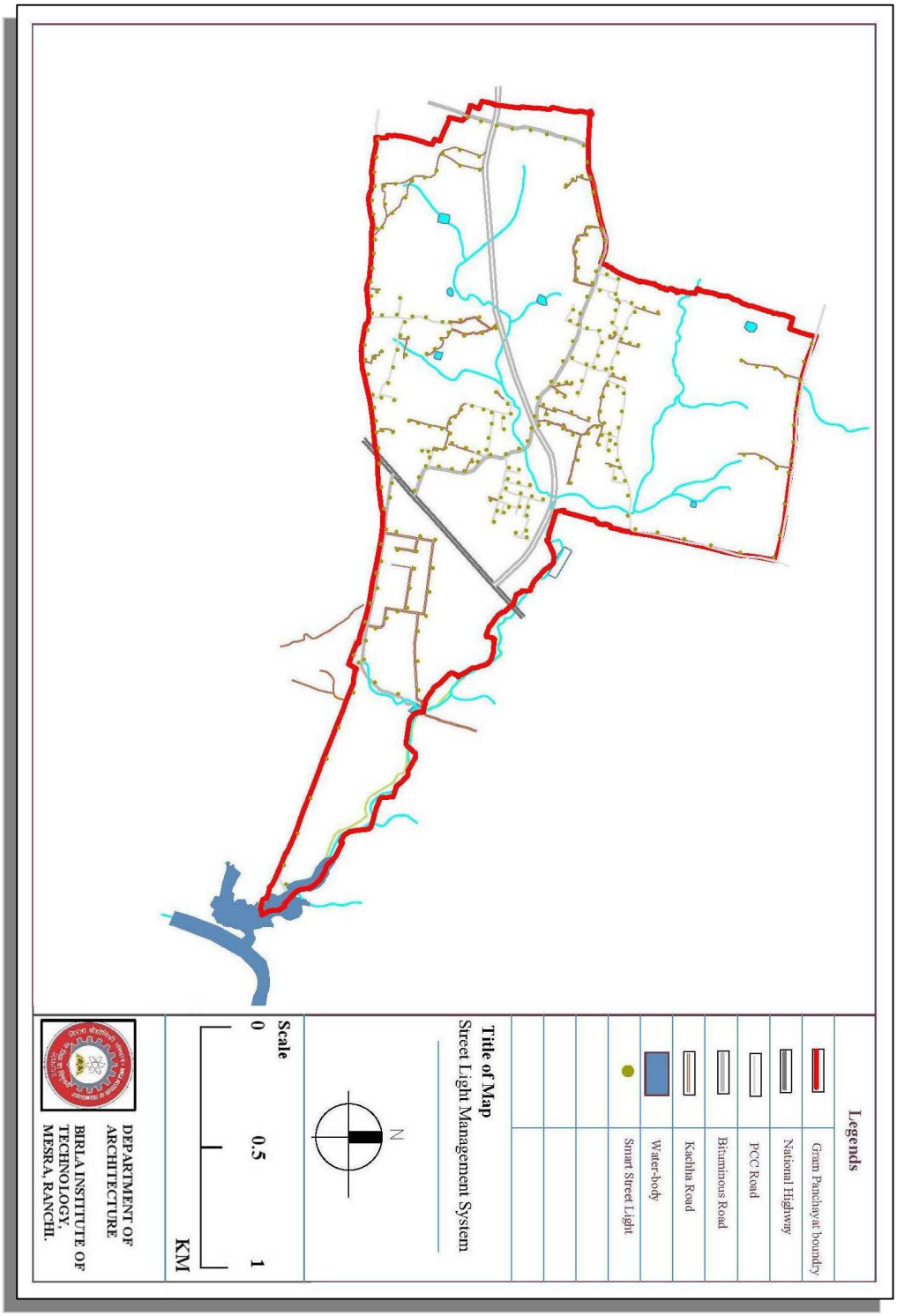
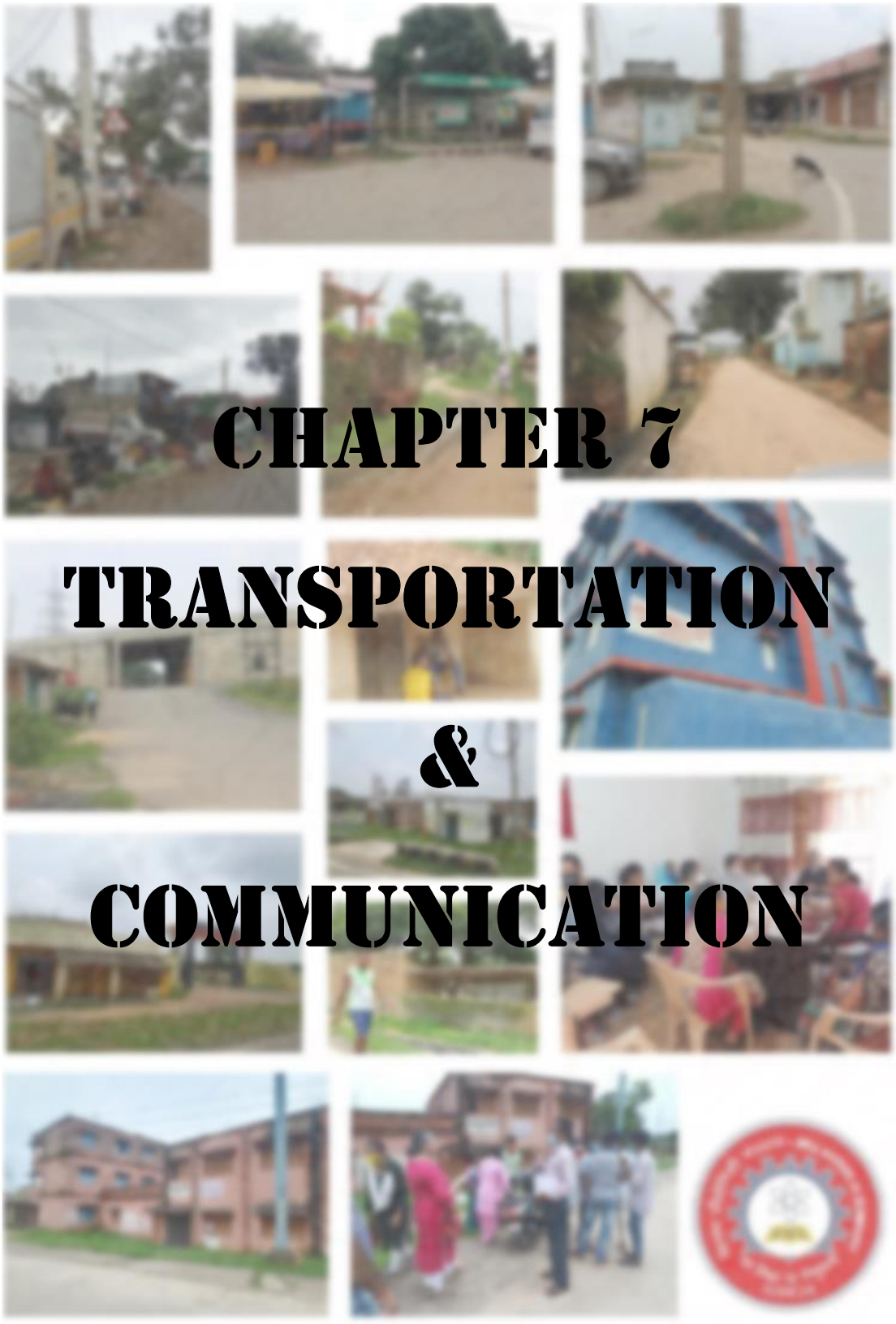



**Fig. 6.16: Spatial locations of street lights in Neori GP**

*Source: based on household survey; prepared by the BIT Mesra Team*



# CHAPTER 7

# TRANSPORTATION

# &

# COMMUNICATION

# CHAPTER 7: TRANSPORTATION & COMMUNICATION

## 7.1. ROAD NETWORK

For rural development, the provision of rural road network is a key component to enable the rural people to have access to schools, health centers and markets. Rural roads serve as an entry point for poverty alleviation since lack of access is accepted universally as a fundamental factor in continuation of poverty. Rural roads act as a facilitator to promote and sustain agricultural growth, improve basic health, provide access to schools and economic opportunities and thus holds the key to accelerated poverty reduction, achievements of Millennium Development Goals (MDG), socio-economic transformation, national integration and breaking the isolation of village communities and holistic and inclusive rural development.

Neori village is well connected with road and rail network with major cities in the state of Jharkhand; it is 18 km from Ranchi, the capital of Jharkhand. Neori village is located in Kanke Block of Ranchi district in Jharkhand, India. It is situated 10km away from sub-district headquarter Kanke and 15km away from district headquarter Ranchi. The National Highway NH 33 passes through the Gram Panchayat. The NH connects the village to Ranchi towards the east whereas to Ramgarh, Dhanbad, Bokaro to the west.Besides this, there are state highways and major district roads linking to other cities Jamshedpur, Daltonganj, Lohardaga in the region. A 6-lane wide ring road takes off from NH 33 and meets the various regions of the state. Like many other villages adjacent to the National Highway in India Neori is also witnessing an unprecedented changes, since past few decades, leading to a profound impact on the overall traffic and transportation system. This chapter describes the importance of location of the village and its connectivity in the region, current system of transportation and issues and future requirements. The existing road map of Neori GP is shown in Fig. 7.1.

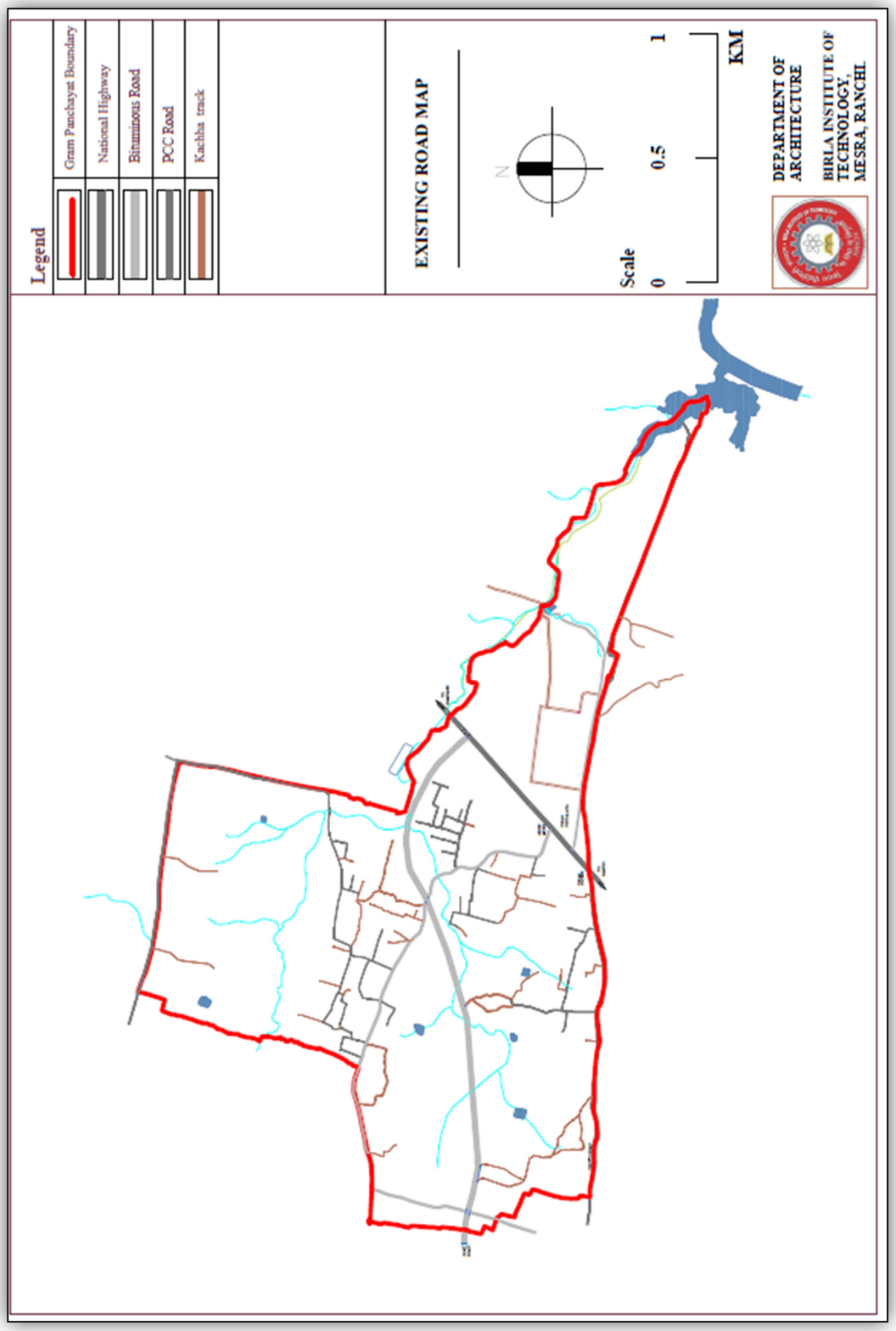



**Fig. 7.1: Existing Road Map of Neori GP**

*Source: based on survey; prepared by the BIT Mesra Team*

**Fig.7.2: National Highway 33**
*Source: Author*

**Fig.7.3: The Ring Road**
*Source: Author*

### 7.1.1. INTER- VILLAGE ROAD AND INTRA VILLAGE ROAD CONNECTIVITY

Connectivity plays an important role in deciding the current traffic pattern as well as future demands of the city. Due to the current development along the NH 33 there is lot of traffic in the stretch whereas the internal roads lack in hierarchy in the system. The roads in the internal area are very narrow.

The roads in and around the village serve as feeder road to the main network. They link villages with the nearest market centers, or any other village. Traffic volume on the ring road is low, comprising mainly of four wheeler and goods carriage, the NH 33 is the major road going across the village which has the maximum traffic comprising of public vehicles i.e. buses, auto rickshaw and trucks (Fig. 7.2).

Slow moving vehicles like cycles and animal drawn vehicles and pedestrians who are generally cultivators of abutting land. There are other lower level roads also, such as paths and tracks. These are farm roads and intra-village roads. The farm roads traverse the agricultural fields and are mainly un-surfaced linking agricultural farms with the main village. Intra-village roads connect the clusters of small size settlements in a village, known with different names in different.

## 7.2 EXISTING ROAD NETWORK

### 7.2.1. EXISTING ROAD NETWORK: ROAD TYPE, ROAD COVER

The length of road network of Neori village is estimated to be about 17.6 km. As per the definition and classification of road system adopted in Road Development Plan of India (1981-2000), rural roads are the tertiary road system which comprises of Other District Roads (ODR) and Village Roads (MOST, 1984).

**Table 7.1.: Road characteristics and the Right of way**

| Type of Road | ROW (in meters) | Carriageway |
|---|---|---|
| B.T.Road | 25 | 15 |
| B.T.Road | 8 | 7 |
| C.C Road | 9.5 | 8 |
| P.C.C.Road | 3.5 | 3 |
| Kuchha | 2 | 1 |

*Source: Primary survey*

As observed in Neori GP there is no systematic hierarchy of roads which is clearly seen in the Fig. 7.3 to 7.13 below:

**Fig. 7.4: NH 33**

**Fig. 7.5: From Neori Chowk to underpass**

**Fig. 7.6: To Chutto Chowk**

**Fig. 7.7: Kendua toli**

**Fig. 7.8: Internal road (Bituminous)**

**Fig. 7.9: Internal roads (PCC)**

**Fig. 7.10: Internal roads (kuchha)**

**Fig. 7.11: Internal roads**

**Fig. 7.12: PCC roads which needs maintenance**

**Fig. 7.13: Paved road in the GP**

*Source: Author*

### 7.2.2 CHARACTERISTICS OF ROAD NETWORK

The road inventory survey conducted along a primary road network of length 17.6 km. Indicated that about 47.8 percent of road is bituminous road, 48 percent of road is concrete and rest is kuccha road. The internal road sections and their images are seen in Fig. 7.14 to 7.19

**Table 7.2: Details of road inventory survey**

| Road name | Length (in m) | Surface type | Carriageway (in meters) |
|---|---|---|---|
| NH 33 | 1140 | Bituminous | 15 |
| Vikas chowk to Chuttu chowk | 1540 | Concrete | 8 |
| Chuttu chowk to ring road | 568 | Concrete | 6 |
| Ring road junction to Pramukh awas | 491 | Bituminous | 7 |
| Pramukh awas to Rameshwar Thakus's residence | 522 | Bituminous | 6 |
| Rameshwar Thakur's residence to Anganbaadi | 540 | Bituminous | 5 |
| Anganbaadi to underpass | 281 | Bituminous | 6 |
| Neori more to the Ring road underpass | 738 | Bituminous | 7 |
| Other bituminous roads | 4100 | | 5 to 8 |
| Other internal roads | 6424 | Concrete | 3.5 to 5.5 |
| Other internal roads | 1165 | Kuchha | 1 to 2 |
| *Source: Primary survey* | | | |

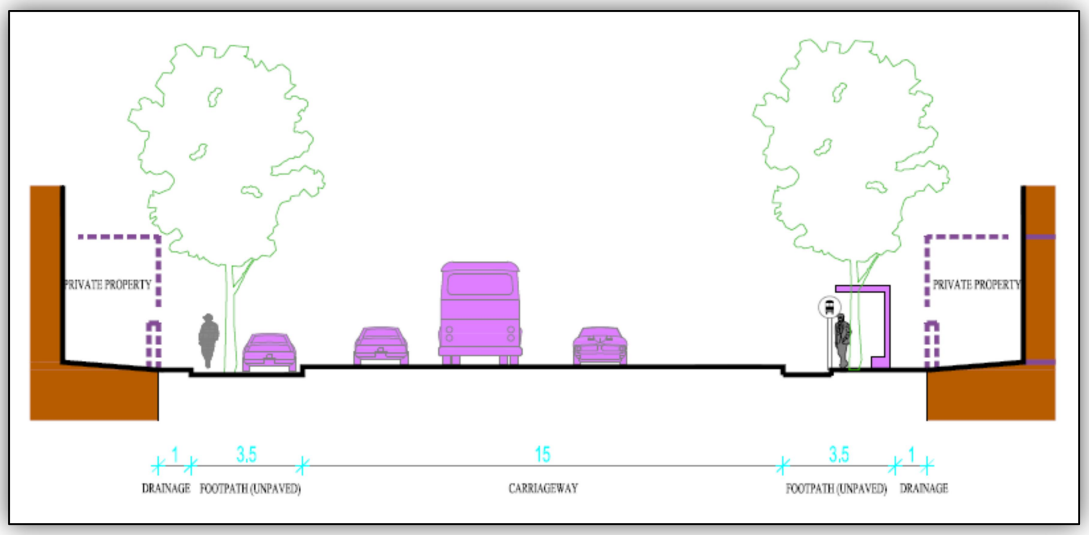



**Fig. 7.14: Existing road section for NH-33**
*Source: prepared by author*

**Fig, 7.15: National Highway 33**

**Fig. 7.16: Vikas Chowk to Chutto Chowk**

*Source: Author*

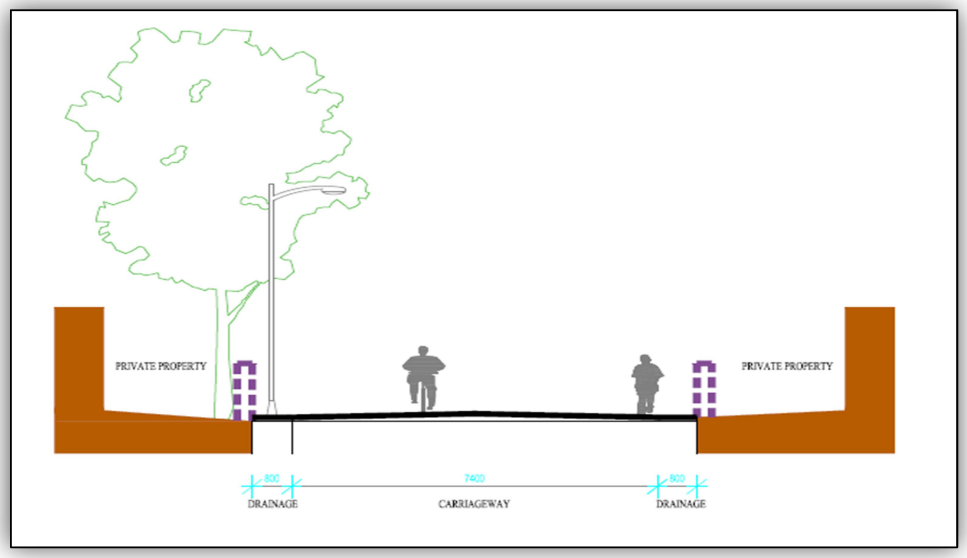



**Fig. 7.17: Road section for ROW 9 m at Chutto Chowk Road**

*Source: prepared by author*

**Fig. 7.18: Internal paved roads section**

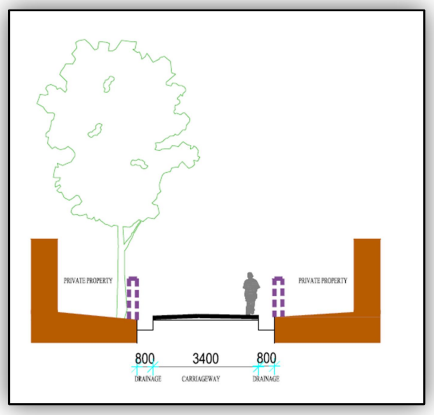



**Fig. 7.19: 5m ROW Road**

*Source: Author*

## 7.3 STREET FURNITURE

Street furniture is also covers a vast array of equipment placed in, on, or over the road for safety and convenience on the street and including various purposes like traffic control and lighting, information and communication, relaxation and waiting, waste control and drinking, cooling and beautification, immortalization etc. These include

traffic barriers, traffic lights, street lamps, advert boards, signage, post boxes, phone boxes, bus/taxi/cycle shelters, benches, brief toilets, waste bins, drinking water stands, fountains, watering troughs, planters etc.

Below is the existing street furniture which is very few. With respect to the fact that the National Highway passes through the gram panchayat there is a need of traffic lights, street lamps, advert boards, signage, etc. of which only a few exist as seen in Fig 7.20 to 7.26. There is no zebra crossing throughout the stretch of NH 33 within the gram panchayat area as seen in Fig 7.27, people cross the road without any safe crossing.

**Fig. 7.20: The signage is inappropriately placed**

**Fig. 7.21: The street lights are placed at regular interval`**


**Fig. 7.22: No parking space and Signage**

**Fig. 7.23: Bus stop**

**Fig. 7.24: Street vendors along NH 33**


**Fig. 7.25: Neori Chowk**


**Fig. 7.26: Sign boards**

**Fig. 7.27: No pedestrian crossing**

*Source: Author*

## 7.4 TRAFFIC SURVEY AND DATA COLLECTION

The traffic count data of the national highways collected by the Road is given in the table below. The survey was done at Neori More, The graphical representation of modal share presented in below Fig.7.28:

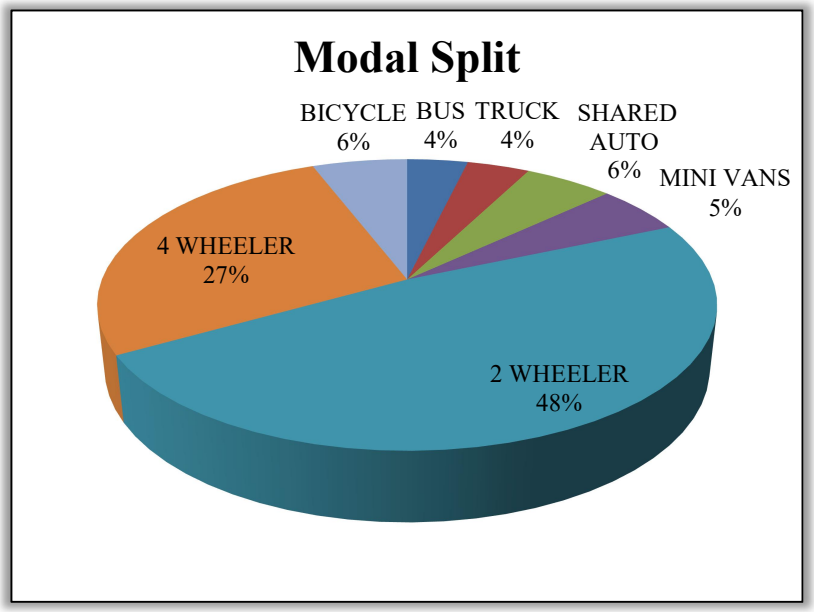



**Fig. 7.28: Modal share in Neori Gram Panchayat area**

*Source: based on survey; prepared by the BIT Mesra Team*

A composition of traffic shows that major mode of transportation in this route is by 2 wheeler which forms the maximum proportion of traffic on almost all the locations. There are lot of shared autos which is used by the people to commute to the nearby workplace and is a major mode of connectivity to other villages and nearing cities. The percentage of 4-wheeler is also comparatively high up to 27%.

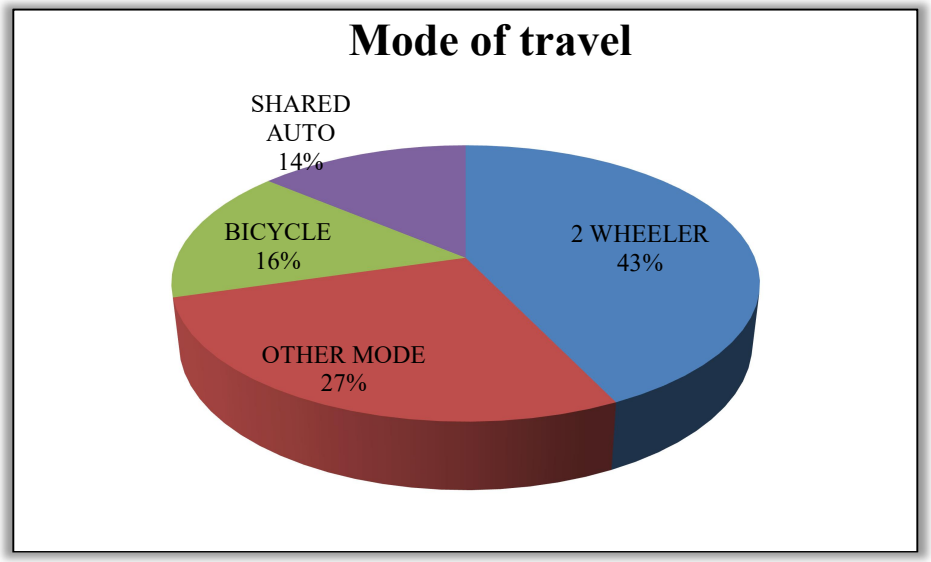



**Fig. 7.29: Modal share for the Neori Gram Panchayat area**

*Source: based on survey; prepared by the BIT Mesra Team*

The chart above (Fig 7.29) shows that the share of mode of transportation used by the people of Neori gram panchayat to commute to their work. So it's observed that 2 wheeler is used maximum to commute to their work and bicycle and shared auto share the same percentage approximately. Therefore we see a need of sustainable approach to the network for public transportation for the Neori village. The bicycle being the cheapest mode of transportation is seen to be used by 16% of the population followed by shared auto being 14%.

## 7.5 PARKING SURVEY

Parking is an important component of transport system. Parking surveys were carriedout as a part of comprehensive traffic study at both off-street and on-street locations to assessthe parking characteristics viz., parking demand, usage pattern of dedicated parking facilities,parking accumulation on road stretches, parking duration, composition of parked vehicles etc.Uncontrolled roadside parking is an omnipresent problem in all the area where parking space is not allotted (Fig. 7.30 to 7.33). Parking survey was conducted for a period of total 2hours along the National Highway's identified locations/stretches.

**Hourly Variation:** The parking demand exists uniformly throughout the day along the NH 33 it is because of the major commercial area, banks, post office and market area. The demand for parking begins at around 9 am and lasted till 8 pm.

**Fig. 7.30: Unorganized parking along NH-33**


**Fig. 7.31: Unorganized parking done in front of the bank.**

**Fig. 7.32: Vehicles parked along the street**

**Fig. 7.33: Vehicles parked along NH 33**

*Source: Author*

It is observed that the vehicles are parked along the National highway on the unpaved space beside the carriageway (Fig. 7.30). These vehicles are parked mostly in front of the shops, banks and post office and as there is no designated space it is done in an unorganized manner along the NH 33 as seen in Fig 7.32. Below is the map (Fig.7.34) showing the unorganized parking done at various areas of the Gram panchayat along the NH and on weekly market days it is observed on the road towards Chuttu Chowk.

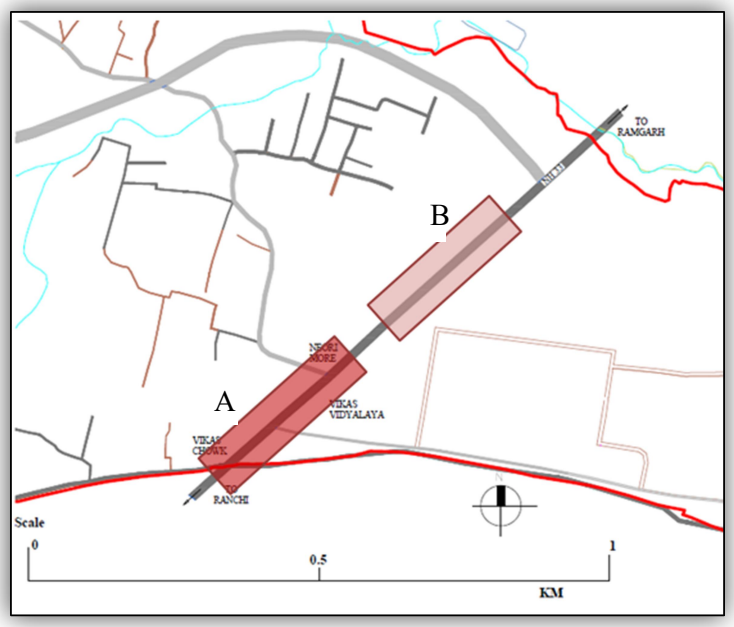



**Fig. 7.34: On-street parking locations in Neori GP**

*Source: based on survey; prepared by the BIT Mesra Team*

The map in Fig. 7.34 shows that at zone A- Vikas Chowk to Neori Chowk a lot of on street parking is done which is due to the commercial activities and other offices. In this zone mostly the 2 wheeler and 4 wheeler vehicles are parked. At zone B which is along the boundary of Vikas Vidyalay till the Vikas Nursing home, there are heavy trucks parked along the road. The peak parking accumulation of 2-wheeler and 4-wheeler takes place during the morning/afternoon hours from 11 AM to 2 PM on regular days whereas on market days it observed from 12 PM to 5 PM.There is huge demand for truck parking along the National highway as trucks and other goods vehicles are parked in discriminately along the NH 33 roads in the Neori Gram Panchayat area.

## 7.6 PEDESTRIAN COUNT SURVEY

The survey was conducted at three locations across the National Highway 33 for duration of 1 hour from 11 AM to 12 PM. The summary of pedestrian counts at all the locations is presented in the Table 7.3 given below.

**Table 7.3 Number of pedestrians crossing at various points**

| Points | Location | Number of pedestrians crossing |
|---|---|---|
| A | VIKAS CHOWK | 278 |
| B | NEORI CHOWK | 184 |
| C | VIKAS NURSING HOME | 140 |

*Source: survey by authors*

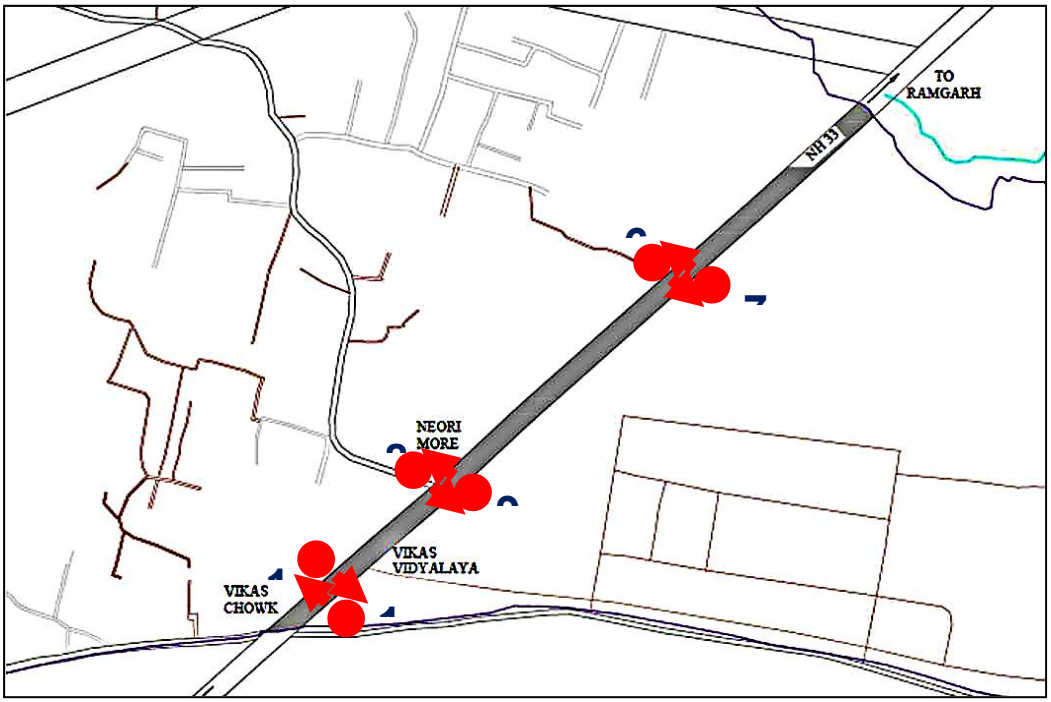



**Fig. 7.35: Pedestrian movement per hour count**

*Source: based on survey; prepared by the BIT Mesra Team*

With reference to the survey done the map shown in Fig 7.35 reflects heavy pedestrian crossings at Vikas Chowk, especially on the market days. As there are banks and post office and other offices on the other side of the major settlement of Neori gram panchayat a lot of pedestrian crossing observed near Vikas Chowk and also Neori Chowk.

National Highway 33 has heavy traffic flow and has a total ROW of 25 meters whereas the width of the carriageway is 15 m along the sides the drains are constructed of width 1 meter and rest of the space which is for the pedestrians is unpaved. The unpaved area being at the same level as carriageway and no barricading is seen in the area thus inviting on street parking along the road. There are no footpaths in any of the streets so the pedestrians are forced to walk on the carriageway which is not safe.

## 7.7 PUBLIC TRANSPORT SYSTEM

Public transportation system in Neori comprises of auto rickshaw which runs in regularly in the NH and it connects Ranchi to Ormanjhi. There are limited city services plying on this road. Cycle rickshaws are negligible in the village. However, there is a dependence on auto rickshaws and minidor carry a lot of passenger population. This is due to less travel distances, easy availability of auto rickshaws and low fares. These vehicles only ply at the NH 33 and the Ring road which connects the village to the Kanke Chowk which is shown in the map given in Fig 7.36. Most of the auto rickshaw runs in the NH 33 carrying about 30% of the village population commuting to other areas. Though, other Intermediate Public Transport (IPT) modes (para transit) is known to be an important mode of transport for last point connectivity, it is absolutely absent in the internal roads of the village. There is a need of Intermediate Public Transport (IPT) system which will play a dominant role in meeting the need of public transport within the Gram panchayat.

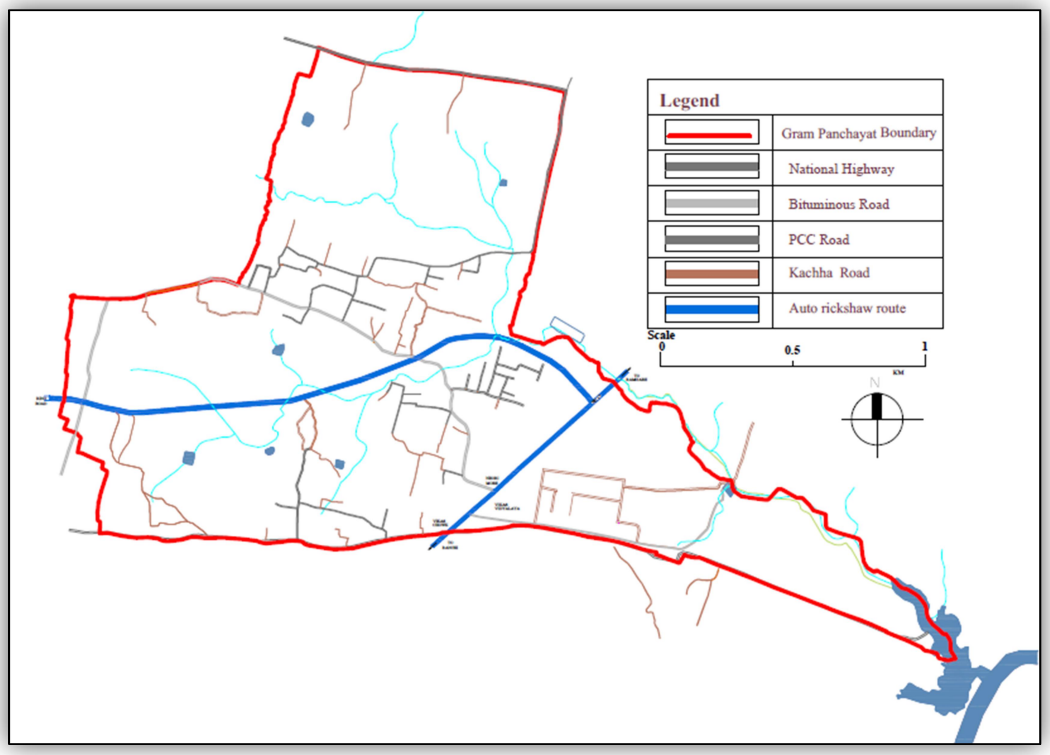



**Fig.7.36: Map showing auto route**

*Source: based on survey; prepared by the BIT Mesra Team*

## 7.8 PROPOSAL AND RECOMMENDATIONS

Rural roads play an important role in the overall development of rural areas as access to social and economic infrastructure and services are the sine qua non of rural development. In an indirect way, rural roads influence the process of growth through changes in socio-economic attitudes of people by facilitating the dissemination of knowledge and reduction of inequalities leading to better quality of life. The proposals given below focus on:

a) Prioritise mobility for all socio economic groups and genders.

b) Give adequate attention to sustainable modes of transport (i.e., public transport, pedestrians and non-motorised).

c) Provide a recognised and effective platform for integrating land use and transport planning.

e) Focus on the safety.

### 7.8.1 COMPLETE STREET DESIGN

It is observed that National Highway 33 is a busy road and the right of way is not the same varying from 22 m to 25 m so it needs to have a uniform width and the street needs to design which would cater to all the requirements. The road must have :

- Fast moving vehicles
- Non-motorized vehicles
- Bicycles
- Pedestrians
- Parking space
- Safe crossings
- Median/ separator
- Street Furniture

Hence a uniform width with complete street design can be the best solution for consistent and safe movement.

The complete street design for the Neori Gram Panchayat in the road cross section is given in the Fig. 7.37 and Fig. 7.38.

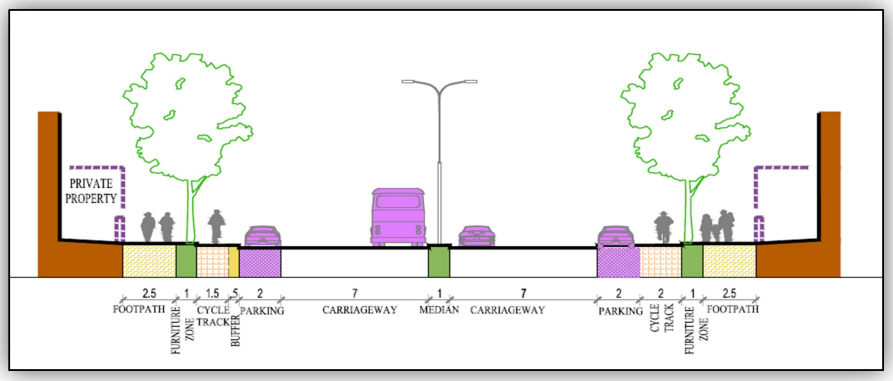



**Fig. 7.37: Street design proposal for 30 m wide road with footpath, cycle track, parking space and traffic carriageway**

*Source – prepared by author*

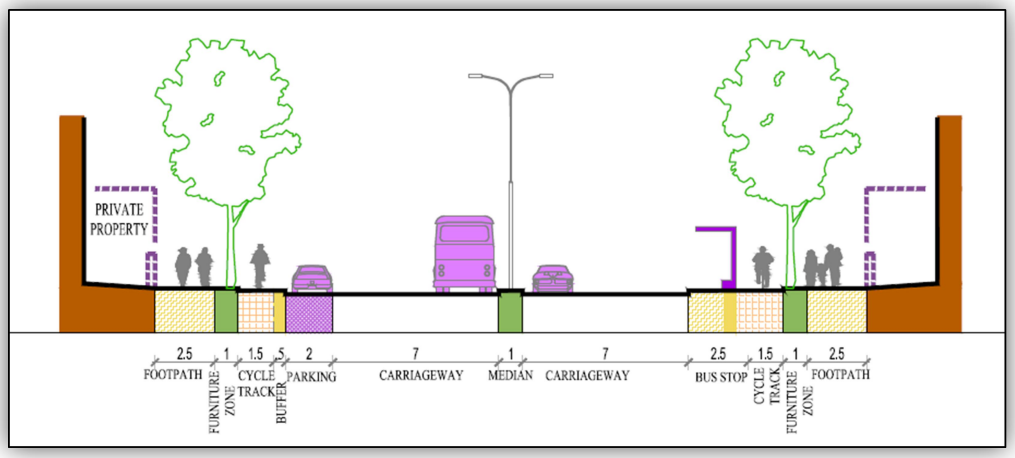



**Fig. 7.38: Street design proposal for 30 m wide road with footpath, cycle track, parking, bus stopand traffic carriageway**

*Source – prepared by author*

All the streets must follow the IRC: Standard measurements and dimension for a rural road in India which is as follows: IRC 073: 2002 (Fig. 7.39).

A major part of the roads are unpaved which reach to various houses so those paths need to be paved or a concrete road must be constructed as per the power of the government the land can be acquired and roads can be proposed. For the first phase: the bituminous roads need to be maintained and PCC roads should also be improved

with proper drainage along the streets which would make the streets comfortable to walk.

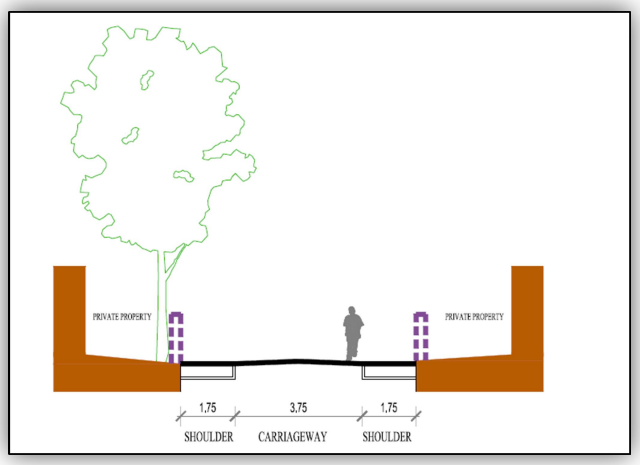



**Fig. 7.39: Road geometry as proposed by IRC**

*Source – prepared by author*

### 7.8.2 DEVELOPMENT AND MAINTENANCE OF THE NATIONAL HIGHWAY

The development and maintenance of the National Highway is an important part for this Gram Panchayat. Ministry of Road Transport & Highways, Government of India, is responsible for the development and maintenance of NHs in India. For the development of NHs in the country, the National Highways Development Project (NHDP), the largest highways project ever undertaken in the country, was implemented by the National Highways Authority of India (NHAI) of the Ministry of Road Transport & Highways.

### 7.8.3 ROAD HIERARCHY

Road hierarchy in any regions guides the people to a settlement area. A well-defined hierarchy should be followed for the development and maintenance of the internal roads in the village (Table 7.4). Hierarchy can be defined on the basic purposes as follow:-

- Roads – to carry through traffic, serving a longer distance purpose;
- Streets – to provide access to properties and local area. (Eppell Olsen & Partners, 2001)

**Table 7.4: Proposed hierarchy of roads**

| Classification | Cover/top surface | Traffic volume (in vehicles per day) | Carriageway (in meters) |
|---|---|---|---|
| Collector Road | Bituminous | 150 | 8-10 |
| Commercial / Heavy Residential Road | Bituminous | 75 | 5-7 |
| Seasonal Roads | PCC | 25 | 5-6 |
| Local Road | PCC | 25 | 3.5-5 |
| Low Volume Farm Access | PCC | 10 | 2.5-5 |

*Source: Rural road classification definition, PWD*

### 7.8.4 MEDIAN / SEPARATOR

The median divides the traffic moving in separate directions in a street. It is a physical barrier which stops the vehicles to travelling into opposite traffic lane and it is an essential component of safe streets (Fig. 7.40). Median also acts as refuge for the pedestrians to cross the road (Fig. 7.41). In the entire stretch of National Highway going through the Neori village the median is required for separation of the traffic.

**Fig. 7.40: Median divides the traffic moving in different direction**

Source: http://toolkit.irap.org/default.asp?page=treatment&id=13

**Fig. 7.41: Median also acts a refuge for the pedestrians**

Source: : http://urbanmobilityindia.in/Upload/Conference/684f851a-00c6-48e4-a2e3-a6ade1930456.pdf

### 7.8.5 PEDESTRIAN PATH

While user awareness is an essential element of a holistic approach to road safety, it is only one component of an effective strategy to address road safety. There is a lack of dedicated footpath which enforces the pedestrians to walk on the carriageway. Especially along the NH 33 there is need of dedicated footpaths along with cycle tracks which will improve the safety of NMT users. In Neori village walking is the most fundamental mode of mobility. A good walking environment is not only the need of the urban setting but is essential for every settlement; all of the streets need dedicated footpaths.Footpaths need to be unobstructed, continuous, shaded, and well lit. New Indian Roads Congress guidelines (IRC 103 2012) clarify that all footpaths should have three main zones:

1. Frontage zone,
2. Pedestrian zone, and
3. Furniture zone.

Per IRC guidelines, the pedestrian zone must provide a continuous clear space for walking with a minimum width of 2 m. The pedestrian zone must be free of any obstruction (Fig. 7.42). This width may vary as per the adjacent land use and can be as wide as 4.5 m in market areas. Street utilities such as manholes, trees, benches and other potential obstructions should be placed outside the path of travel and in the furniture zone, which should be at least 1 m wide. The frontage zone can vary between from 0.5 to 1 m.

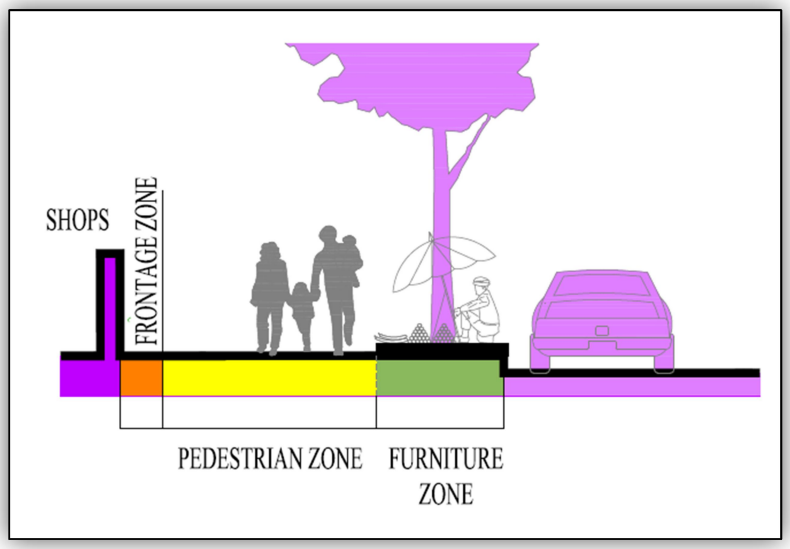



**Fig. 7.42: Proposed 3 Zones of footpath**

*Source – prepared by author*

### 7.8.6 PEDESTRIAN CROSSING

Good pedestrian crossing measures should be undertaken to allow pedestrians to cross busy streets safely and conveniently.

Proposals for Pedestrian safety:

1. **Raised Zebra Crossing/ Table Top**

   Formal raised pedestrian crossing, where pedestrians remain at the same level as the footpath and vehicles pass over ramps will enable safe crossing for pedestrians. Raised crosswalks should be located at all intersections and at major activity areas are given in Fig.7.43 and 7.44 and should have a slope (Fig. 7.45). As along the NH there is the weekly market space i.e. at Vikas Chowk and Neori more which connects the two sides of the village, therefore it requires pedestrian crossing.

**Fig 7.43: signage for zebra crossing**

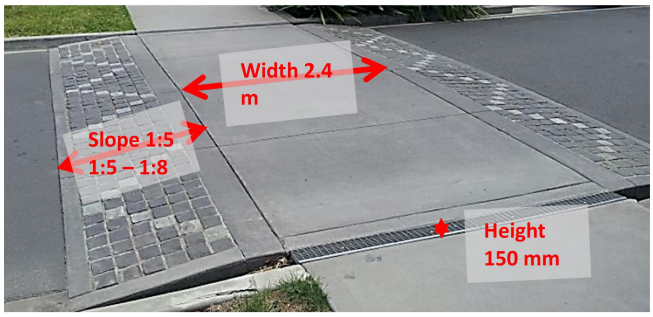



**Fig 7.44: Raised / Table top Zebra crossing**

*Source: https://commons.wikimedia.org/wiki*

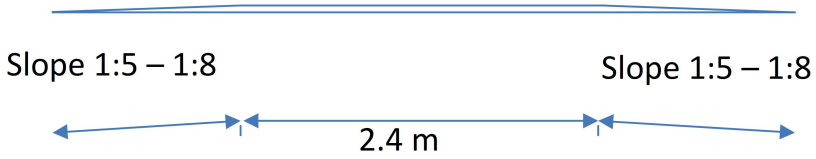



**Fig. 7.45: Geometry of Table top crossing**

*Source – prepared by author*

2. **Normal Zebra Crossing**

   The normal zebra crossing should be made near the Vikas Nursing Home, which sees a good amount of pedestrian crossing. The map shown in

Fig.7.46, 7.47 and 7.48 has the proposed zebra crossing on the NH 33 where there is a large amount of pedestrian crossing.

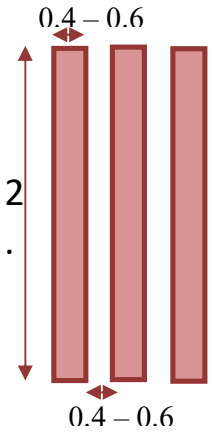



**Fig. 7.46: Zebra crossing marking**

**Fig. 7.47: Zebra crossing at NH**

Source:
https://commons.wikimedia.org/wiki/File:3810Pila_National_Highway_62.jpg

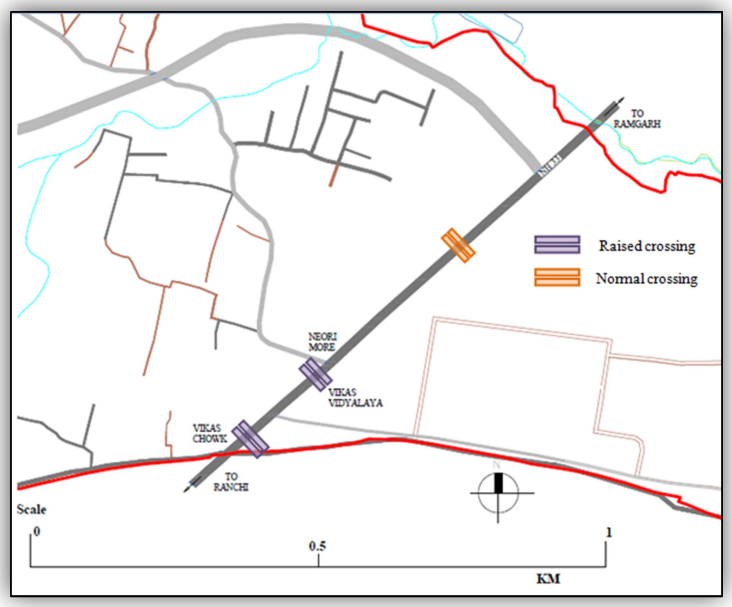



**Fig. 7.48: Proposed location for pedestrian crossings**

*Source: based on survey; prepared by the BIT Mesra Team*

### 3. Signalised pedestrian crossing

Pedestrian crossing signals are often used at intersections and are also used at points of busy roads for the safe crossing of the pedestrians (Fig 7.49).

Signalized pedestrian crossing gives priority to vehicles and pedestrians are allowed to cross when at signals halt vehicle traffic on the through road. Signals must be timed to give pedestrians long enough to complete their crossing before the signals change to allow vehicle traffic to start passing through the crossing again.

**Fig 7.49: Pedestrian crossing signal**

*Source: https://zebrafishimages.blogspot.com/2019/08/zebra-crossing-traffic-signal.html*

### 7.8.7 COMFORT AND SAFETY

Streets should serve as safe, shaded public open space corridors with the existing landscape, lighting, and greenery. Whereas the footpaths should serve as spaces for social and economic activity must not be ignored. Thus they must be designed with dedicated space for seating and regulated street vending besides simply walking. Tree shade makes walking comfortable and pleasing. Sufficient space should be allocated for tree pits next to the footpath.

### 7.8.8 STREET VENDORS

Street vending: Street vending plays a crucial role in the economy of Ranchi. Therefore, it is important to provide dedicated vending zones, particularly in areas close to the transitstations. As in Neori village the street vendors are seen along the NH 33 (Fig. 7.50), they must be incorporated in the street design. A space must be allotted to them which will not hamper the movement of the vehicles and pedestrians thus utilizing the entire right of way evenly. The street vendors are proposed to be relocated to the Vikash Chowk –Chuttu Road by removing the dilapidated structures along the road.

**Fig. 7.50: Street vendors along the National Highway 33**

*Source: Author*

### 7.8.9 STREET FURNITURE

Concept of street furniture, its application goes a long way in shaping the urban environment particularly with regards to planning and architecture in providing the needed safety, security and beauty. Also the proper planning, design and management of street and landscape furniture enhances the functionality, aesthetics and add value to the built environment. Therefore proper traffic lights and signage along with other street elements are to be implemented in the plan (as shown in Fig. 7.51).


**Fig. 7.51: Traffic and street signs proposed**

*Source: https://mgglobalads.com/traffic-signs-street-signs-philippines/*

The street signs provide advanced information regarding the direction, give warnings, orders or guidance to the riders, few of the signage are shown in Fig 7.51. Here there is need for the traffic sign for pedestrian crossing at required intervals. The sign for

school and other important spaces along the highway are proposed. A defined and detailed design guidelines for various street elements, including footpaths, cycle tracks, pedestrian crossings, bus stops, medians, refuge islands, vending, on-street parking, and underground utilities is a major requirement.

### 7.8.10 PARA TRANSIT

As a large percentage of the population commutes to nearby places for work and education and they use the public vehicles it is necessary to provide a Para transit mode for last point connectivity within the village. The existing para transit in the village in available only on one street which starts from the Vikas Chowk connecting the ring road. The most feasible mode can be proposed as auto- rickshaw and cycle sharing. Hence we see that when 30% of the village population travels to work by various modes which run in the NH 33 and Ring road there is absence of last point connectivity. Though, other Intermediate Public Transport (IPT) modes (para transit) is known to be an important mode of transport for last point connectivity, it is absolutely absent in the internal roads of the village. There is a need of Intermediate Public Transport (IPT) system which will play a dominant role in meeting the need of public transport within the Gram panchayat. The proposal map shows the routes identified for the Intermediate Public Transport (IPT)

### 7.8.11 BUS TERMINUS

With reference to the Ranchi Master Plan 2037 there are 4 buses terminus proposed at various locations and one among them has been marked partially at Neori and Oyana. These provide services to businesses (and households) within that village also helps to move goods and people between two points. As this bus terminus can serve by inter-urban transport services, allowing connections to larger towns and other destinations for those who need to travel further. The land that is adjacent or serviced by good transport services generally has greater value due to the utility it offers. Consumers can have access to a wider range of services. On the other side the residents can have better accessibility to employment, services, and social networks, all of which transcribes in higher land value. An efficient transport system with modern

infrastructures favors many economic changes, along with job creation and its derived economic activities.

### 7.8.12 LAND USE TRANSPORTATION INTEGRATION DEVELOPMENT

The land use transportation integration development is required for the area along the national highway as it will be based on the nature of interaction between spatial and transport development. The allocation of land uses impact demand for travel as people need to access different activities; transport infrastructure adds to the attractiveness of a location by improving accessibility and leads to change in land values. With improved accessibility, the locations become attractive for investments and it results in further development of these locations. There should be high density development around the transit station and the mixed land should be encouraged on the transit corridor for which the land should be identified by the government.The road network will focus around transit nodes and easy accessibility to all the adjacent places. A safe and competent transit network will lead to the safety and strategic development of the gram panchayat.

With reference to the strategic goals for the Neori Gram panchayat, the focus is to improve local economic development through various sectors. For any part of the gram panchayat to be growing it is the most important need to be connected to the main streets through road network. Considering each part of the development aspect the transportation network has to be strengthened.

**Industries and transportation:**

- The proposal of the small industrial area as innovation and training center are proposed which should be directly linked with the National Highway 33 or the ring road. This will generate employment to the people of Neori as well as people from the nearby villages. These industries need to be adjacent to the main road for easy access of the raw materials and to dispatch the finished goods to nearby market.
- Since there is a proposal for the multi commodity cold storage and also for fruits and vegetables in the Neori Gram Panchayat, it should be located such

that it is easily accessible and close to market hubs and/or produce collection point.

- Because of its intensive use of infrastructures, the transport sector is an important component of the economy and a common tool used for development. The building construction has always been a growing industry in developing areas and with the proposal of various residential, commercial and industrial areas as per the Ranchi Mater plan 2037 there will be several built structures in the city. Promoting and allotting the space for the various sectors elated to building construction like welding services, carpentry, plumbing, electrical fixtures etc. along the main roads would connect the potential customers to the suppliers. This would enable the people of Neori to supply to the market near and further afield. This would open a wider area of employment in the labour market.

**Agriculture and transportation:**

- The agricultural commodities go through several operations before they reach the market, transportation being one of them. it is identified that transport costs has critical role in recognizing the link between accessibility and agricultural development hence a proper transport system is important to competent agricultural marketing as it would lead to distribution of agriculture produce from the farms to the market and also to various urban communities.
- Thus Transport creates market for agricultural produce, improves interaction among geographical and economic regions and opens up new areas to economic focus.
- Neori GP being the agriculture based village and National Highway 33 as well as the ring road crossing through the gram panchayat will play a crucial role in the connectivity of the agricultural produce to the market and a strategic location of the storage, processing plant and its connectivity to the market has to be along these two major roads and various facilities in it.
- There are two aspects of transport facility, first being the link between farms and market second transport equipment carry agriculture produce. So the internal roads in the gram panchayat which connect to the farms have to be constructed as mentioned in IRC: Standard measurements and dimension for a

rural road in India which is as follows: IRC 073: 2002 so the heavy equipment required for agricultural activities could be carried out.

### 7.8.13 TRANSIT ORIENTED DEVELOPMENT (TOD)

With reference to the Ranchi Master Plan 2037 the Government of Jharkhand TOD 2016-2026 Policy , the Government of Jharkhand aims to, sustainably, guide urban development in the State over the coming years and provide a clear framework for its cities to better manage their existing urban areas as well as guide future transportation and land use investments. The future road network of Neori is shown in Fig. 7.52.

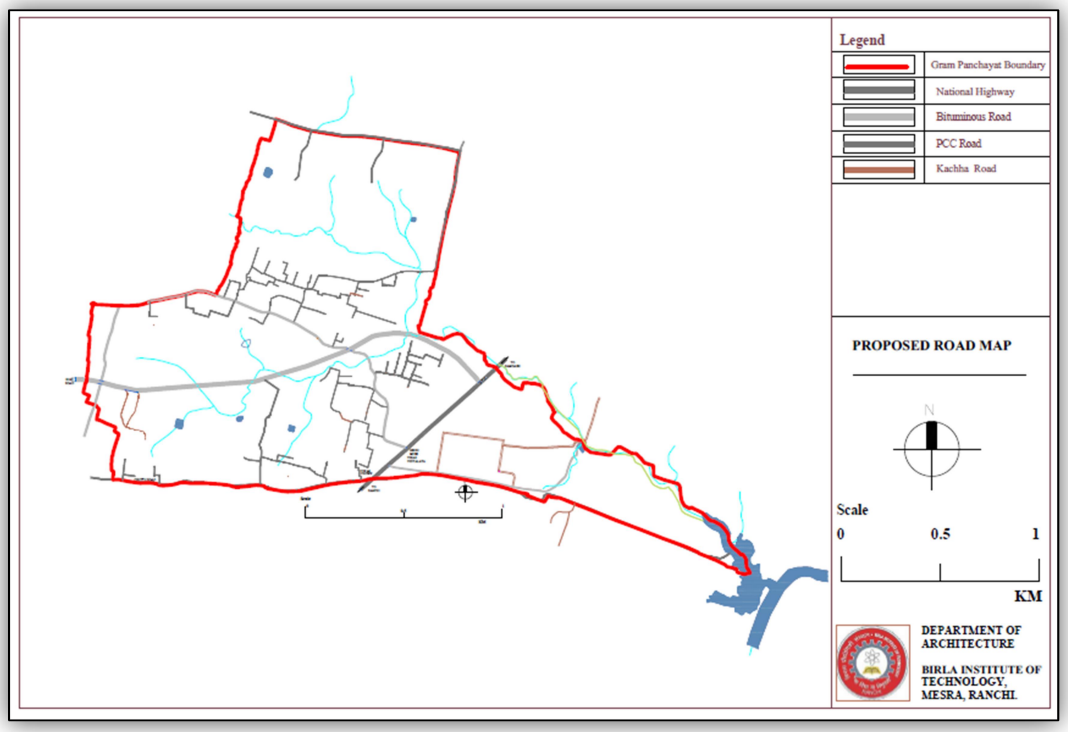
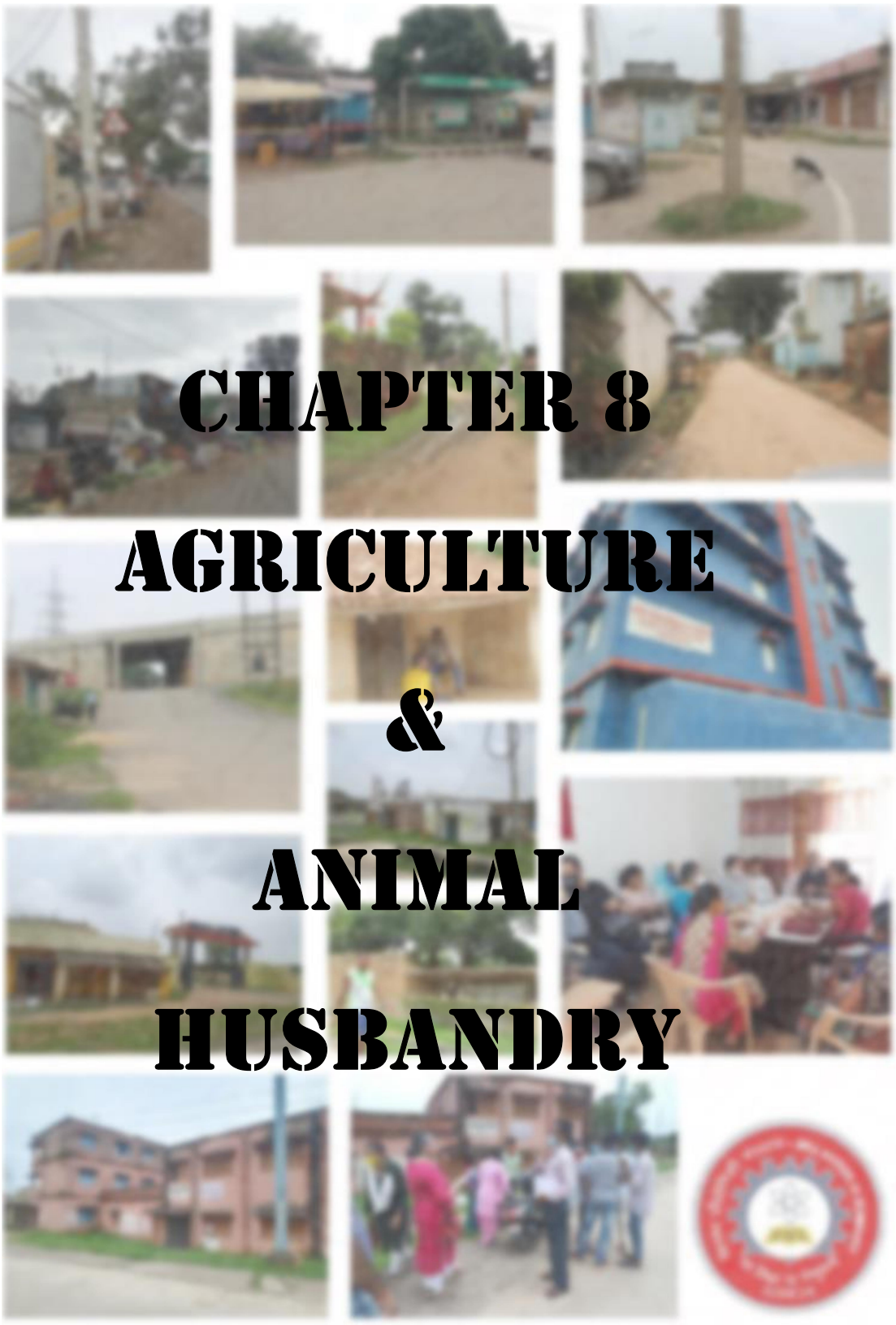



**Fig. 7.52: Proposed Road Network map of Neori GP**

*Source: based on survey; prepared by the BIT Mesra Team*



# CHAPTER 8

# AGRICULTURE

# &

# ANIMAL

# HUSBANDRY

# CHAPTER 8: AGRICULTURE & ANIMAL HUSBANDRY

## 8.1 AGRICULTURE AND ANIMAL HUSBANDRY

Neori GP is bifurcated by Ring Road and NH 33. In the Far East, it extends till Getalsud dam. Numerous commercial and institutional developments have taken place along the NH 33. A similar growth pattern can be seen along the ring road as well. About one-third of the GP comes under Vikas Vidyalaya School. The presence of National Highway and Ring Road has tremendously affected the land value in the GP.

## 8.2 LAND

### 8.2.1 LAND CLASSIFICATION

Land is the basis for agriculture and other rural land uses, encompassing soils, climate, vegetation, topography and other natural resources. Land in Jharkhand has been classified as per the usage in the agricultural sector as - Forest Area, Area under Non-Agricultural Uses, Barren & Uncultivable Land Area, Permanent Pastures and Other Grazing Land Area, Land under Miscellaneous Tree Crops etc. Area, Culturable Waste Land Area, Fallows Land other than Current Fallows Area, and Fallows Area. In Neori Panchayat, of the total area of 388.98 hectares, the net sown area is 97.98 hectares (Fig. 8.1). The total un-irrigated land is 194 hectares against the total irrigated area of 97 hectares *(Source: Mission Antyodaya Baseline Survey, 2018).*

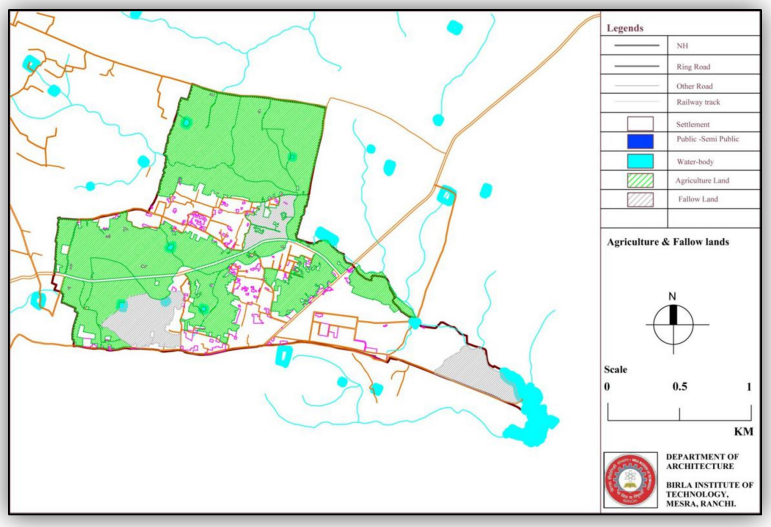



**Fig. 8.1: Agriculture and Fallow Lands.**

*Source: based on household survey; prepared by the BIT Mesra Team*

### 8.2.2 LAND VALUE

The existence of NH 33 and the construction of the Ring Road have caused a tremendous increase in the land value of the GP. The Table 8.1 clearly depicts the difference in the circle rates and market rates.

**Table 8.1: Land Value**

| S. No. | Land Value | Rate in Rupees (Lakhs/Decimal) | |
|---|---|---|---|
| 1 | Circle Rates | Agricultural | 0.565 |
| | | Residential | 1.13 |
| | | Commercial | 2.245 |
| 2 | Market Rates (Near NH 33) | 4.5 | |
| 3 | Market Rates (Near Ring Road) | 4.5 – 5.0 | |
| 4 | Market Rates (Away from Road) | 2.0-3.0 | |

*Source: Circle rate from the Circle Office, Ranchi, and the current market rates from interview*

### 8.2.3 LAND HOLDING SIZE AND PATTERN

Land holding size varies between 0.2 acre and 10 acre. More than 50% households have land less than 1.2 acres, increasing the agricultural production cost and underlining the need for enhancing the potential for rural non-farm employment. As per SECC data, in the context of land owned – the total unirrigated land in the GP is 65.50 hectares, whereas total irrigated land is 184.84 hectares and other irrigated land is 1.00 hectare.

## 8.3 AGRICULTURE

Jharkhand, the 28th State of the Indian Union is best known for its rich mineral resources. However, 78% of the total population of 2.69 crore live in rural areas, largely dependent only on agriculture and allied activities. The total cultivable land in the State compares well at 52% of the total geographical area with 55% in the country. But, unfortunately while 76% of the total cultivable area is under net sown area in the country, only 43% is cultivated in Jharkhand. The state suffers from several critical gaps in the agricultural and allied sectors.

### 8.3.1 AGRO-CLIMATIC SUBZONES

Jharkhand forms a part of agro-climatic Zone VII of the country known as Eastern Plateau and Hill Region. The state has been further been divided into three agro-climatic regions i.e. Central and North-eastern Plateau (Region-I), Western Plateau (Region-II) and South-eastern Plateau (Region-III) as shown in the Table 8.2 and Fig 8.2.

**Table 8.2: Agro-climatic Regions of Jharkhand**

| Region No. | Agro-climatic Region | District | Cropped area (00 ha) | Percent irrigated area | Characteristic features |
|---|---|---|---|---|---|
| **Region-I** | Central North-eastern Plateau | Chatra, Koderma, Hazaribag, Ramgarh, Bokaro, Dhanbad, Dumka, Pakur, Godda, Jamtara, Sahebganj and Ranchi | 851.05 | 11.40 | Erratic and uneven distribution of rainfall, Coarse textured soils, Crust formation on the soil surface. Low water retention capacity of the soils. Lack of safe runoff disposal and drying of the tanks. |
| **Region-II** | Western Plateau | Garhwa, Palamau, Latehar, Lohardaga, Simdega, Gumla and Khunti* | 670.03 | 12.60 | Erratic and uneven distribution of rainfall, Low water retention capacity of the soils. Lack of safe runoff disposal and drying of the tanks. |
| **Region--III** | South-eastern Plateau | East Singhbhum, West Singhbhum, Sarikela-Kharsawan | 289.05 | 7.80 | Uneven distribution of rainfall. Low water holding capacity, eroded soils. Shallow soil depth. Poor soil fertility. |

*Source: Economic Survey, 2007-08, Government of Jharkhand* **Newly created districts*


**Fig. 8.2: Agro-climatic region-wise districts of Jharkhand**

*Source: Environmental Assessment and Environmental Management Framework for Jharkhand Opportunities for Harnessing Rural Growth (JOHAR)*

**Table 8.3: Rainfall pattern in Ranchi District**

| Rainfall | Normal RF (mm) | Normal Onset (specify week and month) | Normal Cessation (specify week and month) |
|---|---|---|---|
| SW monsoon (June-Sep) | 1090 | 2nd week of June | 1st week of October |
| NE monsoon (Oct-Dec) | 103 | 2nd week of October | 3rd week of December |
| Winter (Jan-Feb) | 38 | - | - |
| Summer (Mart-May) | 99 | - | - |
| Annual | 1323 | - | - |

*Source: Agriculture Contingency Plan for District: Ranchi*

Neori GP falls under agro-climatic Zone VII (Eastern Plateau and hill region) and subzone Region-I (Central North eastern Plateau) as depicted in Table 8.3. The average annual rainfall received is 1323 mm.

Ranchi consists of tabular landmass. The entire area is full of Tanrs and Dons on account of rolling topography. Tanrs are the comparatively highlands and Dons are lower lands.

### 8.3.2 LAND USE AND CROPPED AREA

The distribution of land under different uses is as listed in Table 8.4 below. Almost 49.2% of the total area comes under fallow land and another 11% is barren and uncultivable land.

**Table 8.4: Land Use distribution**

| Land Use | Area (Ha) |
|---|---|
| Non – Agriculture Use | 52.5 |
| Barren and Uncultivable land | 44.8 |
| Permanent Pastures and Grazing Fields | 0 |
| Land Under miscellaneous trees and crops | 28.6 |
| Culturable waste land | 18.5 |
| Current Fallows | 25.92 |
| Fallow Land and Other Fallows | 120.6 |
| Net Sown Area | 97.98 |
| **Total Land** | **388.98** |

*Source: Department of Agriculture, Government of Jharkhand,*

### 8.3.3 CROPPING INTENSITY

Cropping intensity is expressed as the ratio of gross cropped area to Net cropped area.The cropping intensity across the Gram Panchayat is shown in Fig. 8.4 lists the percentage distribution of single crop, double crop and multiple crops. Most of the land is mixed cropped.

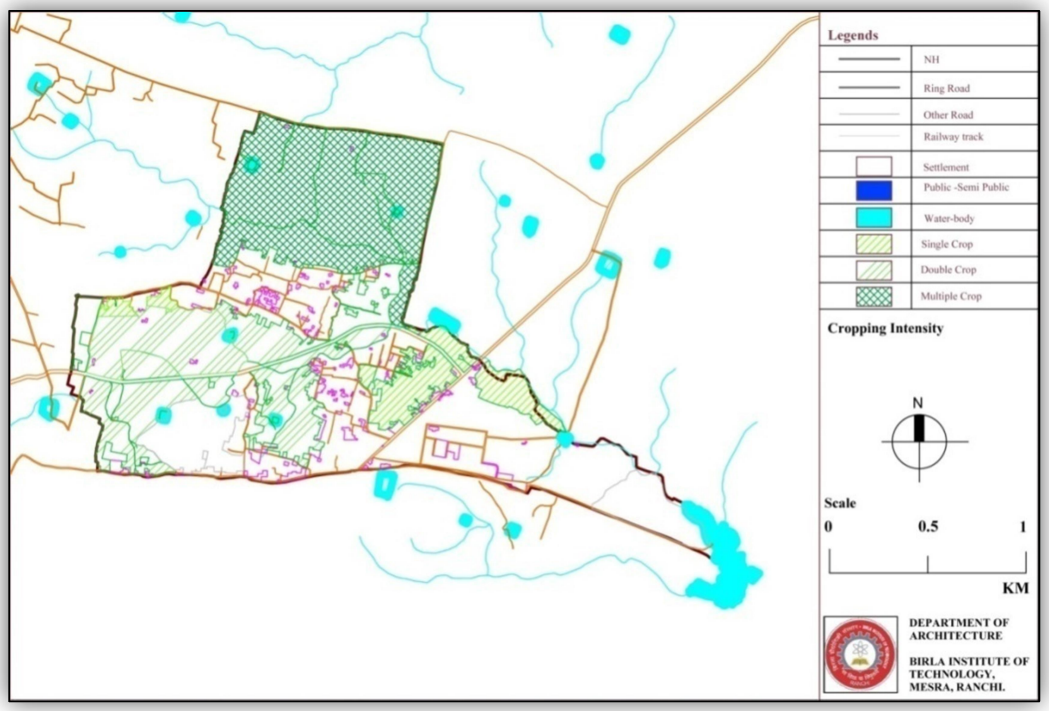



**Fig. 8.4: Cropping Intensity**

*Source: Department of Agriculture, Government of Jharkhand and based on survey; prepared by the BIT Mesra Team*

### 8.3.4 CROPPING PATTERN

The lower lying area provides suitable condition for paddy cultivation. The higher elevations provide condition for orchards and cultivation of pulse and vegetables. During the monsoon season paddy is cultivated and during rabi season wheat is cultivated in the same fields. Most of the time mixed cropping is practiced, where pulses, mustard or groundnut are cultivated along with paddy and wheat.

Based on primary survey, the proportion of land under cultivation of different crops in different seasons is shown in Table 8.5. It can be seen that wheat in Rabi season, while Rice and Maize in Kharif season dominates agricultural produce. Most of the Maize is produced in the backyard farms of farmers. Fig.8.5 shows agriculture lands used for paddy cultivation, while Fig.8.6 depicts agricultural lands used for gram and groundnut cultivation and Fig. 8.7 displays agricultural lands used for wheat and mustard cultivation.

**Table 8.5: Cropping Pattern**

| Crop | Area | |
|---|---|---|
| | Area cultivated in Kharif Season (Ha) | Area cultivated in Rabi Season (Ha) |
| Paddy | 132 | |
| Maize | | |
| Gram | 2.6 | |
| Groundnut | 132 | |
| Wheat | | 18 |
| Mustard | | 37 |
| *Source: Department of Agriculture, Government of Jharkhand* | | |

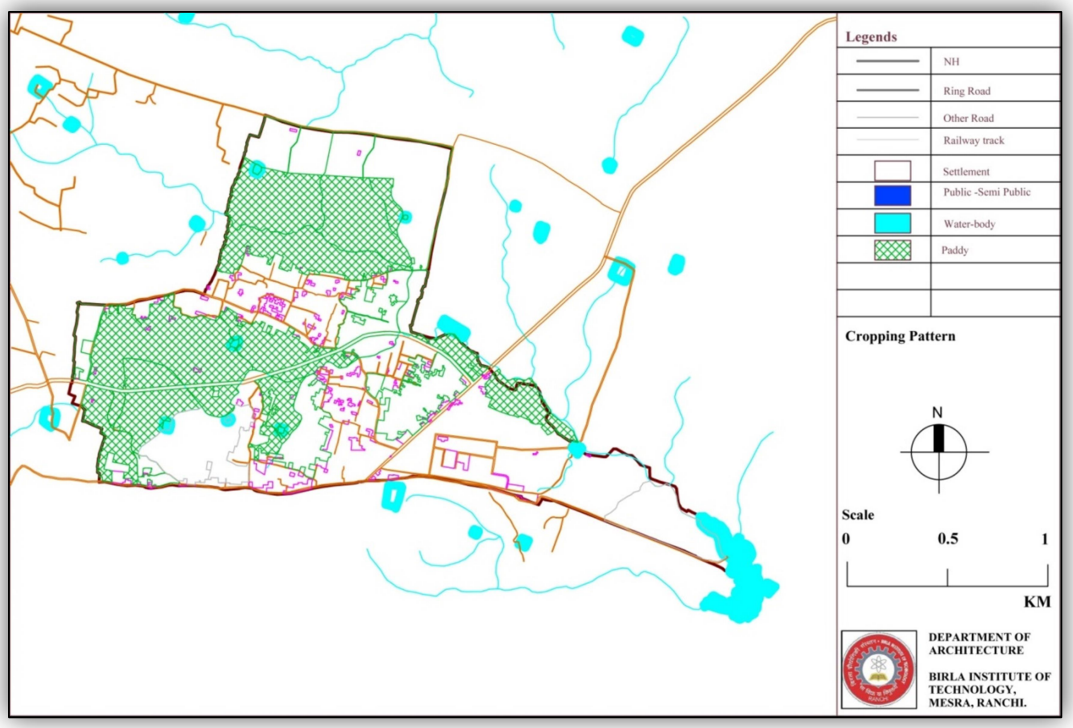



**Fig. 8.5: Agriculture lands used for Paddy Cultivation**

*Source: based on survey; prepared by the BIT Mesra Team*

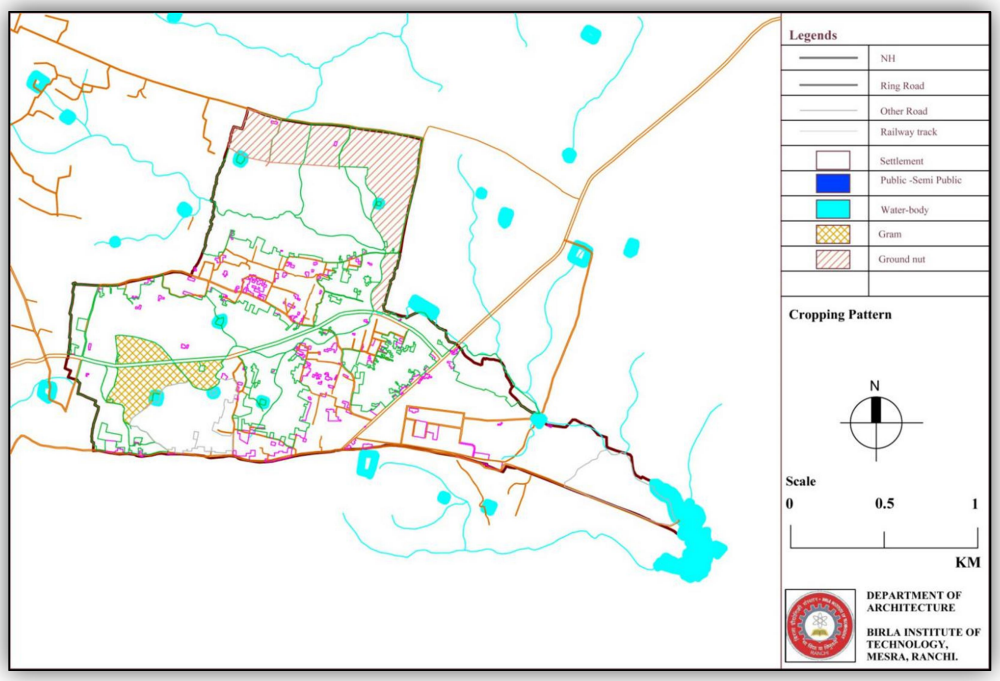



**Fig. 8.6: Agriculture lands used for Gram and Groundnut Cultivation**

*Source: based on survey; prepared by the BIT Mesra Team*

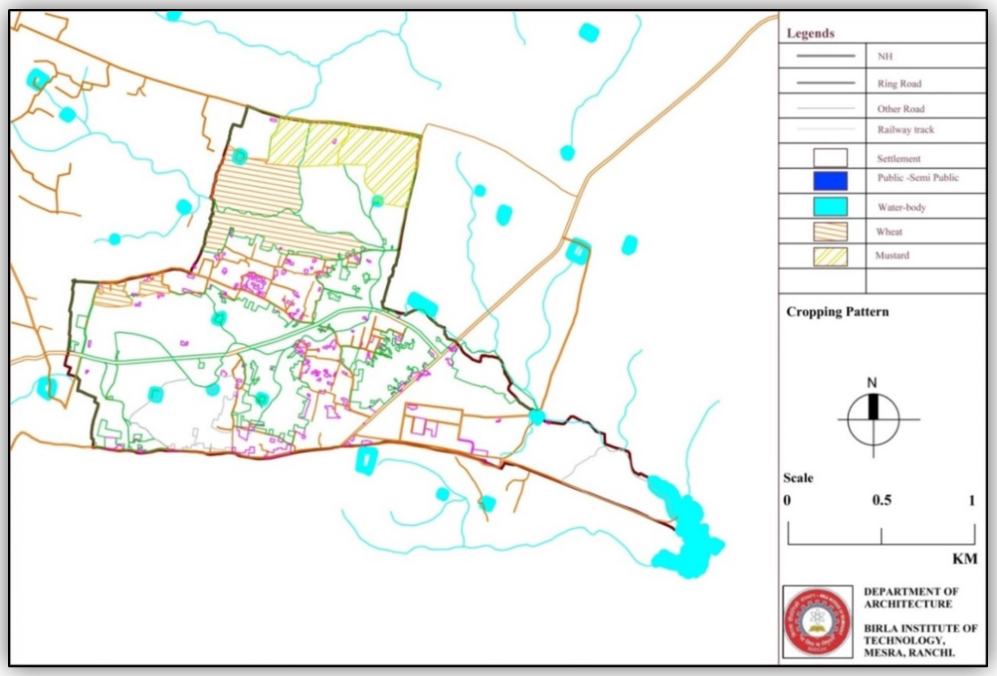



**Fig. 8.7: Agriculture lands used for Wheat and Mustard cultivation**

*Source: based on survey; prepared by the BIT Mesra Team*

### 8.3.5 YIELD RATE OF PRINCIPAL CROPS

In Neori Gram Panchayat, Paddy /Rice has the maximum crop yield of 2400 Kg/Ha followed by Maize and Wheat with crop yield of 2300 and 2000 Kg/Ha respectively. The major crops produced and its yield rates are listed in the Table 8.6 below.

**Table 8.6: Yield Rate of Principal Crops**

| Crop | Yield Rate( Kg/Ha) In Neori GP | Yield rate of Major crops in Jharkhand (2017-2018)* |
|---|---|---|
| Paddy | 2400 | 2957 |
| Maize | 2300 | 2025 |
| Wheat | 2000 | 1974 |
| Ground Nut | 830 | 713 |
| Gram | 1000 | 1101 |
| Mustard | 950 | 713 |

*Source: Agriculture Department, Ranchi, State Agricultural Management & Extension Training Institute, SAMETI, Jharkhand**

### 8.3.6 PRODUCTION OF FRUITS, VEGETABLES AND FLOWERS

The major fruits, vegetables and flowers produced in the GP are listed below in Table 8.7. Watermelon is cultivated in 6-8 Ha. Most of the vegetables are produced in backyard farms (locally known as *Baadi*). Other vegetables cultivated in the GP are Tomato, Ginger, Garlic, Chilli, Brinjal, Cabbage and Cauliflower.

**Table 8.7: Land under Vegetable and Fruit Cultivation**

| Fruit | Area |
|---|---|
| Watermelon | 8 Ha |
| **Vegetable** | **Area** |
| Potato | 8 Ha |
| Onion | 20 acres |

*Source: Neori GP records*

Most of the vegetables produced are sold in the weekly market in Vikas. There is lack of cold storage space in the GP or nearby, resulting in rotting of vegetables which are not sold in the weekly Market.

## 8.4 IRRIGATION

### 8.4.1 PERCENTAGE OF IRRIGATED AND UN-IRRIGATED LAND

As per the data collected by primary and secondary sources (Mission Antodaya Survey), 25 % of the total land in Neori Gram Panchayat is irrigated. The total cultivated land area is 97 hectares, as shown in the Table 8.8.

**Table 8.8: Irrigated and Unirrigated land**

| Irrigated Land/ Un-irrigated land | Area (Ha) |
|---|---|
| Total Irrigated Land | 97 |
| Total Un-irrigated land | 194 |
| Total Cultivated land | 97.98 |
| **Total area** | **388.98** |

*Source: Neori GP records*

The percentage of Irrigated to Cultivated Land is 99%. The crops in Kharif season are completely dependent on monsoon rains, whereas during Rabi seasons agricultural fields are irrigated using ground water, majorly from wells and occasionally by tube wells (in the farms using drip irrigation system).

### 8.4.2 SOURCE OF IRRIGATION

Groundwater extracted from open wells and hand pumps are the major source of irrigation. The numbers and land dependency percentage are as shown in Table 8.9.

**Table 8.9: Irrigation Sources**

| Source of Irrigation | Numbers | Dependency of agricultural land in percentage |
|---|---|---|
| Well | 86 | 99% |
| Ponds | 7 | Nil |
| Hand Pump | 31 | Nil |
| Tube well | 15 | 6-8 Ha (where drip irrigation system is used) |

*Source: Neori GP records*

### 8.4.3 Minor Irrigation Scheme and Irrigation

**Potential Created and Potential Utilized in GP**

The government schemes on irrigation, benefitting the farmers in GP are listed below

- 50 percent subsidy on irrigation equipment's is being availed by many farmers.
- 90 percent subsidy for drip irrigation system has been availed by 15 farmers.
- 90 percent subsidy for deep boring for land parcels of 5 acre or more has been availed by few farmers.

### 8.4.4 Location of Ponds

There are 7 ponds in the GP of which 2 ponds are public ponds as shown in Fig 8.8. All the cultural and social activities are held in theses 2 ponds. There are no bunds or steps in these 2 ponds resulting in occasional mishaps. These public ponds hold religious and cultural importance for the residents. There is a need to improve the precincts of these ponds and construct earth bunds and steps around.

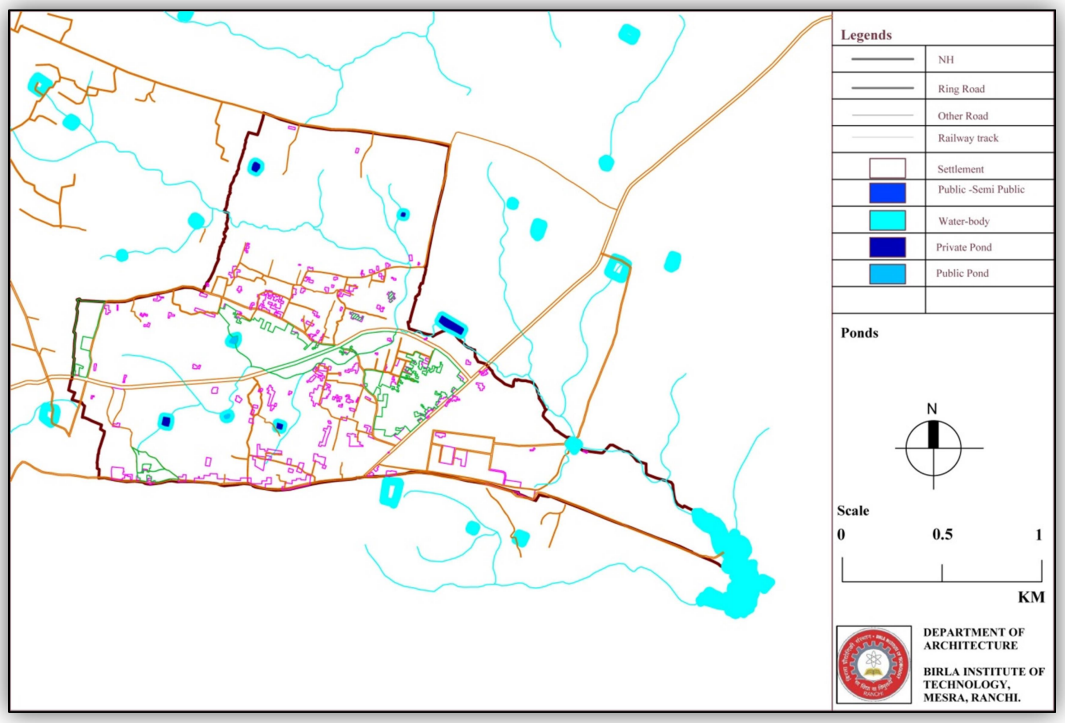



**Fig. 8.8: Location of Ponds**

*Source: based on survey; prepared by the BIT Mesra Team*

## 8.5 LIVESTOCK

As per the primary survey, 58% households have at least one kind of livestock and only 3.0% people use their livestock – chicken and goat only, for commercial purpose. The primary study also indicates that other animals owned by the families in the GP are dog, duck. None of the household owns horse and donkey. The type of livestock available is shown in Table 8.10.

**Table 8.10: Number of Livestock**

| Livestock | Number |
|---|---|
| Cow/ Buffalo | 112 |
| Chicken | 274 |
| Goat | 177 |
| Ox | 15 |
| Other animals | 02 |
| **Total** | **580** |

*Source: Primary survey*

In the context of commercial use of livestock, 268 households have chicken, while only 12 families use goats for business. A total of 13 families use cow milk for selling. Most of the milk produced is sold in the village itself, only little amount of 80-90 liters extra produce is sold in the milk collection centers.

The Table 8.11 elaborates the number of HHs using livestock for commercial purposes. Merely 13 HHs sell cow milk, and it is observed that maximum number of 268 HHs keep chicken for mercenary usage. The Table 8.12 details the number of chicken livestock used for commercial purpose against the number of households. Around 240 households keep chicken in single digit numbers. There are 5 families who own 10 chicken, while 2 households keeping more than 50 chickens.

**Table 8.11: Number of Livestock for Commercial Purposes**

| Livestock | Number of Households |
|---|---|
| Cow milk used for selling | 13 |
| Chicken | 268 |
| Goat | 12 |

*Source: Primary survey*

**Table 8.12: Number of Chicken Livestock for Commercial Purposes**

| Number of Chicken Livestock | Number of Households |
|---|---|
| 1 | 50 |
| 2 | 40 |
| 3 | 24 |
| 4 | 33 |
| 5 | 62 |
| 6 | 9 |
| 7 | 8 |
| 8 | 13 |
| 9 | 1 |
| 10 | 5 |
| 12 | 10 |
| 13 | 2 |
| 16 | 2 |
| 18 | 1 |
| 20 | 1 |
| 21 | 1 |
| 23 | 1 |
| 25 | 2 |
| 30 | 1 |
| 56 | 2 |
| **Total** | **268** |

*Source: Primary survey*

## 8.6 PROGRESS AND STATUTORY AND MODIFIED RATION SHOPS IN THE GP

The Neori GP has ample number of ration shops - a total of 7 statutory ration shops are present located in the residential pockets. The location of statutory ration shops is marked in the Fig 8.9 below.

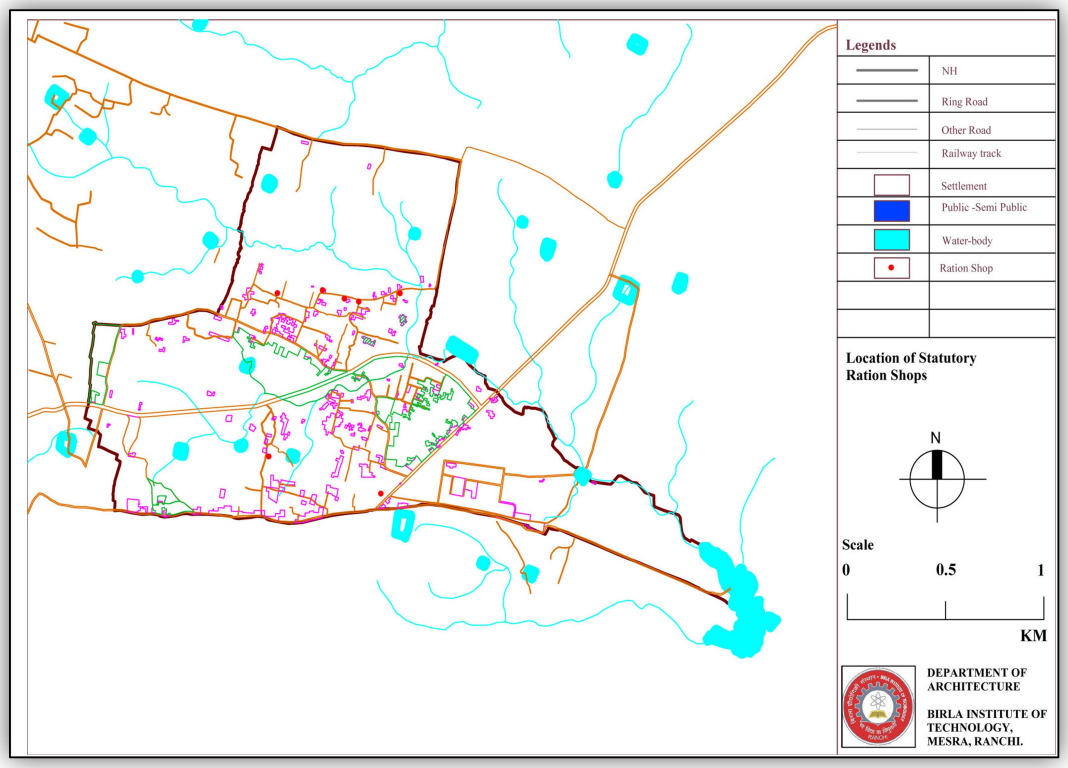



**Fig 8.9: Location of Statutory Ration Shops**

*Source: based on survey; prepared by the BIT Mesra Team*

## 8.7 LAND RECLAMATION AND LAND CONSERVATION DATA IN GP

The various projects under different schemes and programs and its impact area, under various headings towards land reclamation and conservation is listed below in Table 8.13.

**Table 8.13: Schemes and Programs in Neori GP**

| | |
|---|---|
| Drought Proofing | No physical infrastructure, but farmers can avail an insurance scheme under which, during droughts, insured farmers will receive Rs 21,945/acre (2016-2020) |
| Flood Control and Protection | Not required |
| Land Development | Nil |
| Rural Connectivity | 8430 ft |
| Water Conservation & Water Harvesting | Nil |
| Works on Individual land, IAY houses etc. | 32 |

*Source: Neori GP office records*

## 8.8 MAJOR CONTINGENCIES GP IS PRONE TO

Ranchi district is prone to droughts as evident from the Table 8.14. Most of the Kharif produce are dependent on Monsoon rain, whereas Rabi produce are dependent on groundwater mostly extracted through open wells. Even though the district receives ample amount of rainwater, there is lack of any provision for rainwater harvesting.

**Table 8.14: Major Contingencies**

| Major Contingencies GP is prone to | Regular | Occasional | None |
|---|---|---|---|
| Drought | √ | | |
| Flood | | | √ |
| Cyclone | | | √ |
| Hail storm | | | √ |
| Heat wave | | √ | |
| Cold wave | | √ | |
| Frost | | √ | |
| Sea water intrusion | | | √ |
| Pests and disease outbreak | | √ | |

*Source: Agriculture Contingency Plan for District: Ranchi*

## 8.9 RECOMMENDATIONS

- As the cropping pattern is dominated by paddy, the crop diversification will consider less water intensive crops (or efficient irrigation methods), keeping in view the soil characteristics and nutrient status. Crop rotation with pulse crops should be promoted to the extent possible.
- Majority of the production happens in kharif as 82% of rainfall is from monsoon. Despite of good amount of rainfall, the surface water is not available for irrigation in crucial periods due to inadequate storage facilities. The rainfall in the state also has witnessed significant changes in last decade. Late arrival and early cessation of monsoon is a common phenomenon in the state. Monsoon breaks occur in mid-June. Dry spells of 2-3 weeks and even more usually occur in July-August. Failure of *Hathia* rain (late September-early October) is observed once in four years, which adversely affects grain growth of standing crops besides affecting the establishments of second crop in winter season. As a general practice in the state, paddy being the most preferred crop, its sowing season during kharif keeps on extending even to late August /early September depending

on the rainfall factors there by affecting the yield of the crop. The district of Ranchi has been declared as drought hit in the year 2016.

- As discussed above, the GP is majorly dependent on rainfall for agriculture. As the district receives ample rainfall, provisions should be made to conserve rainwater during monsoon and utilize it during dry seasons. The rainwater can be harvested by
  - Ground water recharge
  - Retention ponds

Considering the present area under cultivation, 726000 – 1210000 cubic metre of water is required during Rabi season.

- A series of 6 connected retention ponds should be constructed along the natural gradient to store rainwater.
- The size of retention ponds to be constructed is 150m x 160m x 3.5m incurring a cost of 4.5 lakh per pond.
- The location of retention ponds as shown in Fig 8.10has been deduced from the elevation map, suitable rain water harvesting zone map and existing agricultural land use.
- During Monsoon, in case of overflow of retention tanks, surplus water can be released in Getalsud dam, through the network of connected streams.
- Construction of open wells to be promoted as it will help in ground water recharge.
- A Cold storage for vegetables and milk need to be proposed, which can be used by the farmers from Neori and surrounding villages as well.

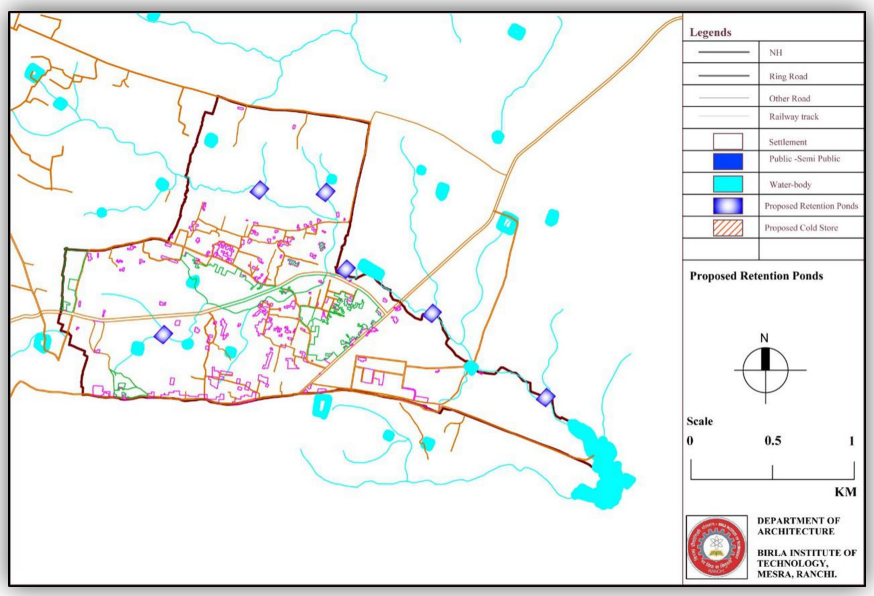



**Fig. 8.10: Proposed location of Retention Ponds and Cold Storage**

*Source: based on survey; prepared by the BIT Mesra Team*

For a 10 MT cold storage unit, the room dimensions required would be 5.5m x 3.5m x 3.5m. The refrigeration capacity shall be 30000 Btu/hr.

The produce from agriculture and industries would be categorized into groups of fruits and vegetables; meat and fish products; milk and milk products; and other products of the kind. The cost of a 10 MT cold storage varies depending upon the location, the availability and demand of materials in the market. The investment shown here is for a 10 MT cold storage which as per norms is estimated to cost nearly Rs.15,00,000/- except the cost of land. (*Source: https://www.agrifarming.in/cold-storage-project-report-cost-and-subsidy#:~:text=The%20cold%20storage%20room%20basic,to%20be%3A%2043%CB%9AC.)*

The assistance provided by the government could be such that 60% of the expenses should be borne by the beneficiary and 40% of the expenses would be given as subsidy to the beneficiary.

- Subsidized Construction of Green Houses should be promoted in the GP.
- Agro-industries should be promoted for employment creation, socio-economic development and income generation.

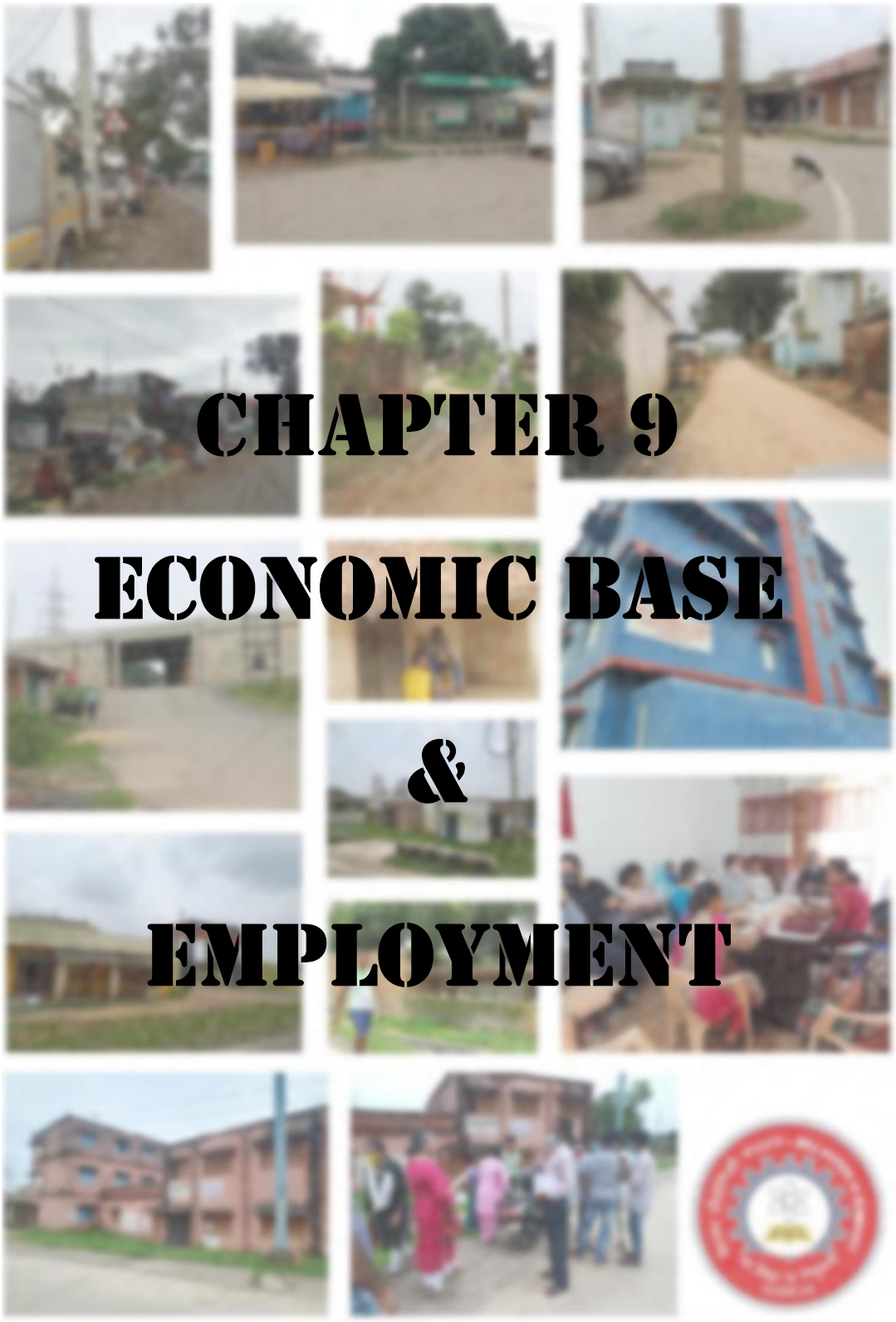
Agro Processing Industries including Primary Food Processing Units: Paddy being the main food crop of Neori, food processing activity, a few rice millsare proposed. Products from rice like rice flakes, puffed rice, popped rice, canned rice and other products can be encouraged. Maize is also grown seasonally, so provisions can be provided for maize products like cornflakes, corn starch, corn flour, cornmeal,Corn gluten, etc. Groundnut processing can be encouraged in the GP, as large production is there. Groundnut to be used as snack, healthy groundnut oil processing and manufacturing unit can be established as small scale business. Tomato is widely available, so it can be encouraged to produce tomato products like tomato sauce, puree, juice, ketchup etc.

- Spices Processing Enterprise:

Turmeric, Ginger, Garlic and Chilies plantation can be promoted to produce spices.

- Livestock Based Processing Activity: Poultry and cattle Farming

The Milk based processing activity (viz., khoa, paneer and butter) is missing in the GP. The entire milk is sold in the nearby Mesra GP or Ranchi town. The provision of Milk Chilling Centers would positively contribute in greater concentration of milk based processing activities under unorganized manufacturing sector in the GP. Poultry farming does exist and can be encouraged with adequate provisions.



# CHAPTER 9

# ECONOMIC BASE

# &

# EMPLOYMENT

# CHAPTER 9: ECONOMIC BASE & EMPLOYMENT

## 9.1 INTRODUCTION

### 9.1.1 ECONOMIC ASPECT OF PANCHAYATI RAJ

For Panchayati Raj system, devolution of funds has often been questioned as transfers made through the State Finance Commissions were meager in most States. Hence the local bodies in the Panchayati Raj system have faced problems to undergo development process due to lack of funds. Moreover ground survey suggests common reason for low utilization was with respect to delay of funds trickling down from the Centre to State and finally to Panchayats. Further, the administrative difficulties to obtain sanctions and approvals add to the delay. Limited capacity and shortage of staff at various tiers in the PRI delays the sanctioning and approval. The inordinate delay in many funding schemes increases project cost which ultimately remains incomplete. The Fourteenth Finance Commission (FFC) took note of it and substantially increased the grants to the local bodies for the period year 2015-16 to 2019-20 (Table 9.1). The grants provided are intended to be used to support and strengthen the delivery of important basic public services. The 15th Finance Commission has further increased the grants in its interim report for year 2020-21 for rural and urban bodies.

To respond to these long standing crises, Centre for Policy Research, Delhi in its report on Devolution of Union Finance Commission Grant to Panchayats, published in 2019, proposed a Transparency Portal to address monitoring release of grant, budgeting, planning, maintaining time series information, providing updates and monitoring outcomes. This proposal may ease all bottlenecks of development at GP.

**Table 9.1: Trends in Fourteenth Finance Commission (FFC) Grants to Rural Local Bodies for the State of Jharkhand (all figures in crore)**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | Total grant |
|---|---|---|---|---|---|
| Total grant | 1022.53 | 1178.63 | 1360.62 | 1382.12 | 6046.74 |
| Basic grant | 903.36 | 1044.45 | 1208.24 | 1632.59 | 5442.07 |
| Performance grant | 118.57 | 134.18 | 152.38 | 199.53 | 604.67 |

*Source: Basic Statistics of Panchayati Raj Institutions, 2019, MoPR, Government of India*

## 9.2 FINANCIAL POSITION OF NEORI GRAM PANCHAYAT (GP)

The trends in the structure and growth of Neori GP's income and expenditure is shown in Table 9.2

**Table 9.2: Trends in the Structure and Growth of Neori GP Income and Expenditure**

| | 2016-17 | 2017-18 | 2018-19 | 2019-20 | Total |
|---|---|---|---|---|---|
| Total receipt | 1658619 | 1017608 | 6870161 | 2870388 | 12416779 |
| Total expenditure | | | | | 9383406 |

*Source: Neori GP panchayat office records*

## 9.3 STATUS OF CENTRAL AND STATE FUNDED SCHEMES IN NEORI

In 2015-16, Yojana Banao Abhiyan for the first time gave opportunity to the Gram Panchayats for preparing the holistic development plan for the panchayats. The recommendation of the 14th Finance Commission for Gram Panchayats also became a driving force for the preparation of the plans. Last year, Jharkhand was the first state to prepare Gram Panchayat Development Plan (GPDP) based on convergence. To make GPDP a success in the state, a massive media campaign was launched at the state level followed by mid media activities in the districts, block and panchayat level.

Under Pradhan Mantri Gramin Awas Yojna (PMAY), the Neori Gram Panchayat witnessed an increase in both- the scale of the program in terms of the physical target and increase in the allocated amount of money for building each unit of housing. For the year 2016- 19, the number of houses completed under the scheme is 4,53,770. The total number of houses built in Neori GP under the scheme is 41 for which Rs. 42,40,000/- has been disbursed.

Pradhan Mantri Gram Sadak Yojana (PMGSY) aims to provide connectivity by way of all-weather roads (with necessary culverts and cross-drainage structures, which are operable throughout the year), to the eligible unconnected habitations in the rural areas. In the first phase habitation with a population of 1000 and more and a population of 500 and more were to be connected. In the second phase, realizing the presence of the sparse population in the hilly and forest areas, special provisions were made to connect habitations with 250 plus population. Under this scheme over the last five years the GP has experienced a total construction of 1750 feet of metalled road

and 4000 feet of paver brick road. Under Mukhya Matri Gram Sadak Yojaya (MMGSY) 600 feet of metalled road has been constructed.

National Rural Livelihoods Project (NRLP) is a component of NRLM which is carried out in some selected intensive blocks. Till now, a total of 31415 villages have been targeted at the state level under NRLP, in which a total of 2, 24,793 SHGs are actively working. In Neori GP, 32 SGH with 319 members are working. Number of households mobilized into SHGs is 138. Total number of SHGs having access to bank loans is 07. Percentage of households mobilized into SHGs is 11.22 % (http://missionantyodaya.nic.in).

Mahila Kisan Sashaktikaran Pariyojna is a sub component under NRLM, which identifies women worker as an integral part of the agricultural sector. Under the ambit of this program, 8 project proposals covering 27,630 households of 22 blocks in the 10 districts of Jharkhand have been sanctioned since its inception. Under the same in Neori GP has not been benefitted as no projects have been conceived in Kanke block of which Neori Gram Panchayat is a part.

The MGNREGS seeks to enhance the livelihood security of the households in the rural areas by guaranteeing at least 100 days of wage employment in a year to every household whose adult members volunteer to do unskilled manual work. This scheme works have been undertaken in almost all the gram panchayats across the state. In the current financial year, 56,960workers have been provided with employment, generating about 31.08 lakh mandays. In this period a total of 52.99 lakh active jobcard holders and 91.48 lakhs worked under the program. For Neori GP, MNREGS have employed 1522individual with 702 job cards.

Apart from generating employment, this program also aims at creating valuable rural assets which can provide recursive livelihood opportunities for the rural populace. Since its inception, a total of 4801 assets have been already completed, while, the construction of 1734 assets are in the on-going process in Kanke block of which Neori Gram Panchayat is a part.

Under Pradhan Mantri Kisan Samman Nidhi, the Government of India has initiated a program to facilitate all farmers with a yearly income support of Rs. 6,000/- . The support was mainly aimed in procuring various inputs to ensure proper crop health and appropriate yields. The number of beneficiaries targeted across India is approximately 120 million. In Neori GP, the scheme has reached to only 125 farmers.

Mukhyamantri Samagra Gram Yojana (MMSGY) was initiated in the year 2016-17 in Jharkhand to bridge the differences of development in the urban and rural areas of the state by creating urban like infrastructure, so that the urban services, amenities and opportunities can be easily reached at the door step of the rural households. The program targets to strengthen almost all the sectors like rural governance, sustainable energy, rural industry and market, production system, skill development, education and healthcare through technology led innovations like ICT, smart grid, digitized marketing and web connect. Some of the good practices that have been tried in this financial year are shifting of post office accounts to bank accounts and DBT, expediting Aadhaar seeding process, SHG women mate, GeoMGNREGA, NREGA Sahayata Kendra and digitization of the department.

The State Government of Jharkhand is planning to launch a new scheme called “ARYA" to attract rural youth in agriculture. The objective of the ARYA scheme will be to promote the green revolution in the state. Under the ARYA scheme, the state government will attract rural youth in agriculture by making them skilled and make the state self-dependent in agriculture.

The Government of Jharkhand has initiated many welfare schemes for the people of the Gram Panchayat including Student Scholarship Scheme, Tribal School Scheme, Birsa Awas Yojana, and various other schemes for Scheduled Caste, Schedule Tribes and Citizen Protection Schemes.

The Fifteenth Finance plan has allocated Rs. 7, 48,658 in 2020-21 as the first phase allotment for the Neori GP.

**Table 9.3: Development works planned in Neori GP over the last five years**

| Sl. No. | Work Name | Number of Works in the category (ongoing or completed) | Financial Year | Work Category |
|---|---|---|---|---|
| **1** | Construction of IAY | 21 | 2015-2016 | Works on Individuals Land (Category IV) |
| **2** | Construction of Well | 08 | 2015-2016 | Works on Individuals Land (Category IV) |

| | | | | |
|---|---|---|---|---|
| **3** | Road Cons. Work | 02 | 2016-2017 | Rural Connectivity |
| **4** | Construction of Shed (Cow, Hen, Pig, Goat) | 21 | 2016-2017 | Works on Individuals Land (Category IV) |
| **5** | Construction of Dobha | 08 | 2016-2017 | Works on Individuals Land (Category IV) |
| **6** | Construction of Well | 01 | 2016-2017 | Works on Individuals Land (Category IV) |
| **7** | Construction of Nadep Tank | 20 | 2017-2018 | Works on Individuals Land (Category IV) |
| **8** | Construction of IAY | 10 | 2017-2018 | Works on Individuals Land (Category IV) |
| **9** | Construction of Well | 01 | 2017-2018 | Works on Individuals Land (Category IV) |
| **10** | Construction of Shed (Cow, Hen, Pig, Goat) | 03 | 2017-2018 | Works on Individuals Land (Category IV) |
| **11** | Cons. of Irrigation Well | 06 | 2017-2018 | Works on Individuals Land (Category IV) |
| **12** | Work of TCB Village | 01 | 2018-2019 | Works on Individuals Land (Category IV) |
| **13** | Land Levelling | 03 | 2019-2020 | Works on Individuals Land (Category IV) |
| **14** | Construction of TCB | 06 | 2019-2020 | Works on Individuals Land (Category IV) |
| **15** | Construction of Field Bund | 06 | 2019-2020 | Works on Individuals Land (Category IV) |

| | | | | |
|---|---|---|---|---|
| **16** | Construction of BSBRAAY | 03 | 2019-2020 | Works on Individuals Land (Category IV) |
| **17** | Construction of PMAY-G House for Individuals | 07 | 2018-2019 | Works on Individuals Land (Category IV) |
| | | 13 | 2019-2020 | |
| **18** | Soak Pit for individual household | 10 | 2020-2021 | Rural Sanitation |
| **19** | CM Harit Gram Yojna | 05 | 2020-2021 | Works on Individuals Land (Category IV) |
| **20** | Construction of Field Bund | 05 | 2020-2021 | Works on Individuals Land (Category IV) |
| **21** | Construction of Rain water harvesting at Neori Gram Panchayat Bhawan | 02 | 2020-2021 | Water Conservation and Water Harvesting |

*Source: Review of Previous years GPDP – Neori GP and current updates from survey.*

The Table 9.3 above shows around 150 development projects planned by the Gram Panchayat of Neori in support of the State Government. This further establishes the urge of the local self-government to bring about changes in the infrastructure and improving the Quality of Life of the people here. But due to various reasons, some of the projects are still in the conceptual stage and are yet to take wings.

## 9.4 EMPLOYMENT SCENARIO OF NEORI GP

The employment scenario of the Gram Panchayat is lopsided with nearly 96 per cent of household involved in non-agricultural activity. This is due to the influence of capital city in the proximity. In Neori GP out of total population, 1938 were engaged in work activities. 32.77 % of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 67.23 % were involved in Marginal activity providing livelihood for less than 6 months (Table 9.4). Total workers in the village are 1938 out of which 1545 are male and 393 are female. Total main workers are 635 out of which female main workers are 549 and male main workers are 86. Total marginal workers of village are 1303 (Census 2011). The maximum main earning member of the household is involved with casual manual

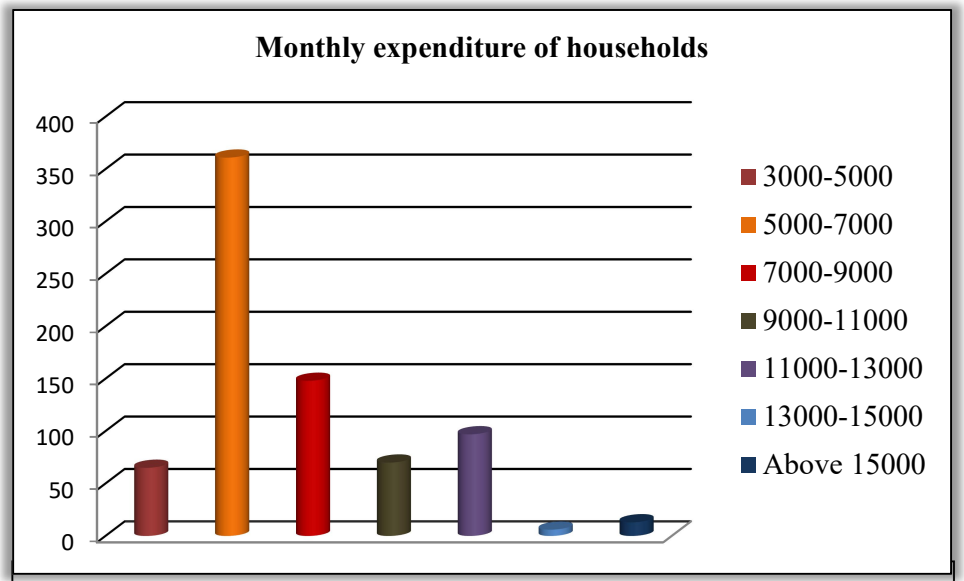
services of various kinds and serves as one of the main labour bases of the city. Hence nearly 16 per cent of the household has a recorded income of more than Rs. 5,000 as per government records. Percentage of households supported by village based Agricultural Extension Workers is only 16.26%. Number of households supported by village based Livestock Extension Workers is 250 (http://missionantyodaya.nic.in).

**Table 9.4: Neori Working Population ---Census 2011**

| | Total | Male | Female |
|---|---|---|---|
| Total Workers | 1938 | 1545 | 393 |
| Main Workers | 635 | 549 | 86 |
| Main Workers Cultivators | 49 | 44 | 5 |
| Agriculture Labourer | 39 | 22 | 17 |
| Household Industries | 17 | 13 | 4 |
| Other Workers | 530 | 470 | 60 |
| Marginal Workers | 1303 | 996 | 307 |
| **Non-Working Persons** | **4969** | **2155** | **2814** |

*Source : PCA 2011*

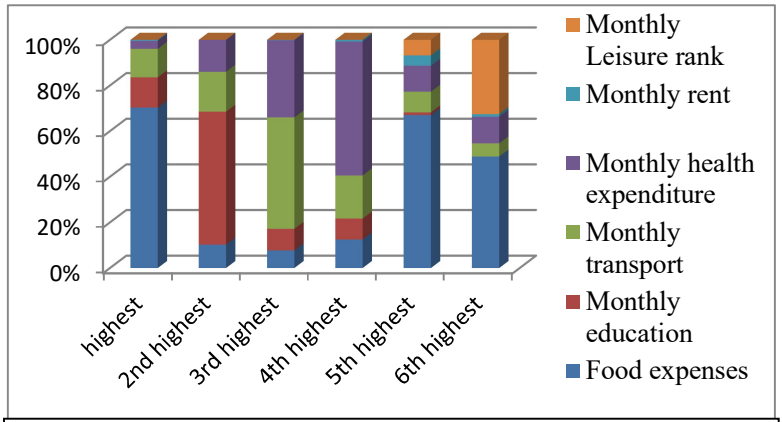
**Fig. 9.1: Showing monthly expenditure of households in (Rs.)**




*Source: Household survey 2020 carried out by BIT Mesra*

The survey of households carried out clearly shows the picture of utter poverty where largest chunk of over 50% population has a monthly household expenditure ranging between Rs. 5000 to below Rs. 7000 (Fig. 9.1). Considering an average household size to be around 5, average expenditure per person in these households is a somewhere around Rs. 1000/- which is much below the national average of Rs. 1,446 (NSO 2017-18).

**Fig. 9.2: Distribution of monthly expenditure amongst households as per actual spending under different heads**




*Source: Household survey 2020 carried out by BIT Mesra*

The Fig. 9.2 shows 70% of the households have Food expenses as main means of expenditure, 55% of household has monthly education as second highest means of expenditure. 50% households have transport expenditure as third highest means of expenditure and 65 % households has substantial expenditure in health related issues. Considering more than 50 % of the population has only Rs. 1000/- as monthly expenditure and 70 % has food as the main source of expenditure, it establishes the fact that more than half of the population is not able to meet two ends meet. The poverty index hence is presumed to be high in this GP. This is substantiated by data in Table 9.5 to 9.9.

Only 5 no. of families in the entire GP has taken any form of loan which re-establishes the purchase power of the residents.

**Table 9.5: Distribution of Household based on monthly income of the highest earning member**

| GP | Less than Rs 5000 per month | Between Rs. 5,000 and 10,000 | Rs. 10,000 or more |
|---|---|---|---|
| Neori | 962 | 116 | 66 |

*Source: SECC data of Neori GP [114696 ] of MoRD*

**Table 9.6: Distribution of Household based on main source of income**

| GP | Cultivation | Manual casual labour | Part-time / full time domestic service | Rag picking | Non-agricultural own account enterprises | Begging / charity / Alms | Others (Business etc.) |
|---|---|---|---|---|---|---|---|
| Neori | 21 | 1103 | 5 | 0 | 1 | 1 | 13 |

*Source: SECC data of Neori GP [114696 ] of MoRD*

**Table 9.7: Distribution of population based of variable source of employment**

| GP | Government sector | Private sector | Factory worker | Small Scale Industries | MGNREGS Male | MGNREGS Female |
|---|---|---|---|---|---|---|
| Neori | 20 | 500 | 200 | 9 | 831 | 691 |

*Source: Neori GP office records*

**Table 9.8: Distribution of Household by high landholding**

| GP | Household owning 2.5 acre or more of irrigated land with atleast one irrigation equipment | Household owning 5 acres or more of land irrigated for two or more crop seasons | Household owning 7.5 acre or more of irrigated land with atleast one irrigation equipment | Household having kisan card with a credit limit of Rs.50,000 and above |
|---|---|---|---|---|
| Neori | 1 | 4 | 1 | 1 |

*Source: SECC data of Neori GP [114696 ] of MoRD*

**Table 9.9: No. of households and persons registered under National Rural Employment Guarantee Act**

| Village | Number of registered | | SCs | | STs | | Others | | Male | Female |
|---|---|---|---|---|---|---|---|---|---|---|
| | Household | Persons | Household | Persons | Household | Persons | Household | Persons | | |
| Neori | 710 | 1522 | 34 | 70 | 237 | 501 | 439 | 901 | 831 | 961 |

*Source: NIC-DRD informatics Centre*

### 9.4.1 ACADEMIC QUALIFICATION OF THE INHABITANTS OF NEORI GP

As per 2011 Census, a large section of population is non-working. The academic attainment of the Neori GP residents presents a sordid state of affair. The Sarva Shikha Abhiyan of Government of India has also not reached to nearly 26.5% people in the GP. The segment of people with no education, below primary, primary, middle, secondary and higher secondary educational attainment is nearly 96% (Fig. 9.3). This segment contributes to manual and casual labour for the city and its suburbs having monthly income of zero to Rs. 10,000/-.

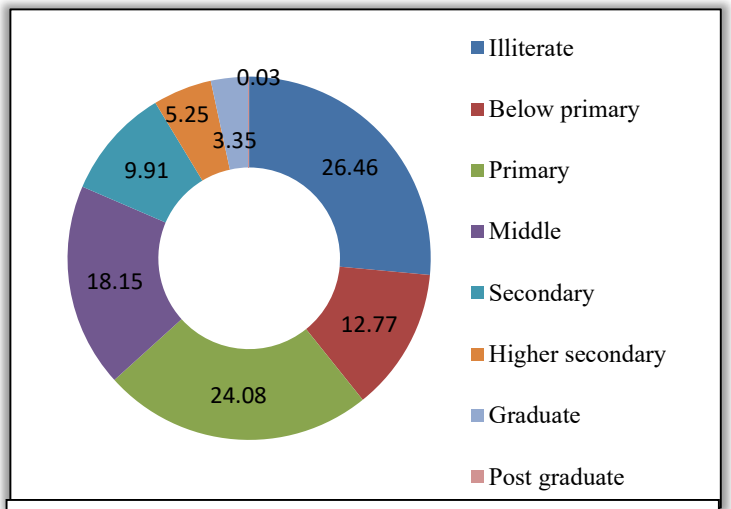



**Fig. 9.3: Percentage of Academic Attainment**

*Source: SECC data Neori GP [114696] of MORD*

About 55% of this population is within the age group of 16 to 55 years. Survey and discussion with stakeholders suggests that majority of this population has an intention to learn new skills and engage in good-income practices. Since a significant percentage of this population is talented and are willing to learn if resources are available, specialised training to these may pave the path for better economy infiltration to the GP. For this, Skill Development Centres and Agricultural Processing Centres are proposed to be open in the GP level to make these stakeholders "Atmanirbhar".

### 9.4.2 Interdependency of hinterlands and Neori GP for economic activities

The Neori GP is surrounded by the villages of Mesra, Gobarhappa, Hundur, Chari, Haldama, Hujir, Oyna, Chandewe, Dubliya,, Banhara, Murum and Ral along its vicinity. These villages supply labour and consumables to Neori GP as a result of which the economy of the GP trickles down into these villages. The bi-weekly haat that is organized in the GP has lots of contributions from these villages around. A small section of labours, working in commercial establishment in Neori GP, travel from these villages.

With the formulation and implementation of Gram Panchayat Spatial Development Plan for Neori GP, there are possibilities of economic and physical migration to the GP from its hinterlands. With subsequent creation of work opportunities, survey of many families will travel to settle in the GP for better livelihood opportunities from hinterlands which are spaced beyond 50 km from the GP. Survey of commuting labours in Ranchi suggests that a large section travelling on bicycles comfortably ride upto 50 kms for search of livelihood and they are more of landless labours willing to relocate.

## 9.5 CONCLUSIONS OF ECONOMIC AND EMPLOYMENT SCENARIO IN NEORI GP

The state of affairs in Neori GP in terms of Economy and employment is grim and needs immediate attention for a holistic development. The key findings include:

- The economic condition of the Neori GP is extremely fragile and maximum percentages of the population are well below economic level. Inhabitants need to be exposed to multiple source of income.
- The educational attainment level is extremely low which leads to maximum inhabitants being employed as labours and casual workers. This needs attention and hence needs to create a base for skilled personnel in the GP.
- During unforeseen circumstances like lockdown, the labours in tertiary sectors are left without any source of income.
- Very few opportunities exist within the GP for families to earn better living and quality of life which needs to be addressed and create a congenial environment to earn and sustain.
- Capitalisation from Government grants and schemes is low and hence needs consorted effort from PRIs to allow development through available schemes.
- Ratio of successful utilisation and completion of government projects is low as is seen from number of projects being planned and sanctioned but not implemented.
- Physical and social infrastructure exhibits a miserable state of affair and needs immediate attention to improve the Quality of Life.
- Panchayat's own source of revenue is nil and has to depend completely on government's grants for its sustenance and development. Hence the Panchayat should be empowered with own revenue apart from government grants to promote development of the GP in desired direction.

# CHAPTER 10

# STRATEGIES

# &

# RECOMMENDATIONS

# CHAPTER 10: STRATEGIES & RECOMMENDATIONS

## 10.1 THE GRAM PANCHAYAT VISION AND STRATEGIC GOALS

The 73rd and 74th Constitutional Amendment Acts, 1992, gave Constitutional status to the third tier of government at the sub-State level, thereby creating the legal conditions for local self-rule or Panchayati Raj. These Amendments sought to bring about greater decentralization, increasing the involvement of the community in planning and implementing schemes and, thereby, increasing accountability. The 73rd Constitution (Amendment) Act 1993 was enacted to promote economic and social development in the rural rectors in India laying emphasis on Panchayati Raj Institutions (PRIs) as institutions of local governance. The decision tree for the process starts at Gram Sabha (GS) which discusses the development work plans of the GP which ultimately manifests through Gram Panchayat Spatial Development Plan (GPSDP). Formulation of GPDP improves efficiency of public services as projects get executed through the elected representatives.

Gram Panchayat Spatial Development Strategy helps to give direction, to identify and create opportunities, to create consensus, to mobilise resources, and finally, to achieve results. Keeping in mind of preparing NeoriGram Panchayat (GP) competitive and at par with the national level Gram Panchayats, a vision needs to be created and achieved by 2030. In order to gear up the development process of Neori, strategies needs to be made both at block level and sectoral level.

### 10.1.1 TOWARDS 2030

The next 10 years will see significant growth of the panchayat in terms of population and infrastructure. The benefits of this growth must be fairly distributed and must adhere to directions obtained from analysis. Through this, goals forstrengthening the development process of the GP may be met and Neori GP by 2030 may be:

- Spatially distributed and equipped physically and infrastructurally to accommodate future growth.
- Planned for the future thereby promoting integration through sustainable access to panchayat resources of all kinds.
- Integrated industrial, commercial and social sectors which provide access to a range of panchayat resources.
- Model GP for others to take the path
- Economically competitive on both district and statearena.

### 10.1.2 STRATEGIC GOALS

The panchayatvision mandates five main goals for the Spatial Development Strategy which may be listed below as:

- **To promote planned growth of all the villages under Neori GP in an integrated approach**: This includes promoting growth in the GP so as to accommodate future migration from the hinterlands.
- **To create more efficient and productive rural areas through the growth and development of agriculture**: The aims to consolidate and promote future agriculture based opportunities.
- **To rapidly reduce existing disparities in infrastructure and facilities**: This aim is to improve infrastructure servicesat GP level with an aim towards 2030.
- **To improve the overall quality of the rural environment through best practices**: This aims at judicious and sustainable use of rural resources so as to improve local economic development.
- **To address the issue of employment through creation of opportunities**: This aims to create avenues for employment and making the inhabitants of the GP 'Atmanirbhar'.

## 10.2 DEVELOPING NEORI AS AN INTEGRATED GP

To formulate 'Gram Panchayat SpatialDevelopment Strategy' for Neori GP, first step would be to strengthen the different sectors through minimising the critical backlogs found through analysis. The broad strategies in this regard may be:

- To foster development at the regional level by strengtheningthe GP;
- To strengthen the panchayat level infrastructure in terms of basic services and sustainability;
- To integrate policies of central government with these strategies so as to achieve national objectives;
- To create more economic opportunities for the current residents and the future in line with the Ranchi Master plan so that the GP grows up as an important growth node.

## 10.3 STRENGTHENING OF INDUSTRIAL SECTOR

The general strategies to reinforce the above sector may be enumerated below as:

- To establish small industrial area as innovation and incubation center withbasic industrial infrastructure like connectivity, uninterrupted power, water, therein;
  - To encourage private sector participation in infrastructure upgrading;
  - To provide special incentives to encourage establishment of small scale industries and household industries specially related to agro-processing ;
- To create an eco-system for supporting rural-nano and growth-nano enterprises;
- To provide special package necessary for startups of household industries;

## 10.4 STRENGTHENING OF PHYSICAL INFRASTRUCTURE

As has been clarified in the analysis water supply, power supply, sanitation facilities, solid waste management and education needs augmentation of resources in Neori GP. Strategies for strengthening of these sectors which also induce development include:

- To convert all kutcha houses into pucca houses with permanent roof;
- To convert all roads in the GP to all-weather roads up to access points of individual houses and establishments;
- To provide LED street lighting throughout all metaled roads of Neori GP at a spacing of 25 m;
- To augment all possible resources to supply tapped water to households, establishments of proper purification plant for the same and regulating the same by use of water-meter.
- To augment all possible resources to supply uninterrupted power to householdsand establishments. Electrification of all houses and establishments needs to be taken up immediately.
- To augment all possible resources for improving sanitation facilities of every household in the GP along with commercial and public establishments through appointment of Green Ambassadors focusing on overall environmental development and improved personal hygiene thereby arresting cases of diarrhea, malaria and dengue. This can be achieved through construction of IHHL under Government of India's Swachh Bharat Mission (SBM-Gramin);
- To create awareness amongst the community about sanitation and its importance for a healthy life, especially the areas that needed the toilets most, so as to promote healthy sanitation practices. For the same, the school children may be educated to reach out to their family. An intensive campaign is proposed to be launched in schools for this purpose.

- To ensure recycling of bathroom water (through its reuse in kitchen gardens), separation of biodegradable and non-biodegradable waste at source and transportation of only the remaining waste to the waste disposal system;
- To make proper waste disposal mandatory for public premises, restaurants, dhabas, small stalls, chicken & meat centers, etc.;
- To discourage use of plastic and promote 'Plastic Free Gram Panchayats' by phasing out plastics;
- To encourage shop owners to use paper bags rather than plastic bags, for packing consumables;
- To make it mandatory for landlords to construct separate bathing and toilet facilities for their tenants;
- To declare the Neori GP as Open Defecation Free (ODF) after successful completion of sanitation program;
- To make provision for management of waste by construction of Solid Waste Processing Centre (SWPC) along with maintenance of organic vermin-compost unit. This will help in providing employment to a portion of unskilled labors;
- To provide designated parking zone in large congregation areas like market, religious assemble places, playgrounds / social gathering space;
- To upkeep Panchayat infrastructure with proper annual maintenance and cleaning;
- To make provision for drainage cleaning in the GP area once in six months.
- To plan for leadership for evening and morning nazardari (Vigilance/Patrolling);
- To rehouse the existing road-side vegetable market into a proper permanent market at selected location;
- To propose an LPG distribution center integrating it with Common Service Center;
- To plan for creating future competitive environment and enhanced ICT applications by providing free Wi-Fi facilities to the residents of the Panchayat.

## 10.5 STRENGTHENING OF SOCIAL INFRASTRUCTURE

The GP of Neori is extremely deficient in terms of academic attainment and related infrastructure. Moreover, the healthcare facilities, religious institutions have very weak infrastructure. Hence, strategies for strengthening of these sectors which also induce development include:

- To plan for adequate level of basic health facilities for 24 hours in Primary health center and to provide ambulance services for the residents;
- To plan for adequate tree plantations along all roads within GP;
- To plan for upkeep and maintenance of all religious places and create ample spaces for congregation;
- To rebuild the bazzar area beside Panchayat Bhawan so as to permanently house the vendors in the structure having the cold storage beside;
- To identify and provide infrastructural strengthening of an open space to convert it to a public playground with proper furniture in the GP area. A stage will be created at the end to the open space to provide for social functions;
- To create four children park amongst settlements at different locations in GP;
- To create library and computer training center within the proposed common service center so as to benefit the future generation;
- To improve literacy of all the inhabitants of the Neori GP through Sarva Shiksha Aviyan. For the same, intermediate camps of short duration has to be organized in school buildings / Anganwadi beyond working hours to make 100 % of population literate.
- To plan for alternate routes of resource generation for school including donations from local donors, builders and CSR initiatives for provision of school furniture, school uniform and school kids achievement.
- To strengthen educational institutions and promote education at Panchayat level so as to improve the educational attainment level of all stakeholders along with creation skill development and training center so as to develop a pool of skilled workforce;
- To utilize state government schemes like Student Scholarship Scheme, Tribal School Scheme for establishing schools and supporting meritorious students;
- To plan for compulsory implementation of midday meal schemes;
- To plan for provision of every household with Pradhan Mantri Ujjwala Yojana so as to ensure that 100 % of the households, Anganwadis have LPG gas connection.
- To plan for provision of Anganwadiwith a model kitchen, storeroom, utensils, toilets, water filters, electric connection and wall paintings and to organize regular visits of field supervisors so as to maintain the standards.
- To plan for celebration of birthdays of children whose birthdays fall within a particular month, so as to attract the children community.
- To plan for Child-friendly Gram Panchayat through
    - Vaccination and immunization program,
    - Making mandatory school enrolment,

- Attendance of teachers and students in school,
- Reducing dropout rates in school
- Distributing free sanitary pads to improve girl child hygiene,
- Maintaining good nutrition level of children.

## 10.6 STRENGTHENING OF AGRICULTURAL AND ANIMAL HUSBANDRY SECTOR

The future revitalization of Neori GP largely depends on benefaction of resources in agricultural sector. The analysis reveals that there is large agricultural production of paddy, maize, wheat, ground nut gram and mustard in the GP. To capitalize on this production and channelize these resources, the following strategies are proposed:

- To adopt micro planning and project development in agriculture to convert single agricultural land into double;
- To convert un-irrigable land area of 45 ha to irrigable land to boost agricultural production;
- To provide more source of irrigation so as to increase cropping intensity from 126% to 200 %;
- To add to value addition, fodder development, market linkage infrastructure at Panchayat level through linking of SGH entrepreneurs;
- To give 100 % farmers coverage under Pradhan Mantri Fasal Bima Yojna;
- To mobilize formation of a Federation of Farmers at Panchayat level so as to increase household income from enterprise activity;
- To develop Agricultural Service and Processing Center, Ware house for cold and dry storage, Sorting and Grading centers;
- To provide government grants and technical support for projects supporting poultry development, goatary development and other livestock extension services in individual plots;
- To provide milk collection centers, milking routes and chilling center for supporting residents with cattle breeding. The “Chilling Center” is proposed to be integrated with the Cold Storage.

## 10.7 FUTURE LANDUSE CONTROL AND DEVELOPMENT STRATEGY

The GP of Neori because of its close proximity to capital city, NH 33 and Ring Road is already experiencing unorganized growth of residential and commercial establishments without proper provision of infrastructure. G+3 complexes are propping up as isolated developments showing signs of future trajectories of growth.

Hence there needs to be a strict plan for abiding by landuse control, sanctioning process and byelaws so as to control future developments. The GP with the support of government should also start and implement SWAMITVA which will provide the residents of Neori GP with ownership of their residential houses so as to empower them and open up opportunities.

**Construction in Neori GP Area**

Any plot of above 100 sq. m and a subdivision plan above 1000 sq. m area, needs approval from sanctioning authority before construction on site. The plan should strictly abide by development control and building regulations as laid down by Jharkhand Building byelaws 2016 and should have signature of a registered Architect having Council of Architecture (COA) active membership and a structural engineer. The Mukhiya of the Neori GP may be delegated powers to release the plans duly signed by him / her, but only after the approval of the Kanke BDO in respect of any building plan on The Architect and Junior Engineer from Rural Engineering Department of the State Government shall on technical matters assist Neori GP. This segment will be reviewed in 2030 relooking into the development scenario and fresh mechanism of sanctions maybe relaid if necessary.

## 10.8 FUTURE ECONOMIC REVITALISATION OF PANCHAYAT

Analysis of the current situation, leads us to the path of strengthening development in the GP. The development initiatives are required to start at the grass-root level and should be meant to serve and benefit the entire GP population. Neori panchayat should provide all kinds of inputs and services for establishment of social enterprise and create opportunities for employment of rural youth, farmers and women. Since the strength of the GP lies largely in work force participation through supply of semi-skilled and unskilled labour as well as agricultural activities in some pockets, there is a need to orient these two sectors for better performance and orientation towards skilled development. As a step towards “Atmanirbhar” Panchayats, Neori GP needs to plan for:

- Capacity building of PRI representatives and recruitment at village level;
- Establish incubators to potential enterprises for employment generation;
- Revenue generation at Panchayat through earning, training and rentals;
- Provision of civic services to the people and employing people there-in;

- Providing job opportunities to the resident through Green Ambassador program and Solid waste management program;
- Providing jobs in incubation center, small scale startups, Agricultural service and processing center, Ware house for cold and dry storage, Sorting and grading centers.
- Providing and installing 'Solar still' units at every Below Poverty Level (BPL) household for production of distilled water for commercial uses. The provision can be made through government subsidy through which a BPL family can produce upto 1.5 liter distilled water which may be sold commercially @ Rs. 20 per liter.
- To convert adjoining lands on NH 33 to Highway service providing uses and employ inhabitants in service related jobs.

There is a need for continuous source of funds for development of Neori GP. This is made possible by leveraging financial autonomy to fulfill their new functional obligations along with the funding obtained for implementing various government projects. In order to become financially more independent, Neori GP should raise local resources along with seeking grants from government.Possible earning areas for Panchayat are:

- Earnings from Agricultural service and processing center at Panchayat
- Training and skilling of identified youth,
- Rent from common infrastructure for village like micro cold storages and food processing units.
- The Own Source Revenue (OSR) of the Panchayat should be permitted and proposed to make the areas affluent and amenable for business. The OSR may be shared with the state revenue and a considerable percentage transferred to state exchequer. OSR will include House tax, Professional tax, Business Tax, Sales tax, Income from rights of agricultural products sold, Bank interest, Sale of items, Building regulatory fees and Birth and death control fees. For the same an elaborate system is proposed consisting of staff employed for collection, accounts maintaining, disbursement, leveraging in proper hierarchy as prescribed by the government;
- Connecting with NGOs for development funds and disaster relief is also proposed as it will help in generating funds for other aspects beyond schedule like school kid development, awareness campaign, GP advertisement, ease of living etc.

By leveraging agriculture and allied sector infrastructure creation at Gram Panchayats, monetary support will be obtained to run an institution which will create further job opportunities. With able guidance from resource person at Block or District level, these offices can help in disseminating knowledge and skill to the deserving within the Gram Panchayat. This is proposed to be done through Deendayal Upadhaya Grameen Kaushalya Yojana which aims at gainful employment and career progression of candidates after skilling. The details of new structures and projects proposed for Neori GP is shown in Table 10.1.

**Table 10.1: List of new structures required to be constructed in the Neori GP**

| Sr. no | Amenities at GP level | No. required | Land area requirement | Minimum width of abutting road | Estimated cost (Rs.) | Implementing agency |
|---|---|---|---|---|---|---|
| 1 | Skill development centre | 01 | 500 sqm | 9 m | 1 crore | State Government |
| 2 | Agricultural service and processing centre | 01 | 500 sqm | 9m | 1 crore | State Government |
| 3 | Ware house for cold and dry storage. Milk storage | 01 | 1000sqm | 9m | 0.25 crore | State Government |
| 4 | Decentralized waste water treatment system (passive technology) | 01 | 1000 sqm | 9m | 0.50 crore | Central Government |
| 5 | Solid waste dumping and processing plant | 01 | 1000 sqm | 9m | 0.50 crore | PPP Mode |
| 6 | Water distribution network and | 01 | 1000 sqm | 6m | 1.50 crore | Central Government |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Overhead tank | | | | | |
| 7 | Common service centre | 01 | 1000 sqm | 6m | 1.50 crore | State Government |
| 8 | Conversion of all kuchha and dilapidated houses to pucca | 238 | On individual land | NA | 2.50 crore | Central Government |
| 9 | Reconstructi on of dilapidated bazzar | 01 | Existing land | NA | 0.50 crore | State Government |
| 10 | Installation of Street lighting system | 236 | NA | NA | 0.77 crore | Central Government |
| 11 | Installation Solar Still in BPL houses | 962 | NA | NA | 0.962 crore | Central Government |
| 12 | Installation of solar PV at Household level | 1200 | NA | NA | 12 crore | PPP mode |
| 13 | Black top road | 3 km | NA | NA | 15 crore | State government |
| 14 | Metalled road | 2 km | NA | 100 feet wide | 3 crore | State government |
| 15 | Children's park | 4 nos. | NA | NA | 0.20 crore | State government |

*Source: Framing Guidelines for Model Land Uses, Development Controls, and Service Level Benchmarks with Appropriate Enforcement Mechanisms for Rurban Clusters, Ministry of Rural Development, Government of India 2019*

## 10.9 THE PROPOSED LANDUSE PLAN

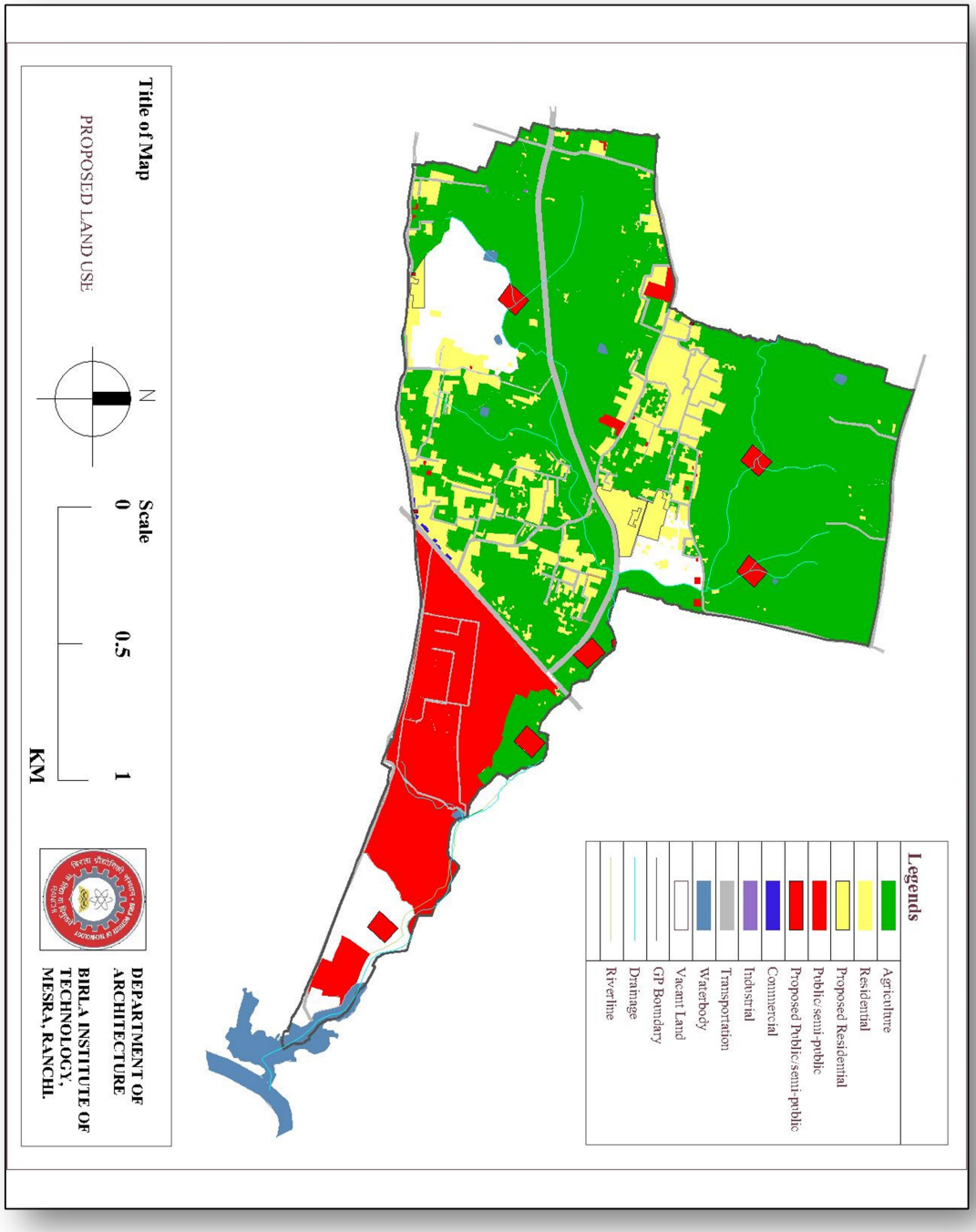



**Fig. 10.1: Proposed Landuse plan of Neori GP**

*Source: Prepared by Team of BIT Mesra*

The proposed landuse map and break up of landuse percentage proposed for Neori GP is shown in Fig. 10.1 and table 10.2.

**Table 10.2: Break-up of proposed landuse of Neori GP**

| Use | Proposed Area: Sq. m | Percentage |
|---|---|---|
| Residential | 515241 | 13.25 |
| Commercial | 1556.7 | 0.04 |
| Public/semi-public | 584175 | 15.02 |
| Waterbody | 10020.6 | 0.26 |
| Industries | 603.9 | 0.02 |
| Transportation | 122481.6 | 3.15 |
| Agriculture | 2301693 | 59.20 |
| Vacant/Fallow land | 352453 | 9.06 |

*Source: Prepared by Team BIT Mesra*

## 10.10 CAPACITY BUILDING INITIATIVES OF GOVERNMENT

Formulation of a comprehensive and holistic GPSDP calls for interaction amongst stakeholders by understanding the processes, identification of the problem and earmarking the priority areas, projectisation, implementation etc. Capacity Building & Training (CB&T) of the stakeholders is an utmost necessary step for smooth functioning of the process. UNDP defines "Capacity Building as the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time". Government of India has launched restructured Centrally Sponsored Scheme (CSS) of Rashtriya Gram Swaraj Abhiyan (RGSA) for implementation from 01.04.2018 to 31.03.2022 with the primary aim of strengthening Panchayati Raj Institutions (PRIs) for achieving Sustainable Development Goals (SDGs) with main thrust on convergence with Mission Antyodaya and emphasis on strengthening PRIs *(Basic Statistics of Panchayati Raj Institutions, 2019, MoPR, Government of India).*The Government of Jharkhand has released Rs. 98.24 crore during 2014 - 19 for Rashtriya Gram Swaraj Abhiyan with an aim for capacity building. The Government of Jharkhand through this process has outreached 2,61,084 Elected Representatives, Panchayat Functionaries and other Stake holders for Capacity Building.

### 10.10.1 Capacity Building at Neori GP

The Capacity Building Program of Neori GP should aim to:

- Form and consolidate an efficient team of the major stakeholders at various levels to launch and implement the GPSDP precisely;

- Orient towards basic training for the Elected Representatives of Panchayats;

- Raise community awareness for proposed initiatives and motivate them towards participatory planning;

- Mobilize community effectively and call for greater public ownership of flagship programs of the Government;

- Create a vision for the GP, so as to utilize the allocated funds under various schemes and create opportunities for additional resource mobilization;

- Channelize Sustainable Development Goals within the Neori GP through identification of priority areas of interventions for achieving socio-economic goals;

- Equip the GP with strong leadership marked by efficient partnership with line departments for quick implementation of the developmental schemes and program;

- Strive for better service delivery through use of e-governance and technology driven solutions at Panchayat level so as to attain administrative efficiency, improved service delivery, and greater accountability while implementing GPSDP;

- Enable GPs to come out as strong institutions of local government with all round development of their people and to empower them to provide skilled human resources for the state.

To develop an efficient Capacity Building mechanism at the Gram Panchayat level, the State Institute of Rural Development & Panchayati Raj (SIRD&PR) or designated Jharkhand State Nodal Institution should provide Training and Capacity Building of Panchayat Raj and Rural Development Functionaries at State level for the selected GPSDP. To improvise the process, the state of Jharkhand should coordinate action-oriented training and field based practices of the members including the elected representatives, functionaries of GPs, community leaders and employees of the line

departments operating at the GP level for organized planning, implementation and monitoring of GPSDP. A District Level Monitoring Cell should be constituted in Ranchi district with officers / Panchayat leaders selected from District administration / Neori Panchayat level and Block/Intermediate Panchayat level. This will help to develop an appropriate strategy and action plan for implementing various schemes of the center and state government through convergence in the GP. Taking directions from the National Capacity Building Framework (NCBF) initiated by the Ministry of Panchayati Raj, Government of India, and the following strategies are prescribed for Neori GP:

- To prepare a self-realization report to understand capacity assets and needs and define a vision and mandate;
- To engage stakeholders on every initiative of capacity development;
- To create opportunities for Panchayat elected representatives to upgrade their knowledge and skills for better performance;
- To orient key officials associated with the devolved functions to (a) better function as technical advisors and trainers and (b) respect, be more receptive and learn from the ground-level experience of elected Panchayat representatives;
- To develop mechanism to respond to the situation based on availability of budget, and managerial capability;
- To adoptfor Information and Communication Technology (ICT) through incorporation of DISHA – dashboard, MGNREGS-NREGASoft, SBM Rural, Gram Sanvad Mobile App, PRIASoft-PFMS and integrating them to daily governance integration;
- To leverage Smart Governance Services through Common Service Center;
- To improve the Gram Sabah functioning;
- To evaluate capacity development;

- To sensitize the media, political parties, representatives in the legislatures, civil society organizations and citizen.

As a step towards enabling public information of the activities of the panchayat, it is advised that the Panchayat may have its own website or link up with government website to disseminate year round information. Publication of an Annual Administrative Report every year in the local language is recommended which should contain details of meetings held, members who attended them, honorarium paid, total funds received (plan and non-plan) and corresponding expenditure, job vacancies announced and filled, the number of elected members and officials who have attended the training programs, number and kinds of grievances addressed, departmental progress, developmental works progress, etc. The Panchayat is also required to publish the action plan for the forthcoming year in the website.

## 10.11 BEYOND 2030

With the strengthening of Neori GP, the surrounding regions of GP by 2030 are also going to be benefitted in the due course of time. The next strategies would revolve around consolidating the position in the national forefront and becoming the model for GP development in the country. The strategies may be:

- To keep pace with national development including reforms in varied sectors;
- To create spatially distributed rural township to curb migration;
- To create an aura of sustainable development based on longevity of resources present and their reserves.

## 10.12 PHASING

The entire planning proposals cannot take place at a time. The desirable development is that which takes place in phases as per the varying demand of the area. So the phasing plan may incorporate:

**Phase I (2020-2025)**

**For existing areas:**

- Conversion of all kutcha and dilapidated houses into pucca houses;
- Completion of all-weather roads along main spines,

- Completion of sanitation layout and construction along main spine including construction of Decentralized waste water treatment system;

- Completion of street lighting along main spines;

- Completion of piped water supply connection along the main spine including installation of water treatment plant;

- Construction of processing plant for manure production at identified location and commencement of decentralized solid waste management system;

- Construction of toilets for 100 % households, schools, anganwadi.

- Completion of construction of Skill development center, Agricultural service processing center, Ware house for cold and dry storage (extension), Common Service Center and starting their respective operations.

- Identification and provision of playground / social gathering space for the GP with required furniture and facilities;

- Setting up of LPG distribution center;

- Construction of market place to rehouse existing market;

- Construction of parking space associated to large gathering space.

- Initiation of the process of collection and expenditure through Own Source Revenue and setting up of adequate system for proper functioning of the same.

**Phase II (2026-2030)**

**For existing areas and newly developed areas:**

- Completion of all-weather roads extending it from the main spine to individual entry points.

- Extension of sanitation layout and construction of it from the main spine to individual use points.

- Completion of street lighting extending it from the main spine to individual entry points.

- Completion of piped water supply connection extending it from the main spine to individual entry points.

- Extension of solid waste management system to new households.

- Provision of Wi-Fi facility for the entire GP.

## 10.13 SUMMARY AND CONCLUSION

The recommendations set forward through this research will prepare Neori GP for future growth on a scale higher than present one. The future of the Neori GP begins now. The investment and development activities to be made in the region over the next ten years will crucially determine their structure and functioning as well as their capacity to accommodate and manage the inevitable future growth.

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# ANNEXURE

## Annexure 1 – GPDP report for Neori GP

7/16/2020

REVIEW OF PREVIOUS YEAR GPDP
JHARKHAND >RANCHI>KANKE>NEORI(114696)

| S.No. | Sector | Works Completed | Works OnGoing | Works Not Started | Works Abandoned | Planned Budget | Expenditure |
|---|---|---|---|---|---|---|---|

| S.No. | Sector | Work Name | Work Description | Work Status | Planned Budget (Rs) | Expenditure |
|---|---|---|---|---|---|---|
| 1 | Drinking water | Aslam Ansari ke ghar ke pass Jalminar Nirman | Aslam Ansari ke ghar ke pass Jalminar Nirman | On Going | 1,50,000 | 0 |
| 2 | Drinking water | Dhadhu Munda ke ghar ke pass Jalminar nirman | Dhadhu Munda ke ghar ke pass Jalminar nirman | On Going | 1,50,000 | 0 |
| 3 | Drinking water | Habibulla ansari ke ghar ke pass jalminar nireman | Habibulla ansari ke ghar ke pass jalminar nireman | Not Started | 1,50,000 | 0 |
| 4 | Drinking water | jalminar | Saket Ranjan ke ghar ke pass jalminar nirman | Not Started | 1,50,000 | 0 |
| 5 | Drinking water | jalminar | Iltaff Ansari kr ghar ke pass jalminar nirman | On Going | 1,50,000 | 0 |
| 6 | Drinking water | jalminar | Akhtar ansari ke ghar ke pass jalmiar nirman | Not Started | 1,50,000 | 0 |
| 7 | Drinking water | jalminar | Rajesh oraon ke ghar ke pass jalminar nirman | On Going | 1,50,000 | 0 |
| 8 | Drinking water | Kayla Gorayet ke ghar ke pass Jalminar nirman | Kayla Gorayet ke ghar ke pass Jalminar nirman | On Going | 1,50,000 | 0 |
| 9 | Drinking water | khalil ansari ke ghar ke samane jalminar | khalil ansari ke ghar ke samane jalminar | Not Started | 1,50,000 | 0 |
| 10 | Drinking water | Mustafa Ansari ke ghar ke pass Jalmianr Nirman | Mustafa Ansari ke ghar ke pass Jalmianr Nirman | On Going | 1,50,000 | 0 |
| 11 | Drinking water | Panchayat Bhawan ke pass Karmali Tola mai Jalminar nirman | Panchayat Bhawan ke pass Karmali Tola mai Jalminar nirman | Not Started | 1,50,000 | 0 |
| 12 | Drinking water | Rajayakrit uttkaramitt madhaya vidayalaya Neori Urdhu kanya mai Jalminar nirman | Rajayakrit uttkaramitt madhaya vidayalaya Neori Urdhu kanya mai Jalminar nirman | On Going | 1,50,000 | 0 |
| 13 | Drinking water | rajesh oraon ke ghar ke samane jalminar | rajesh oraon ke ghar ke samane jalminar | Not Started | 1,50,000 | 0 |
| 14 | Drinking water | Shatbhori ke pass Jalminar Nirman | Shatbhori ke pass Jalminar Nirman | On Going | 1,50,000 | 0 |
| 15 | Drinking water | shukara mahto ke ghar ke samane jalminar | shukara mahto ke ghar ke samane jalminar | Not Started | 1,50,000 | 0 |
| 16 | Drinking water | Sulochana Devi ke ghar ke pass Jalminar Nirman | Sulochana Devi ke ghar ke pass Jalminar Nirman | Not Started | 1,50,000 | 0 |
| 17 | Roads | Amin Ansari ke ghar se Haji Ajibuddin Ansari ke ghar thak PCC Road nirman 250ft | Amin Ansari ke ghar se Haji Ajibuddin Ansari ke ghar thak PCC Road nirman 250ft | Not Started | 2,50,000 | 0 |
| 18 | Roads | Babby Prawin ke ghar se Nezam Ansari ke ghar thak PCC Road nirman 250 ft | Babby Prawin ke ghar se Nezam Ansari ke ghar thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 19 | Roads | Chunnilal Thakur ke ghar se Denish Munda ke ghar thak PCC Road nirman 250 ft | Chunnilal Thakur ke ghar se Denish Munda ke ghar thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |

7/16/2020

| S.No. | Sector | Work Name | Work Description | Work Status | Planned Budget (Rs) | Expendit |
|---|---|---|---|---|---|---|
| 20 | Roads | Haji Ajmuddin ke ghar se Late Navi Hussian ke ghar thak PCC Road nirman 250 ft | Haji Ajmuddin ke ghar se Late Navi Hussian ke ghar thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 21 | Roads | Khalil Ansari ke ghar se Kayum Ansari ke ghar thak PCC Road nirman 250 ft | Khalil Ansari ke ghar se Kayum Ansari ke ghar thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 22 | Roads | Manjur Ansari ke ghar se Jayull Ansari ke ghar thak PCC Road nirman 250 ft | Manjur Ansari ke ghar se Jayull Ansari ke ghar thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 23 | Roads | Masjid se lekar Harunn Ansari ke ghar thak PCC Road nirman 250ft | Masjid se lekar Harunn Ansari ke ghar thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 24 | Roads | PCC Road | Sirat nagar ke Kasinath Karmali ke ghar se Shatig khan ke ghar thak PCC Road 1000ft | Not Started | 10,00,000 | 0 |
| 25 | Roads | PCC ROAD | Sikander Ansari ke ghar se Choti Kabursthan thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 26 | Roads | PCC ROAD | Lalu gorayet ke ghar se Krisna thakur ke ghar thak PCC road 250FT | Not Started | 2,50,000 | 0 |
| 27 | Roads | PCC ROAD | GIRDHARI MAHTO KE GHAR SE BIRENDRA MAHTO KE GHAR TAK 200 PCC ROAD | Not Started | 3,00,000 | 0 |
| 28 | Roads | PCC ROAD | Shekhar singh ke ghar se Vijay Viswakarma ke ghar thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 29 | Roads | PCC ROAD | kenduwa toli mai sonu mahot ke ghar se kartik mahto ke ghar thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 30 | Roads | PCC ROAD | Tyubb Ansari ke ghar se Naya Aganbari thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 31 | Roads | PCC ROAD | Jamil Ansari ke ghar se Kayamudin Ansari ke ghar thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 32 | Roads | PCC ROAD | gram neori me sandeep pahan ke ghar se bhola pashwan ke ghar tak 200 pcc road | Not Started | 3,00,000 | 0 |
| 33 | Roads | PCC ROAD | GRAM NEORI ME KURBAN ANSARI KE GHAR SE SAFIULLAH ANSARI KE GHAR TAK 200 PCC ROAD | Not Started | 3,00,000 | 0 |
| 34 | Roads | PCC ROAD | hashib ansari ke ghar se lukman ansari ke ghar tak 260 pcc road | Not Started | 3,00,000 | 0 |
| 35 | Roads | PCC ROAD | Jitu oraon ke ghar se Nanku karmali ke ghar thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 36 | Roads | PCC ROAD | Saligram mahto ke ghar se Kartik Mahto ke ghar thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 37 | Roads | PCC ROAD | Manohar sahu ke ghar se Rajesh Verma ke ghar thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 38 | Roads | PCC ROAD | Alauddin ansari ke ghar se Shanker singh ke ghar thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 39 | Roads | PCC ROAD | Hakim Ansari ke ghar se Naimm Ansari ke ghar thak PCC road 250 FT | Not Started | 2,50,000 | 0 |

7/16/2020

| S.No. | Sector | Work Name | Work Description | Work Status | Planned Budget (Rs) | Expenditu |
|---|---|---|---|---|---|---|
| 40 | Roads | PCC ROAD | Jasmudin Ansari ke ghar se Rajak ansari ke ghar thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 41 | Roads | PCC ROAD | Talib Ansari ke ghar se yasin ansari ke ghar thak PCC road 250 FT | Not Started | 2,50,000 | 0 |
| 42 | Roads | PC ROAD | Nafrudin Ansari Ke ghar se Yasin Ansari ke ghar tak 70 Pcc Road | Not Started | 1,00,000 | 0 |
| 43 | Roads | Rabani Ansari ke ghar se Nejam Ansari ke ghar thak PCC Road nirman 250 ft | Rabani Ansari ke ghar se Nejam Ansari ke ghar thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 44 | Roads | Rajesh Verma ke ghar se Krishna Oraon ke ghar thak PCC Road nirman 250 ft | Rajesh Verma ke ghar se Krishna Oraon ke ghar thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 45 | Roads | Samsaad Ansari ke ghar se Bablu Khan ke ghar thak PCC Road nirman 250 ft | Samsaad Ansari ke ghar se Bablu Khan ke ghar thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 46 | Roads | Shabir Ansari ke ghar se Jhakir Ansari ke dhukkan thak PCC Road nirman 250 ft | Shabir Ansari ke ghar se Jhakir Ansari ke dhukkan thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 47 | Roads | Shawkatt Ansari ke ghar Roshan Ansari ke ghar thak PCC Road nirman 250 ft | Shawkatt Ansari ke ghar Roshan Ansari ke ghar thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 48 | Roads | Shoyab Ansari ke ghar se Madharsa thak PCC Road nirman 250 ft | Shoyab Ansari ke ghar se Madharsa thak PCC Road nirman 250 ft | Not Started | 2,50,000 | 0 |
| 49 | | Gurundha Gaddha se Sajudd Ansari ke ghar thak Pakki Nali Nirman 200 ft | Gurundha Gaddha se Sajudd Ansari ke ghar thak Pakki Nali Nirman 200 ft | Not Started | 1,50,000 | 0 |
| 50 | | Handwash | Nrori ke sabhi vidyalay aur anganbari mai Hand Wash unit | Not Started | 19,500 | 0 |
| 51 | | nali nirman | Moti Singh ke ghar se Shiv Mandir ke ghar thak 200 FT Nali nirman | Not Started | 2,00,000 | 0 |
| 52 | | nali nirman | Ramnath mahto ke ghar se Public school thak nali nirman 200FT | Not Started | 2,00,000 | 0 |
| 53 | | nali nirman | Suleyman Ansari ke ghar se Talib Ansari ke ghar thak Nali nirman 200FT | Not Started | 2,00,000 | 0 |
| 54 | | Nali Nirman Bondri wall | Neori ke Panchayat Sachiwalay may Nali nirman aur Bondri wall 250 FT | Not Started | 3,00,000 | 0 |
| 55 | | Shajud Ansari ke ghar se Habbibulla Ansari ke ghar thak Pakki Nali Nirman 200 ft | Shajud Ansari ke ghar se Habbibulla Ansari ke ghar thak Pakki Nali Nirman 200 ft | Not Started | 1,50,000 | 0 |
| 56 | | Shokta Gadda | Devlal thakur ke ghar ke pass Shokta gadda 10*10 *8 ft | Not Started | 85,000 | 0 |
| 57 | | Shokta Gadda | Birbal gorith ke ghar ke pass shokta gadda 10*10*8 ft | Not Started | 85,000 | 0 |
| 58 | | Shokta Gadda | kasinath karmali ke ghar ke pass shokta gadda | Not Started | 50,000 | 0 |
| 59 | | Shokta Gadda | saligram mahto ke ghar ke pass | Not Started | 50,000 | 0 |

# Annexure II – Neori GP. Mission Antodaya Report

## Ministry of Panchayati Raj

### Gram Panchayat Development Plan

**STATE: JHARKHAND > DISTRICT: RANCHI > DEVELOPMENT BLOCK: KANKE**
**GRAM PANCHAYAT: NEORI [ 114696 ]**

सत्यमेव जयते

पंचायती राज

**Villages:Neuri [ 373506 ]**

Strength | Moderate Gap | Critical Gap

| Domain | Parameter Description | Village Status | GP Status | | Suggestions |
|---|---|---|---|---|---|
| Health and Sanitation | Is the village Open Defecation Free | No | No | | Build and use toilet. Gram Sabha should penalise those who make GP unclean. |
| | Community Waste Disposal System | No | No | | MGNREGA can be used to create waste disposal system. |
| | Availability of Community bio gas or recycle of waste for production use | No | No | | |
| | Availability of drainage facilities | None | None | | Village drain planning. MGNREGA can be used . |
| | Availability of PHC/CHC Sub Centre | CHC | CHC | | |
| | Availability of Veterinary Clinic Hospital | Yes | Yes | | |
| Agriculture, allied and livelihood | Availability of Govt. Seed Centre | No | No | | |
| | % households engaged exclusively in Non-Farm activities | 30 | 30.00 | | Contact the Block Mission Manager, National Rural Liveihood Mission of your state. |
| | Availability of markets | Weekly Haat | Weekly Haat | | Farmer groups can be created to build access to markets. |
| Housing | % of household with kuccha wall and kuccha roof | 70.73 | 70.73 | | Check the waiting list for PMAY-G. |
| Land Improvement | % of Area irrigated | 99.00 | 99.00 | | Call Kisan call centre 1800-180-1551. |
| | Availability of soil testing centres | Yes | Yes | | Anyone from the village can open soil testing centre. |
| | Availability of Fertiliser Shop | Yes | Yes | | |
| Animal Husbandry | % of households supported by village based Livestock Extension Workers | 20.33 | 20.33 | | Call agriculture helpline 1094 for details |
| Drinking Water | Availability of Piped tap water | None | None | | |
| Roads | Whether the village is connected to All weather road | Yes | Yes | | |
| | Whether village has an internal cc/ brick road | No | No | | MGNREGA can be used to create internal cc/brick road. |
| | Availability of Public Transport | Auto | Auto | | |
| Rural Electrification | Availability of electricity for domestic use | 8-12 Hrs | 8-12 Hrs | | Renewable electricity equipments can be used at susidized rates. |
| Non-conventional energy | % of Household using clean energy (LPG/Bio gas) | 40.65 | 40.65 | | |
| Poverty alleviation programme | % of households mobilized into SHGs | 11.22 | 11.22 | | Contact the Block Mission Manager, National Rural Liveihood Mission of your state. |
| | % of SHGs accessed bank loans | 7 | 7 | | Contact the Block Mission Manager, National Rural Liveihood Mission of your state. |
| | % of households mobilized into Producer Groups (PGs) | 0.00 | 0.00 | | Contact the Block Mission Manager, National Rural Liveihood Mission of your state. |

ग्राम संवाद GRAM SAMVAAD | MGNREGA | PMAYG | NRLM | PMGSY | NSAP | SAGY

# Ministry of Panchayati Raj

## Gram Panchayat Development Plan

**STATE: JHARKHAND > DISTRICT: RANCHI > DEVELOPMENT BLOCK: KANKE**
**GRAM PANCHAYAT: NEORI [ 114696 ]**

सत्यमेव जयते

पंचायती राज

| | | | | | |
|---|---|---|---|---|---|
| **Poverty alleviation programme** | % of households supported by village based Agricultural Extension Workers | 16.26 | 16.26 | | Call agriculture helpline 1094 for details |
| | % of SHGs Promoted | 11 | 11 | | |
| **Vocational education** | Availability of Vocational Educational Centre | No | No | | |
| **Women & Child Development** | Availability of Aanganwadi Centre | Yes | Yes | | Contact the District Magistrate. |
| | % of children aged 0-3 years registered under Aanganwadi | 100.00 | 100.00 | | Register and send children to Aanganwadi. |
| | % of children aged 0-3 years immunised | 100.00 | 100.00 | | |
| | % of children categorized as Non-Stunted as per ICDS record | 0.00 | 0.00 | | Take your child to Village Health and Nutrition Day. |
| **Social Welfare** | Availability of Post Office | Yes | Yes | | |
| | Telephone Services | Mobile | Mobile | | |
| | Availability of Internet Cafe/Common Service Centre | Yes | Yes | | Anyone from the village can open the internet café/common service centre. |
| | Availability of Banks | Yes | Yes | | |
| | Availability of ATM | Yes | Yes | | |
| **Education** | Availability of School | Primary School | Primary School | | |
| **Public Distribution System** | Availability of Public Distribution System (PDS) | Yes | Yes | | |

सत्यमेव जयते

### Ministry of Rural Development, Govt of India

### MISSION ANTYODAYA BASELINE SURVEY 2018

**Gram Panchayat Score Card**

| | | | |
|---|---|---|---|
| **STATE:** | JHARKHAND(20) | **DISTIRCT:** | RANCHI(339) |
| **Sub District:** | Kanke(2684) | **DEVELOPMENT BLOCK :** | KANKE(3223) |
| **GRAM PANCHAYAT :** | NEORI(114696) | **GRAM PANCHAYAT SCORE :** | 47 |

LGD CODE : 114696

| Villages | Basic Parameters | Key Infrastructure Parameters | Economic Development and Livelihood | Health, Nutrition and Sanitation | Women Empowerment | Financial Inclusion | Total Score |
|---|---|---|---|---|---|---|---|
| Max Score | 4 | 64 | 4 | 18 | 7 | 3 | 100 |
| Neuri ( 373506) | 4 | 34 | 3 | 6 | 0 | 0 | 47 |
| Average Score of GP | 4 | 34 | 3 | 6 | 0 | 0 | 47 |

### BASIC PARAMETERS

| Villages | Total Population | Male Population | Female Population | Total Households | Total No. Of SHGs Promoted | Total Area(in ha) | Net sown Area (in ha) | Total Un-irrigated Land (in ha) | Total Irrigated Area (in ha) |
|---|---|---|---|---|---|---|---|---|---|
| Neuri ( 373506) | 6907 | 3700 | 3207 | 1230 | 11 | 388.98 | 97.98 | 194 | 97 |
| Total | 6907 | 3700 | 3207 | 1230 | 11 | 388.98 | 97.98 | 194 | 97 |

MGNREGA PMAYG NRLM PMGSY NSAP SAGY DDUGKY MISSION ANTYODAYA NATIONAL INFORMATICS CENTRE

**Mission Antyodaya**

**Baseline Survey 2017**

## 1. Location Parameters

| | | | |
|---|---|---|---|
| **State:** | JHARKHAND (20) | **District :** | RANCHI (339) |
| **Sub District :** | Kanke (2684) | **Development Block :** | KANKE (3223) |
| **Gram Panchayat :** | NEORI (114696) | **Village :** | Neuri (373506) |
| **PIN :** | 835217 | **Serial No/Total Village :** | 1/1 |

## 2. Basic Parameters

| S.NO | Question | Census 2011 Status | Survey 2017 Status | Max Score | Score Obtained |
|---|---|---|---|---|---|
| 1 | Total Population | 6907 | 6907 | | |
| 2 | Male | 3700 | 3700 | | |
| 3 | Female | 3207 | 3207 | | |
| 4 | Total Household | 1230 | 1230 | | |
| 5 | Total number of SHGs promoted | NA | 11 | | |
| 6 | Total Area (in hectares) | 388.98 | 388.98 | | |
| 7 | Net sown Area(In hectares) | 52.81 | 97.98 | | |
| 8 | Total Un irrigated land area (in hectare) | 44.95 | 194 | | |
| 9 | Area irrigated (in hectare) | 7.85 | 97 | 4 | 4 |
| **3. Key Infrastructure Parameters** | | | | | |
| 10 | % households engaged exclusively in Farm activitie | NA | 70 | | |
| 11 | **% households engaged exclusively in Non-farm activities** | NA | 30 | 5 | **0** |
| 12 | Availability of banks | Yes | Yes | 5 | 5 |
| 13 | Availability of bank/Business correspondent with internet connectivity | NA | – | | |
| 14 | Availability of ATM | No | Yes | 1 | 1 |
| 15 | Whether the village is connected to All weather road | Yes | Yes | 5 | 5 |
| 16 | **Whether village has an internal cc/ brick road** | No | No | 4 | **0** |
| 17 | **Availability of Public Transport** | Auto | Auto | 3 | **1** |
| 18 | Availability of Internet Café/Common Service Center | No | Yes | 2 | 2 |
| 19 | **Availability of electricity for domestic use(in Hrs)** | 4-8 Hrs | 8-12 Hrs | 4 | **3** |
| 20 | Availability of Public Distribution System (PDS) | Yes | Yes | 1 | 1 |
| 21 | Availability of markets | None | Weekly Haat | 3 | 3 |
| 22 | **Availability of Piped tap water** | None | None ( Nearest facilityMore than 10 kms) | 4 | **0** |
| 23 | Availability of Telephone Services | Both | Mobile | 2 | 2 |
| 24 | **Total no of household using clean energy (LPG/Bio gas)** | NA | 500 | 4 | **2** |
| 25 | **No of household with kuccha wall and kuccha roof** | 122 | 870 | 5 | **2** |
| 26 | Availability of Post office/Sub-Post office | Yes | Yes | 1 | 1 |
| 27 | **Availability of School** | Senior Secondary School | Primary School | 4 | **1** |
| 28 | **Availability of Vocational Educational Centre/ITI/RSETI/DDU-GKY** | No | No ( Nearest facilityMore than 10 kms) | 2 | **0** |
| 29 | Availability of Sub centre /PHC/CHC | Sub Centre | CHC | 3 | 3 |
| 30 | Availability of Veterinary Clinic Hospital | No | Yes | 2 | 2 |

# Annexure III – SECC data of Neori GP

## Ministry of Rural Development

**Socio Economic and Caste Census**

**STATE: JHARKHAND > DISTRICT: Ranchi > DEVELOPMENT BLOCK: KANKE**
**GRAM PANCHAYAT: NEORI [ 114696 ]**

### SECC ABSTRACT

| Village | Sex Ratio | Total Household | Excluded Household | Included household | Deprived Household | Zero Deprived Household | Household Owing Land |
|---|---|---|---|---|---|---|---|
| Neuri | 940 | 1144 | 521 | 1 | 584 | 38 | 165 |
| **Total** | **940** | **1144** | **521** | **1** | **584** | **38** | **165** |

### EXCLUDED HOUSEHOLDS

| Village | Households with any member earning more than Rs. 10,000 p.m | Households with three or more rooms with pucca walls and pucca roof | Households owning 2.5 acres or more irrigated land with at least one irrigation equipment | Household owning 5 acres or more land irrigated for two or more crop seasons | Households owning 7.5 acres or more land with at least one irrigation equipment | Households having Kisan credit card with the credit limit of Rs.50,000 and above |
|---|---|---|---|---|---|---|
| Neuri | 66 | 376 | 1 | 4 | 1 | 0 |
| **Total** | **66** | **376** | **1** | **4** | **1** | **0** |

### INCLUDED HOUSEHOLDS

| Village | HH without shelter | Destitute/ living on alms | Manual scavengers | Primitive tribal groups | Legally released bonded labourers |
|---|---|---|---|---|---|
| Neuri | 0 | 1 | 0 | 0 | 0 |
| **Total** | **0** | **1** | **0** | **0** | **0** |

### DEPRIVED HOUSEHOLDS

| Village | Only one room with kucha walls and kucha roof | No adult member between age 16 to 59 | Female headed households with no adult male member between age 16 to 59 | Disabled member and no able bodied adult member | SC/ST households | No literate adult above 25 years | Landless households deriving major part of their income from manual casual labour |
|---|---|---|---|---|---|---|---|
| Neuri | 23 | 14 | 33 | 1 | 130 | 167 | 545 |
| **Total** | **23** | **14** | **33** | **1** | **130** | **167** | **545** |

MGNREGA PMAYG NRLM PMGSY NSAP SAGY

# Ministry of Rural Development

## Socio Economic and Caste Census

**STATE: JHARKHAND > DISTRICT: Ranchi > DEVELOPMENT BLOCK: KANKE**
**GRAM PANCHAYAT: NEORI [ 114696 ]**

### HOUSE OWNERSHIP, LAND OWNERSHIP, MONTHLY INCOME

| | House Ownership | | | Land Owned | | | Households with Highest Earning member Income as | | |
|---|---|---|---|---|---|---|---|---|---|
| **Village** | Owned | Rented | Any Other | Total unirrigated land (in hectares) | Total irrigated land (in hectares) | Total other irrigated land (in hectares) | Less than Rs. 5,000 | Between Rs. 5,000 and Rs 10,000 | Rs. 10,000 or more |
| Neuri | 1038 | 59 | 47 | 65.50 | 184.84 | 1.00 | 962 | 116 | 66 |
| **Total** | **1038** | **59** | **47** | **65.50** | **184.84** | **1.00** | **962** | **116** | **66** |

### MAIN SOURCE OF HOUSEHOLD INCOME

| Village | Cultivation | Manual Casual Labour | Part-time or Full-Time Domestic Service | Foraging Rag Picking | Non-agricultural Own Account Enterprise | Begging/Charity/ Alms collection | Others |
|---|---|---|---|---|---|---|---|
| Neuri | 21 | 1103 | 5 | 0 | 1 | 1 | 13 |
| **Total** | **21** | **1103** | **5** | **0** | **1** | **1** | **13** |

### POPULATION

| Village | Total Population | SC Population | ST Population | Male | Female | Transgender |
|---|---|---|---|---|---|---|
| Neuri | 6304 | 101 | 1163 | 3249 | 3055 | 0 |
| **Total** | **6304** | **101** | **1163** | **3249** | **3055** | **0** |

### DISTRIBUTION OF POPULATION BY AGE

| Village | 0-5 Yrs | 6-15 Yrs | 16-25 Yrs | 26-35 Yrs | 36-45 Yrs | 46-55 Yrs | 56-65 Yrs | 66-75 Yrs | Above 76 Yrs |
|---|---|---|---|---|---|---|---|---|---|
| Neuri | 620 | 1700 | 1307 | 976 | 706 | 492 | 314 | 131 | 58 |
| **Total** | **620** | **1700** | **1307** | **976** | **706** | **492** | **314** | **131** | **58** |

### POPULATION BY MARITAL STATUS

| Village | Never Married | Currently Married | Widowed | Separated | Divorced |
|---|---|---|---|---|---|
| Neuri | 3371 | 2651 | 194 | 22 | 20 |
| **Total** | **3371** | **2651** | **194** | **22** | **20** |

# Ministry of Rural Development

## Socio Economic and Caste Census

STATE: JHARKHAND > DISTRICT: Ranchi > DEVELOPMENT BLOCK: KANKE
GRAM PANCHAYAT: NEORI [ 114696 ]

### POPULATION BY HIGHEST EDUCATION LEVEL COMPLETED

| Village | Illiterate | Below Primary | Primary | Middle | Secondary | Higher Secondary | Graduate or Above | Other |
|---|---|---|---|---|---|---|---|---|
| Neuri | 1668 | 805 | 1518 | 1144 | 625 | 331 | 211 | 2 |
| **Total** | **1668** | **805** | **1518** | **1144** | **625** | **331** | **211** | **2** |

### POPULATION BY DISABILITY

| Village | In Seeing | In Hearing | In Speech | In Movement | Mental Retardation | Mental Illness | Other Disability | Multipls Disability | No Disability |
|---|---|---|---|---|---|---|---|---|---|
| Neuri | 3 | 4 | 5 | 20 | 1 | 3 | 3 | 7 | 6258 |
| **Total** | **3** | **4** | **5** | **20** | **1** | **3** | **3** | **7** | **6258** |

# Annexure IV – 15th Finance Commission allotment to Neori GP

| क्र0 | जिला का नाम | पंचायत समिति का नाम | पंचायत का नाम | जनसंख्या | क्षेत्रफल (वर्ग कि0मी0) | जनसंख्या के आधार पर (90%) | क्षेत्रफल के आधार पर (10%) | कुल आवंटित राशि (7+8) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 110 | | | टुंडुल उतरी | 6180 | 4.52 | 656,948 | 18,793 | 675,741 |
| 111 | | | टुंडुल दक्षिणी | 5361 | 1.40 | 569,887 | 5,821 | 575,708 |
| 112 | | | कुदलोंग | 4563 | 9.06 | 485,058 | 37,670 | 522,728 |
| 113 | | | बालालोंग | 5378 | 18.54 | 571,694 | 77,086 | 648,780 |
| 114 | | | चेटे | 5704 | 16.43 | 606,349 | 68,313 | 674,662 |
| 115 | | 09 रातु | तारूप | 6163 | 17.89 | 655,141 | 74,383 | 729,524 |
| 116 | | | बानापीड़ी | 4642 | 5.30 | 493,455 | 22,036 | 515,491 |
| 117 | | | पुरियो | 5201 | 8.03 | 552,878 | 33,387 | 586,265 |
| 118 | | | डुरडुरी | 6242 | 7.26 | 663,539 | 30,186 | 693,725 |
| 119 | | | रातु उतरी | 5486 | 2.13 | 583,175 | 8,856 | 592,031 |
| 120 | | | रातु पूर्वी | 5472 | 2.17 | 581,686 | 9,022 | 590,708 |
| 121 | | | रातु दक्षिणी | 5732 | 2.19 | 609,325 | 9,106 | 618,431 |
| 122 | | | रातु पश्चिमी | 5689 | 2.15 | 604,754 | 8,939 | 613,693 |
| 123 | | | लहना | 6158 | 13.70 | 654,610 | 56,962 | 711,572 |
| 124 | | | पाली | 6011 | 10.25 | 638,983 | 42,618 | 681,601 |
| 125 | | | बाजपुर | 4756 | 9.89 | 505,574 | 41,121 | 546,695 |
| 126 | | | तिगरा | 4713 | 9.08 | 501,003 | 37,753 | 538,756 |
| 127 | | | बिजुलिया | 6087 | 8.35 | 647,062 | 34,718 | 681,780 |
| 128 | | | गुडु | 4213 | 6.81 | 447,852 | 28,315 | 476,167 |
| 129 | | | सिमलिया | 6523 | 11.00 | 693,410 | 45,736 | 739,146 |
| 130 | | | फुटकलाटोली | 9503 | 8.64 | 1,010,191 | 35,923 | 1,046,114 |
| 131 | | | सुण्डील | 4780 | 3.82 | 508,125 | 15,883 | 524,008 |
| 132 | | | चटकपुर | 4800 | 2.18 | 510,251 | 9,064 | 519,315 |
| 133 | | | पण्डरा | 3921 | 1.64 | 416,811 | 6,819 | 423,630 |
| 134 | | | कमड़े | 9444 | 8.70 | 1,003,919 | 36,173 | 1,040,092 |
| 135 | | 10 कांके | उरूगुटू | 6574 | 22.49 | 698,832 | 93,509 | 792,341 |
| 136 | | | उपरकोनकी | 5567 | 35.08 | 591,785 | 145,856 | 737,641 |
| 137 | | | काटमकुली | 5903 | 8.08 | 627,503 | 33,595 | 661,098 |
| 138 | | | मालऋंग | 7809 | 17.47 | 830,115 | 72,637 | 902,752 |
| 139 | | | मनातू | 6060 | 14.42 | 644,192 | 59,956 | 704,148 |
| 140 | | | जयपुर | 6954 | 7.99 | 739,226 | 33,221 | 772,447 |
| 141 | | | सुकुरहुटू दक्षिणी | 5301 | 5.20 | 563,509 | 21,621 | 585,130 |
| 142 | | | सुकुरहुटू उतरी | 6561 | 6.04 | 697,450 | 25,113 | 722,563 |
| 143 | | | गागी | 6683 | 10.67 | 710,418 | 44,364 | 754,782 |
| 144 | | | ईचापीड़ी | 6424 | 5.84 | 682,886 | 24,282 | 707,168 |
| 145 | | | पिठोरिया | 6550 | 4.07 | 696,280 | 16,922 | 713,202 |
| 146 | | | राड़हा | 6183 | 35.83 | 657,267 | 148,974 | 806,241 |
| 147 | | | बाड़ु | 7885 | 14.67 | 838,194 | 60,995 | 899,189 |
| 148 | | | कोकदोरो | 6335 | 12.79 | 673,425 | 53,178 | 726,603 |
| 149 | | | हुसीर | 10004 | 10.17 | 1,063,449 | 42,285 | 1,105,734 |
| 150 | | | कॉके पश्चिमी | 5144 | 5.78 | 546,819 | 24,032 | 570,851 |
| 151 | | | कॉके दक्षिणी | 5433 | 10.21 | 577,541 | 42,451 | 619,992 |
| 152 | | | कॉके उतरी | 6983 | 12.21 | 742,309 | 50,767 | 793,076 |
| 153 | | | अरसण्डे | 9582 | 9.67 | 1,018,589 | 40,206 | 1,058,795 |
| 154 | | | बोड़ेया | 5891 | 10.27 | 626,227 | 42,701 | 668,928 |
| 155 | | | होचर | 4917 | 7.46 | 522,689 | 31,017 | 553,706 |
| 156 | | | सतकनाडु | 5648 | 8.17 | 600,396 | 33,969 | 634,365 |
| 157 | | | उलातु | 5607 | 9.07 | 596,037 | 37,711 | 633,748 |
| 158 | | | चन्दपे | 6239 | 8.81 | 663,220 | 36,630 | 699,850 |
| 159 | | | डुन्दूर | 5710 | 8.59 | 606,986 | 35,716 | 642,702 |
| 160 | | | नेयरी | 6907 | 3.47 | 734,230 | 14,428 | 748,658 |
| 161 | | | चुटू | 4452 | 8.97 | 473,258 | 37,296 | 510,554 |
| 162 | | | कोदल | 6237 | 6.49 | 663,008 | 26,984 | 689,992 |