

Dissertation

On

***“An empirical analysis of Multidimensional Poverty: A case study
from Haldia Municipality, Ward No-18, Purba Medinipur, West
Bengal”***

M.Sc. Semester-IV Examination 2023



Subject: Geography

Paper: GEO496

Unit: GEO496.2

Submitted By

Supervised By

BARNALI JANA

MR. PRANAY SANTRA

ROLL PG/VUEGG19/GEO-IVS NO.-016

Assistant Professor

REG.NO. -1420264 OF 2018-19

Dept. of Geography

**HALDIA GOVERNMENT COLLEGE
VIDYASAGAR UNIVERSITY**



HALDIA GOVERNMENT COLLEGE

DEPERTMENT OF GEOGRAPHY (UG & PG)

Debhog, Purba Medinipur

CERTIFICATE

This is to certify that **MRS. BARNALI JANA**, Roll- PG/VUEGG19/GEO-IVS No. - 016 has prepared a dissertation work on "*An empirical analysis of Multidimensional Poverty: A case study from Haldia Municipality, Ward No-18, Purba Medinipur, West Bengal*" under my guidance and supervision for M.Sc. Semester-IV, Examination in Geography, 2023 as a partial fulfilment of the curriculum of Vidyasagar university in geography paper 496.2. It is further certified that this is her original work and no part of this work has been submitted elsewhere before for the awardment of any degree.

Examined
23.08.23


18.8.2023

Signature of the Supervisor
Assistant Professor
Dept. of Geography
Haldia Government College

CHAPTER -I

INTRODUCTION

1.0 Introduction:

Haldia is a bustling industrial and port city located in the Purba Medinipur district of the Indian state of West Bengal. Known for its strategic location and economic significance, Haldia plays a crucial role in trade and commerce, attracting businesses and industries. However, despite its economic vibrancy, the city grapples with the issue of multidimensional poverty, which affects a significant portion of its population. Multidimensional poverty goes beyond the conventional measurement of poverty solely based on income levels. It considers various factors that influence the quality of life and well-being of individuals and households in the area. These factors can include access to education, healthcare, housing, sanitation, clean drinking water, nutrition, and other essential services. In Haldia, as with many other urban centres in India, multidimensional poverty analysis provides a comprehensive understanding of the living conditions and disparities among different social and economic groups. It helps to identify the specific deprivations faced by vulnerable communities, including slum dwellers, informal workers, and marginalized populations. The prevalence of multidimensional poverty in Haldia highlights the urgent need for tailored interventions and development initiatives. Efforts to address this issue require a multi-pronged approach that involves the cooperation of the local government, non-governmental organizations, community leaders, and other stakeholders. By acknowledging the complexities of poverty and its various dimensions, Haldia can strive towards creating sustainable solutions that uplift the disadvantaged and promote inclusive growth.

Promoting inclusive development in Haldia will involve investing in education and skill development to enhance livelihood opportunities, improving healthcare facilities to ensure better health outcomes, and providing adequate housing and sanitation facilities to improve overall living conditions. Additionally, creating opportunities for income generation and empowering vulnerable groups through social welfare programs can play a significant role in reducing multidimensional poverty.

The journey to overcoming multidimensional poverty in Haldia will require a collective effort and a long-term commitment from all stakeholders involved. By addressing the root causes and systematically tackling the various dimensions of poverty, Haldia can pave the way for a more equitable and prosperous future for its residents.

1.2 Objectives:

The field study's core objectives revolve around uncovering concealed truths. These objectives span various dimensions:

1. Analysing the physical backdrop of the study area.
2. Investigating the dynamics of land use and land cover within the study area (Ward No-18) during the period 2000-2022.
3. Aiming to elucidate the demographic attributes characterizing the study area.
4. Delving into an examination of the fundamental urban facilities accessible in the study area.
5. Exploring the poverty status prevailing in the study area.
6. Scrutinizing the interplay between the economic and social statuses within the study area.

These diverse objectives collectively drive the field study, each contributing to the comprehensive understanding of the study area's complexities and dynamics.

1.3 Importance of the study:

The study of multidimensional poverty in Haldia Municipality is significant as it provides a comprehensive understanding of the diverse aspects of poverty experienced by the population beyond just income levels. By analysing various dimensions such as education, healthcare, housing, access to basic services, and living conditions, the study can identify the specific challenges faced by vulnerable communities in Haldia. This information is crucial for policymakers and local authorities to design targeted interventions and poverty alleviation programs that address the unique needs of different groups. Additionally, the study helps in prioritizing resource allocation, measuring progress over time, and evaluating the effectiveness of poverty reduction strategies. By focusing on multidimensional poverty, the study contributes to fostering inclusive and sustainable development in Haldia, ultimately improving the well-being and quality of life for all residents.

1.4 About the Study Area:

Ward No. 18 of Haldia Municipality represents a distinctive area within the municipality that holds its own characteristics and significance. Situated within the broader context of Haldia, this ward encompasses a unique blend of geographical, socio-economic, and demographic features. From the provided information, it's evident that Ward No. 18 has witnessed notable changes in its land use and land cover over the years. The shift from 2000 to 2022 reflects an increase in agricultural land and settlement areas, accompanied by a decrease in vegetation cover. This transformation can be attributed to factors such as population pressure, industrial growth, and urbanization.

Understanding the dynamics of Ward No. 18 is essential for crafting targeted policies that address the specific challenges and opportunities of the area. It also emphasizes the importance of maintaining a delicate balance between development and ecological well-being to ensure a sustainable and prosperous future for the residents of this ward within Haldia Municipality.

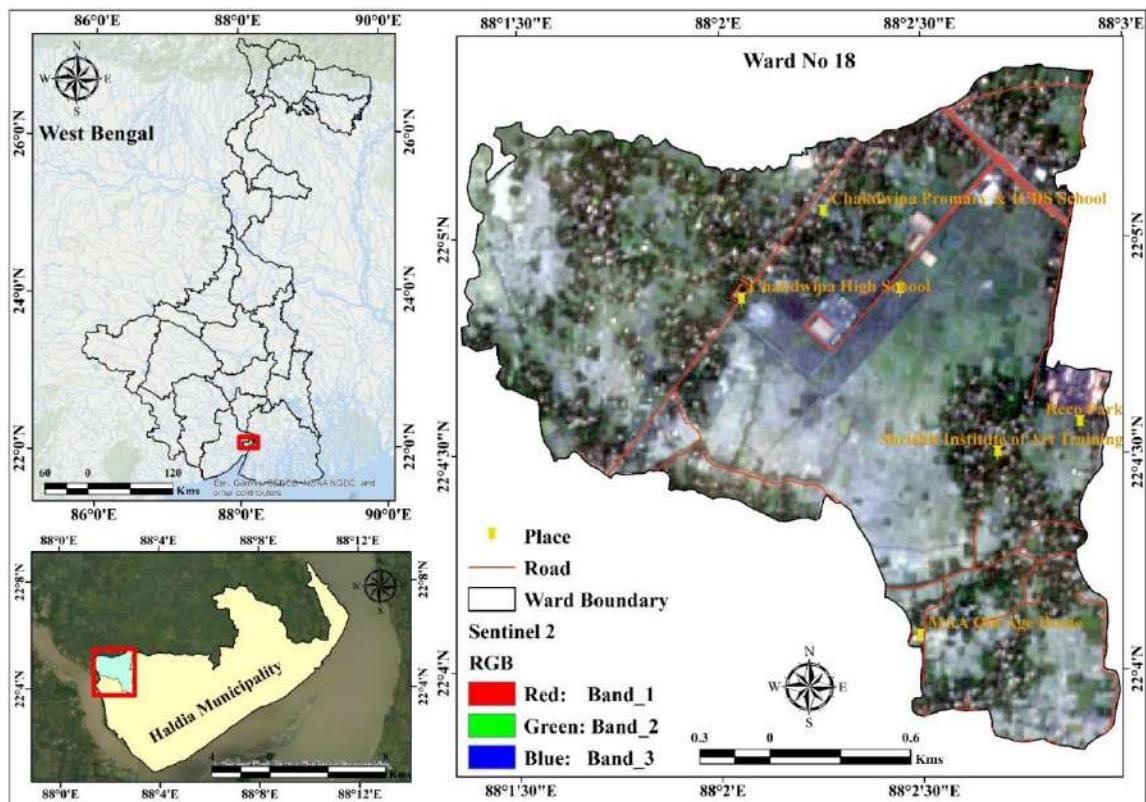


Fig No: 1.0 Location Map of Study Area

1.5 Land Use and Land Cover Change:

Land cover represents the visible surface features of land, encompassing elements like crops, grass, water bodies, broad-leaved forests, and built-up areas. The subsequent table illustrates the transformation in land use and land cover within Haldia Municipality's ward no. 18 between the years 2000 and 2022. In 2000, agricultural land comprised 59.22% of the area, with natural vegetation accounting for 34.39%. The settlement area constituted 4.28%, while water bodies occupied 2.09%. In contrast, by the year 2022, agricultural land had expanded to cover 72.77% of the region. The vegetation cover had dwindled to 13.63%, and the settlement area had expanded to 9.58%. Water bodies had also expanded, accounting for 4.01% of the total area.

This transformation revealed a notable decrease of 20.76% in vegetation cover, primarily attributed to the persistent expansion of agricultural land, industrial activities, and urban development driven by population pressure. Simultaneously, both settlement area and agricultural land experienced growth in this region. This shift underscores the evolving socio-economic landscape, emphasizing the need for sustainable land management strategies to strike a balance between urbanization, industrialization, and ecological preservation.

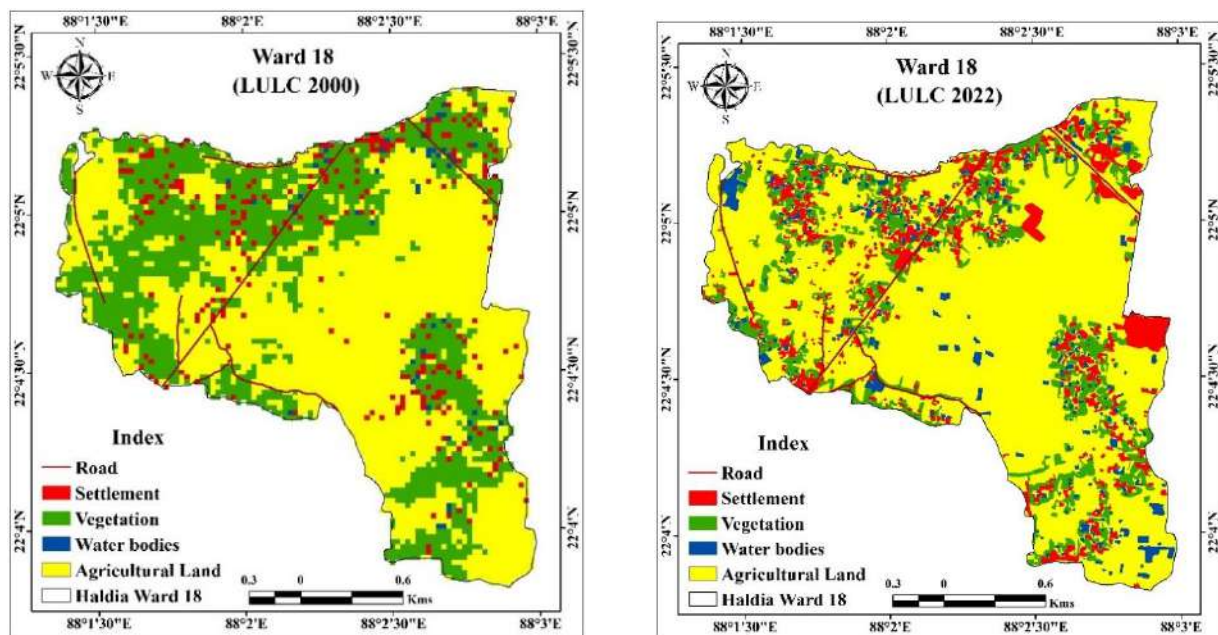


Fig No: 1.2 LULC Map of study area

Table No:1.0 land use and land cover			
Land-use types	Area in %		Change in %
	2000	2022	
Agricultural land	59.22	72.77	13.55
Settlement	4.28	9.58	5.3
Natural vegetation	34.39	13.63	-20.76
Water bodies	2.09	4.01	1.92
Source: Landsat-4&5, TM C2L2			

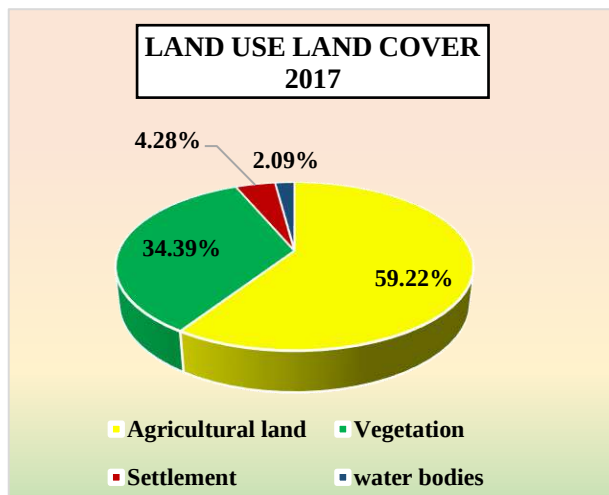


Fig No:1.3 LULC 2017

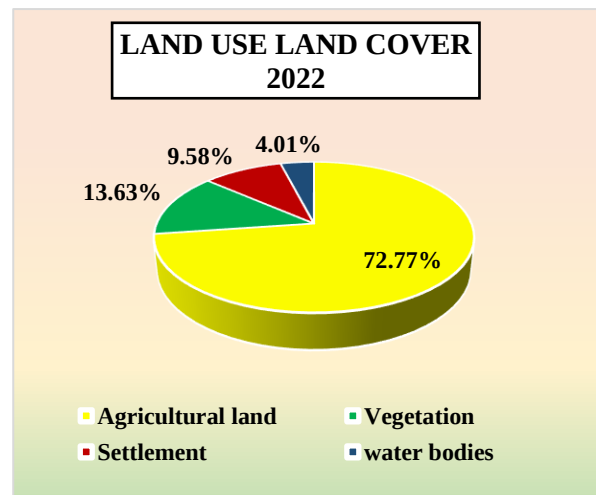


Fig No:1.4 LULC 20122

1.6 Vegetation Cover:

Haldia's geographical coordinates are 22°02'N 88°04'E / 22.03°N 88.06°E, with an average elevation of 8 metres (26 ft.). This study examines the spatiotemporal changes in vegetation within Haldia municipality's ward no-18 from 2000 to 2022. The analysis involves two maps representing 2000 and 2022. In the 2000 map, the vegetation cover area spans 162.24 hectares. Comparing this to the 2022 map, a reduction in vegetation cover is evident, notably in the northwestern and southern regions. This decline is attributed to the expansion of settlements and industries. Notably, the 2022 map indicates a vegetation cover area of 64.31 hectares, signifying a substantial 20.76% reduction.

This reduction in vegetation cover holds the potential for adverse effects on the region. Depleted vegetation can lead to various negative impacts, including ecosystem imbalance, reduced biodiversity, and compromised environmental quality. The study underscores the importance of sustainable land management practices to counteract these effects and maintain the ecological health of the area.

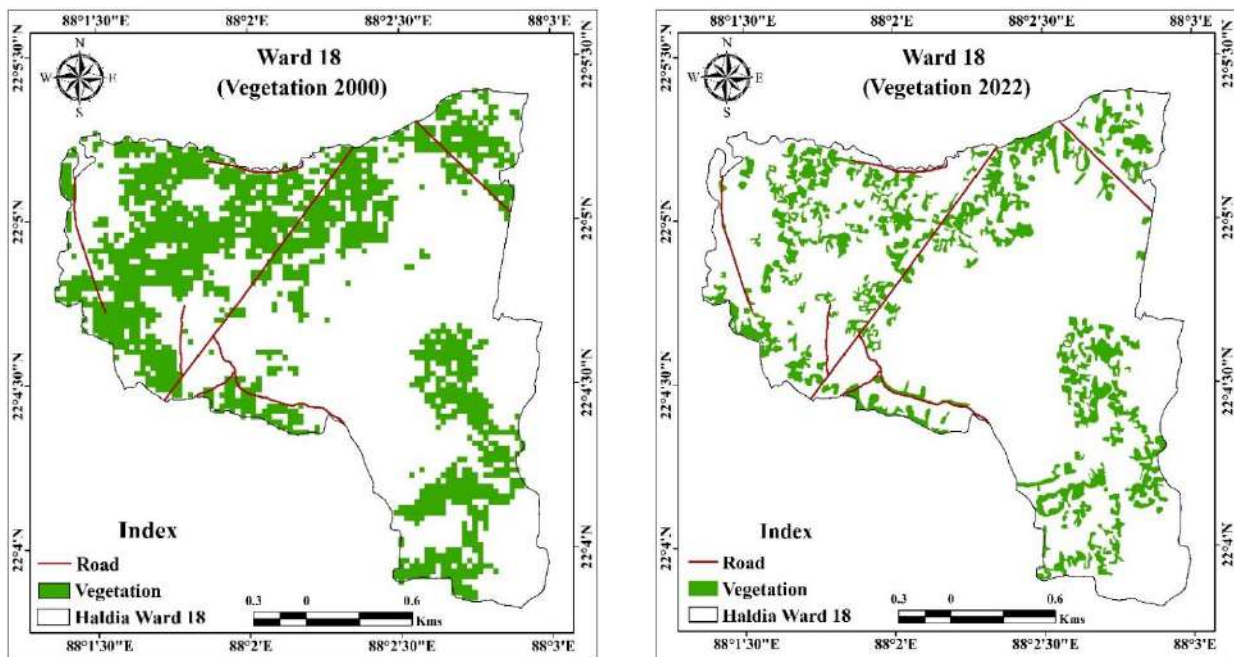


Fig No: 1.5 Vegetation Change

1.7 Water Bodies:

Haldia's geographical coordinates are 22°02'N 88°04'E / 22.03°N 88.06°E, and it boasts an average elevation of 8 metres (26 ft.). This study delves into the alterations in water bodies within Haldia municipality's ward no. 18 from 2000 to 2022. The examination involves two maps, one for the year 2000 and another for 2022. In the 2000 map, water bodies span an area of 9.87 hectares. Conversely, the 2022 map depicts an expansion of water bodies, particularly in the northwestern, southeastern, and southern regions, attributable to increased settlements. The 2022 map showcases a water bodies area of 18.93 hectares, signifying a notable 1.92% increase.

This augmentation in water bodies has implications for the local environment. It can impact the hydrological cycle, aquatic ecosystems, and overall ecological balance. Managing these changes sustainably becomes crucial to ensure that the expansion of water bodies does not lead to adverse ecological consequences. The study underscores the necessity of strategic urban planning to harmonize development with environmental preservation.

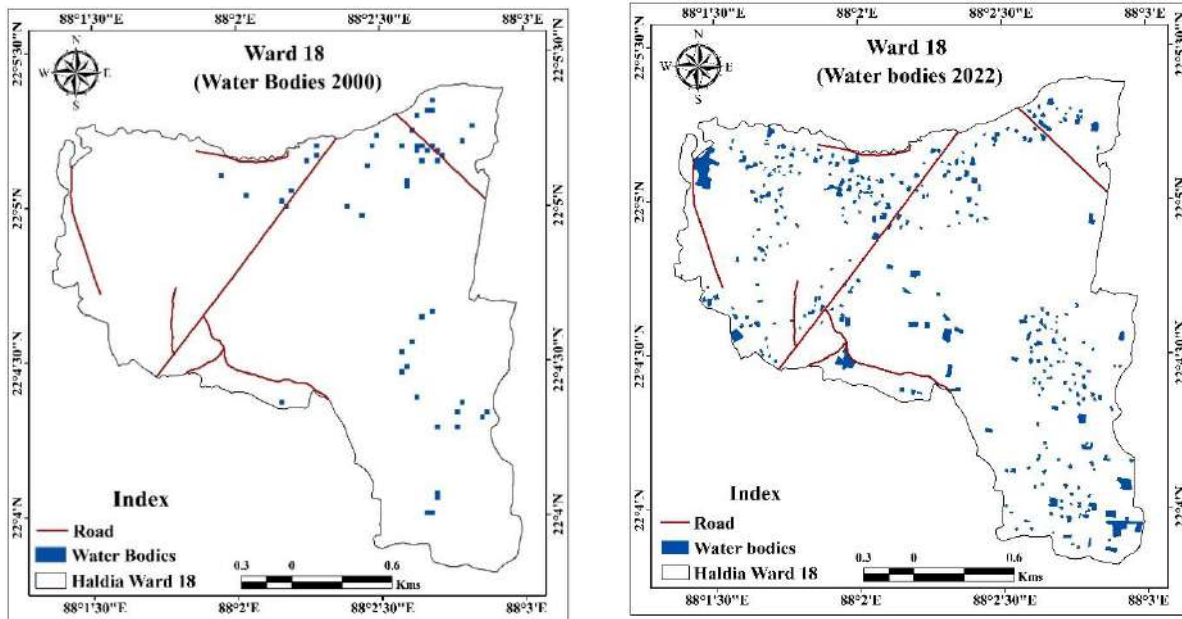


Fig No:1.6 Waterbodies

1.8 Settlement:

The interplay between vegetation and settlements showcases a proportional relationship, often driven by human activities that lead to the destruction of natural vegetation in favor of built-up areas. Analyzing the provided map, it's evident that settlement areas have expanded. The study focuses on the changes in settlement areas within Haldia municipality's ward no. 18 from 2000 to 2022, presenting two distinct maps. In 2000, the settlement area covered 20.21 hectares, characterized by linear formations. Notably, the 2000 map displays an increase in settlement areas, particularly in the North West, north-east, and south-east regions. The 2022 data reveals a notable expansion, with settlement areas encompassing 45.20 hectares, indicating a significant 5.3% growth.

This escalation in settlement areas corresponds with the transformation of the landscape due to human urbanization. As settlements expand, they reshape the environment, emphasizing the need for balanced urban development that preserves ecological equilibrium.

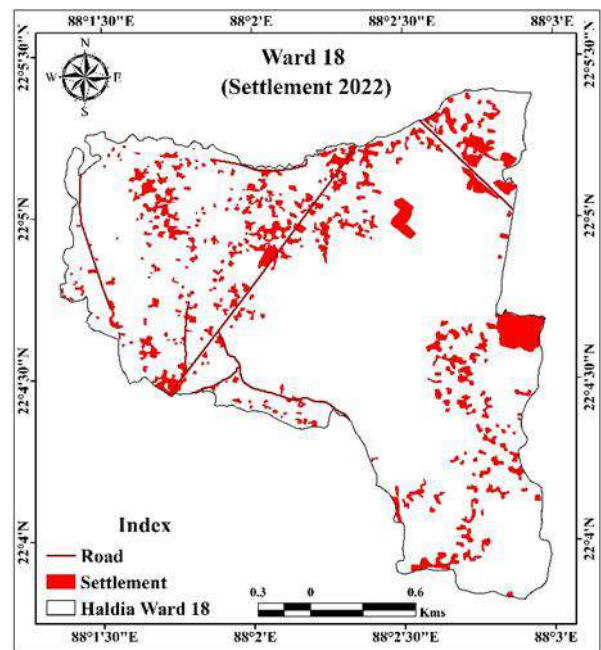
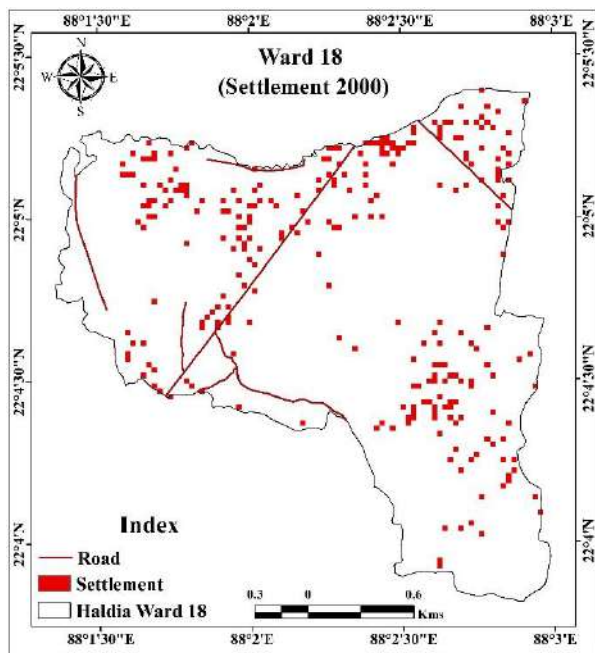


Fig No: 2.5 Settlement Map

CHAPTER-II

Litterateur review

1. **Anantha Duraipappah, Lied**, 1996, In this paper, a formal structure for analysing the complex web of factors is formulated and used to review the existing literature on the links between poverty and the degradation of four natural resource sectors. The analysis highlights the institutional and market failures which encourage unsustainable activities, which in turn forces some income groups into poverty. Another important factor is the role of conflicts between different agents (income groups) in the poverty-environmental degradation nexus. The analysis also highlighted the presence of feedback loops between environmental degradation and poverty.
2. **Anantha K Duraipappah, World development 26 (12), 2169-2179, 1998**: There is much controversy surrounding the poverty-environmental degradation nexus. The predominant school of thought argues that poverty is a major cause of environmental degradation and if policy makers want to address environmental issues, then they must first address the poverty problem. Another school of thought argues that a direct link between poverty and environmental degradation is too simplistic and the nexus is governed by a complex web of factors. In this paper, a formal structure for analysing the complex web of factors is formulated and used to review the existing literature on the links between poverty and the degradation of four natural resource sectors. The analysis highlights the important role institutional and market failure in encouraging agents from various income groups to exhibit unsustainable activities which in turn forces some of the agents to fall into poverty. Another important factor is the role of conflicts between different agents (income groups) in the poverty environmental degradation nexus. The analysis also highlights the presence of feedback loops between environmental degradation and poverty.
3. **Anantha K Duraipappah, World development 26 (12), 2169-2179, 199i**, There is much controversy surrounding the poverty-environmental degradation nexus. The predominant school of thought argues that poverty is a major cause of environmental degradation and if policy makers want to address environmental issues, then they must first address the poverty problem. Another school of thought argues that a direct link between poverty and environmental degradation is too simplistic and the nexus is governed by a complex web of factors. In this paper, a formal structure for analysing the complex web of factors is formulated and used to review the existing literature on the links between poverty and the degradation of four natural resource sectors. The analysis highlights the important role institutional and market failure in encouraging agents from various income groups to exhibit unsustainable activities which in turn forces some of the agents to fall into poverty. Another important factor is the role of conflicts between different agents (income groups) in the poverty environmental degradation nexus. The analysis also highlights the presence of feedback loops between environmental degradation and poverty.
4. **Pallavi Chavan, R Ramakumar**, Economic and Political weekly, 955-965, 2002, This paper reviews empirical evidence on NGO-led micro-credit programmes in several developing countries, and compares them with state-led poverty alleviation schemes in India. The study shows that micro-credit programmes have been able to bring about a

marginal improvement in the beneficiaries' income. However, the beneficiaries have not gained much by way of technological improvements, given the emphasis on 'survival skill'. Also, in Bangladesh the practice of repayment of Grameen Bank loans by making fresh loans from moneylenders has resulted in the creation of 'debt cycles'.

5. **Patrick Cobbinah, Rosemary Black,** Richard Thwaites *Journal of sustainable Development* 6 (9), 25-35, 2013 This paper analyses the conceptual underpinnings of poverty focusing on its evolution, the multi-dimensional definitions, and poverty reduction efforts implemented over the past 50 years. Using secondary data analysis, the paper reveals the universal approaches to poverty reduction have yielded few successes, and recommends that poverty should be viewed as a global phenomenon but tackled at the local level using local indicators. To achieve sustainable development, developing countries should focus on meeting the basic needs of their inhabitants and be committed to ensuring stable political and economic environment.

Chapter –III

Data Sources and Methodology

3.1 Sources Of Data

In any study, the database stands as a pivotal tool, holding immense significance. To construct a comprehensive database, the utilization of primary and secondary data sources becomes essential. The study relies on a blend of primary and secondary data, drawn from various sources

3.1.1 Secondary Data Source:

- ❖ To understand the chronological development of the study area literature review have been done from different books, articles, research papers and web pages.
- ❖ The study area's physical attributes were examined by referencing various articles and online sources.
- ❖ Demographic context was derived from secondary data collected from Primary Census Abstract, 2011, and District Census Handbook, 2011, providing an understanding of the study area's population characteristics.

Table No: 3.1 Data Sources			
SL NO	DATA	YEAR	SOURCES
1	MUNICIPALITY BOUNDARY	2023	Hladia Municipality
3	LAND USE LAND COVER	2000	Landsat-4&5, TM C2L2 Spatial resolution 28.5 m.
4	LAND USE LAND COVER	2022	Landsat-8&9, OLI C2L2 Spatial resolution 30 m.

3.1.2 Primary Data Source:

- ❖ Intensive door to door survey has been carried out covering total 80 household at Chanpi Village in Purba Medinipur District.

3.2 Methodology:

Objective-wise methodology of field report are-

1. Assess the physical back ground of the study area.

The methods of data collection are

- a. Georeferencing
- b. Digitization
- c. LULC Mapping

2. The study aims to clarify the demographic characteristics of the study area.

The methods of data collection are

- a. Primary data collection through questionnaire.
- b. Secondary data collection from census handbook.
- c. Cartographic and statistical methods.

3.The study seeks to examine the basic amenities available in the study area.

The methods of data collection are

- a. Primary data collection through questionnaire.
- b. Secondary data collection from different website, book, journal and articles.
- c. Cartographic and statistical methods for data analysis.

4. Determine the relationship between economic conditions and socioeconomic status.

The methods of data collection are

- a. Primary data collection through questionnaire.
- b. Secondary data collection from different website, book, journal and articles.
- c. Cartographic and statistical methods for data analysis.
- d. Modified Kuppuswamy scale of socio-economic status.



Plate No: Household Survey

3.3 Objective-wise methodology of field report-

Table No: 3.2 Objective-wise methodology			
Objectives	Methods	Data Type	Data Sources
Assess the physical back ground of the study area	Georeferencing Digitization LULC Mapping	secondary data	Landsat-4&5, TM C2L2 Spatial resolution 28.5 m. Landsat-8&9, OLI C2L2 Spatial resolution 30 m.
The study aims to clarify the demographic characteristics of the study area	Cartographic and statistical methods.	Primary and secondary data	Households, Municipality, Website etc.
The study seeks to examine the basic amenities available in the study area.	Cartographic and statistical methods.	Primary and secondary Data	Households, Municipality, Website etc.
Investigating the Poverty status of the study area	Multi-dimensional poverty index	Primary Data	Households
Studying the nutritional status of the study area	Body Mass Index	Primary Data	Households

❖ House-Hold Survey

We collect primary data through intensive door to door household survey with the help of structured questionnaire.

To fulfill the objectives of the study, data on socio-economic factors (level of education, Occupation, income, expenditure pattern of the family, building types and household assets etc.) were collected from Word No-18 at Purba Medinipur District.

❖ Cartographic and Statistical analysis

- ✚ We have compiled all the primary and secondary data and tabulate the data to prepare master table. After that analyzed data for preparation of diagrams and subsequent analysis.
- ✚ Statistical analysis has been done. We have drawn some cartograms by suitable cartographic techniques.
- ✚ Map of Study area has been done by Arc- GIS 10.3 software.
- ✚ Land use Land cover map has been done from Google Earth Image.

❖ Sex ratio

The **sex ratio** is the ratio of females to males in a population. Sex ratio has been carried out by using this formula

$$\text{Sex Ratio} = \frac{\text{Female Population}}{\text{Male Population}} \times 1000$$

❖ Literacy rate

Literacy rate is defined by the percentage of the population of a given age group that can read and write. Literacy rate has been calculated by following formula

$$\text{Literacy rate} = \frac{\text{No. of Literate Population}}{\text{Total Population}} \times 100$$

❖ Decadal growth rate

To find out the percentage of total population growth in a decade (2001-2011) of the study area Decadal growth rate has been calculate. Using the following formula

$$DGR = \left(\frac{P_n - P_o}{P_o} \right) * 100$$

DGR = Decadal Growth Rate in %
P_n = Population now
P_o = Population originally
P_n and P_o are ten years apart

❖ Dependency Ratio:

The dependency ratio is a measure of the number of [dependents](#) aged zero to 14 and over the age of 65, compared with the total population aged 15 to 64. This demographic indicator gives insight into the number of people of non-working age, compared with the number of those of working age. The dependency ratio has been calculated using the following formula.

$$\text{Dependency Ratio} = \frac{[(\text{Total Number of Children under age 14}) + (\text{Total Number of Senior Citizens above age 65})]}{\text{Total Number of People from the age group of 15 to 65}} * 100$$

The Alkire-Foster Methodology

- ❖ The Alkire-Foster Methodology is a multidimensional approach used to measure and analyze poverty. It goes beyond traditional income-based metrics by considering various dimensions of deprivation that individuals experience. This methodology identifies specific indicators related to education, health, living standards, and other essential aspects of well-being. Individuals are considered "multidimensionally poor" if they experience deprivation in a certain number of these indicators.
- ❖ The methodology combines information from different dimensions into a single poverty index, allowing for a more nuanced understanding of poverty. It provides insights into the intensity and composition of poverty, helping policymakers target interventions effectively. By considering the complex interplay of factors contributing to deprivation, the Alkire-Foster Methodology offers a more holistic perspective on poverty that can guide policies toward comprehensive and sustainable poverty reduction.

❖ Software use

ArcGIS: Geographic Information System (GIS) is a powerful tool designed for managing and analyzing geographical data. It facilitates the creation, utilization, and manipulation of maps and geographic information. GIS serves multiple functions, including map creation, compilation of geographic data, analysis of mapped data, sharing and exploration of geographic information, and integration of maps and geographic data into diverse applications. Additionally, GIS plays a crucial role in the effective management of geographic information within a database. This technology enables users to visualize and comprehend spatial relationships, aiding in decision-making processes across various fields such as urban planning, environmental management, disaster response, and more. The versatility and capabilities of GIS contribute to improved understanding and utilization of geographic data for addressing real-world challenges.

❖ Ms-Excel:

To prepare a comprehensive analysis, we began by gathering both primary and secondary data. This compiled data was organized into a master table using MS-Excel, allowing for structured examination. Subsequently, to facilitate data interpretation and further analysis, we utilized MS-Excel software to craft various diagrams. These visual representations aid in conveying complex information effectively. The process involved translating raw data into visual insights, enabling a deeper understanding of trends and patterns. Through these steps, we ensured a robust analysis by utilizing the combined capabilities of data compilation, tabulation, and diagrammatic representation facilitated by MS-Excel.

CHAPTER –IV

Demographic Background

4.0 Demographic Profile

Demography, the statistical study of populations, is focused on understanding and quantifying the dynamics of populations, particularly human ones. This discipline delves into various facets of societies and groups based on factors like education, nationality, religion, and ethnicity. While often considered a subset of sociology within educational institutions, there are also standalone demography departments. Its methodologies, originally designed for human populations, are applicable to diverse areas aiming to comprehend how social actor populations change over time due to birth, death, and migration processes. In human biological contexts, demographic analysis employs administrative records to autonomously estimate population figures.

4.1 Trends of Population:

According to the 2001 Census of India, the total population of the study area, specifically Ward No-18 in Haldia, was recorded as 7062. Among this population, there were 4028 males and 3763 females. However, as per the subsequent 2011 Census, the population of the same study area witnessed growth, reaching a total of 7791 individuals. This signifies an increase of 10.32% in comparison to the population recorded in 2001. The augmentation in population over this decade underscores the dynamic nature of demographic trends within this locality.

Table No: 4.1 Trends of Population				
Census Years	No Of Population	Absolute Increase	Decadal Growth Rate (%)	Population Density (sq. km)
2001	7062	----	----	
2011	7791	729	10.32%	

Source: Census of India, 2011

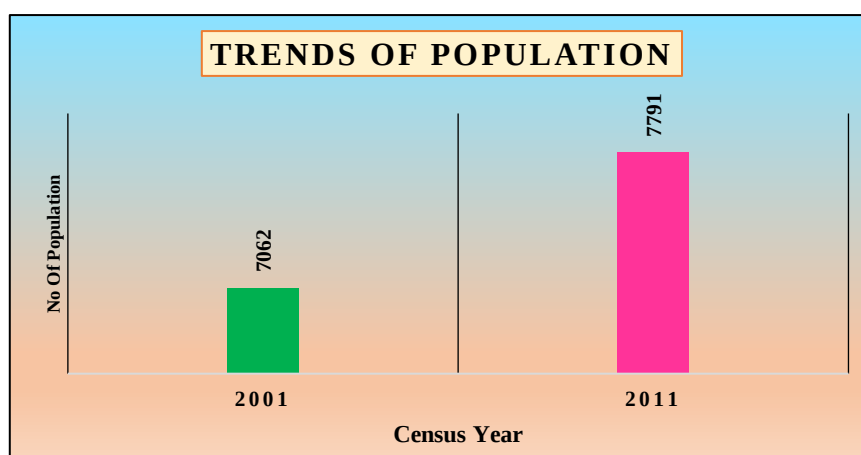


Fig No: 4.1 Trends of Population

4.2 Gender composition

The sex composition of the human population serves as a fundamental demographic feature, signifying socio-economic and cultural dynamics. In the census of 2011, within the study area (ward no-18; Haldia municipality), the total population amounted to 7791 individuals. Among them, there were 3763 females and 4028 males, resulting in a sex ratio of 916 females per one thousand males. This data not only offers insights into the gender distribution but also reflects the intricate societal trends that influence population characteristics.

Table No: 4.2 Gender Composition					
Census Year	Total Population	Male	Female	Gender Ratio	Change
2001	7062	3735	3327	890	---
2011	7791	4028	3763	916	+26

Source: Census of India

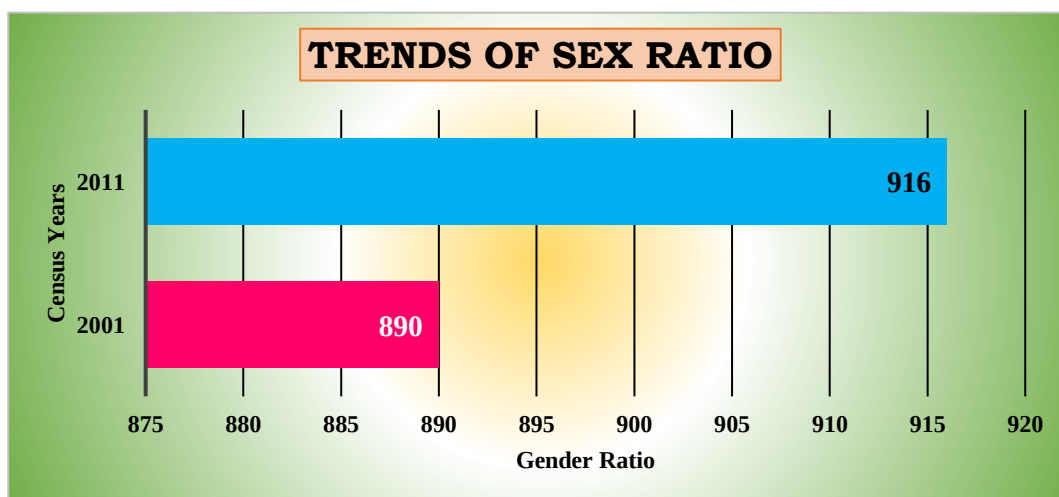


Fig No: 4.2 Sex Ratio

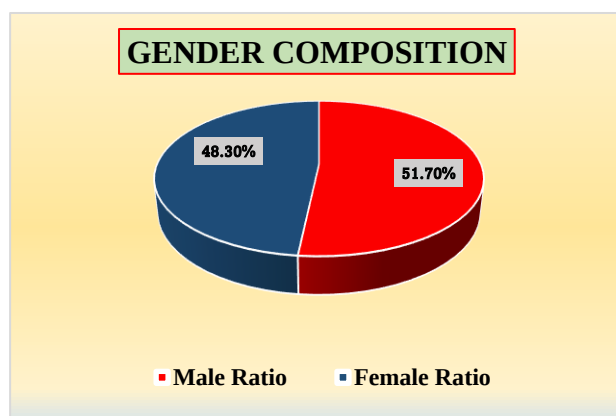


Table No: 4.2 Gender Composition	
Total population	7791
Male population	4028
Male Ratio	51.70%
Female population	3763
Female ratio	48.30%
Gender ratio	916

Source: Census of India 2011

Fig No: 4.3 Gender Composition

Table No: 4.3 Caste Wise Sex Ratio			
Census Years	Gender Ratio		
	SC Population	ST Population	Others
2001	898	864	890
2011	946	1666	916
Change (+/-)	+48	+820	+26
Source: Census of India 2001 & 2011			

4.3 Child sex ratio

In India, the child sex ratio pertains to the number of females per thousand males within the age group of 0 to 6 years within a population. In the context of the study areas, as recorded during the 2001 census, the total child population amounted to 814 individuals. Among them, there were 414 males and 390 females. Consequently, the child sex ratio at that time stood at 942 females for every 1000 males.

However, with the arrival of the 2011 census, a shift is observed. The total child population witnessed an increase, growing from 814 (in 2001) to 900, marking a rise of 86 individuals. Simultaneously, the child sex ratio underwent a decline, diminishing from 942 to 935. This transformation in the demographic composition emphasizes the evolving dynamics of the population's gender distribution within the specified age bracket, reflecting shifts that warrant further exploration and consideration.

Table No:4.4 Child sex ratio			
Child Population	Census Years		Change (+/-)
	2001	2011	
Total Child	814	900	+86
Male Child	414	464	+50
Female Child	390	436	+46
Child Sex Ratio	942	935	-7
Source: census of India 2001 & 2011			

4.4 Age Composition

Age distribution, also referred to as age composition, holds significance in population studies as it depicts the relative proportions of individuals across different age groups within a population. In demography, this concept often involves categorizing the population into three primary age groups: children and young adolescents (below 15 years), the working-age population (15-59 years), and the elderly population (60 years and above).

Delving into the household survey data related to age in this area, intriguing insights emerge. Notably, 36% of the population falls within the age range of 15 to 59 years, representing the working-age segment. On the other hand, 4.8% of the population belongs to the age group of 0 to 14 years, comprising children and young adolescents. In terms of the elderly population, those above 59 years constitute the smallest proportion, accounting for 9.6% of the total population.

Table No:4.5 Age-sex Composition				
Age Groups(yrs.)	Male		Female	
	Number	%	Number	%
0-14	6	4.8	9	7.2
15-59	45	36	44	35.2
>60	12	9.6	9	9
<i>Source: Field survey 2023</i>				

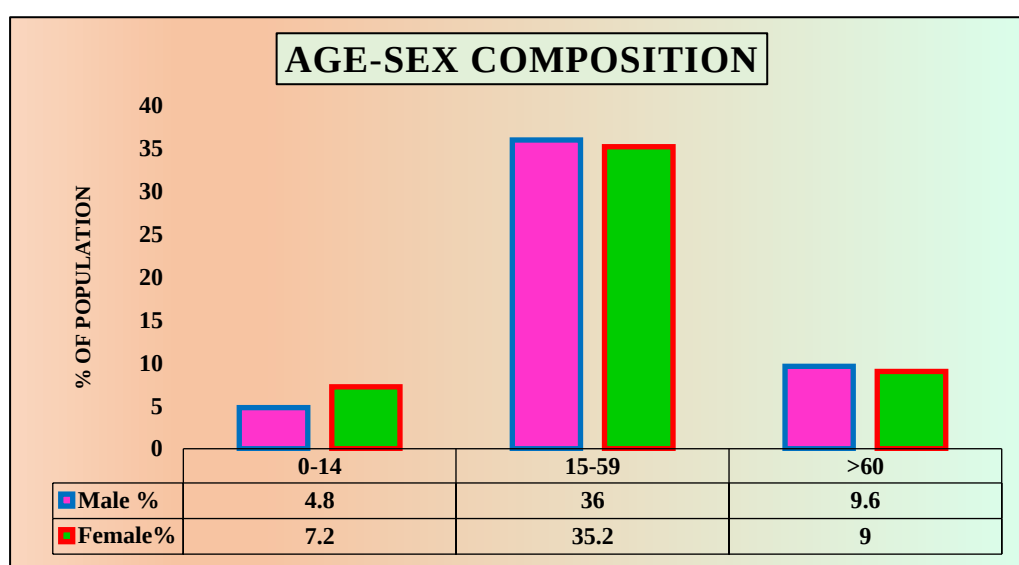


Fig No: 4.4 Age-sex Composition

4.5 Dependency Ratio:

In the study area, age distribution is not uniform among the population. Instead, a discernible trend emerges. The most significant concentration of people is observed within the middle age or working age bracket, spanning from 15 to 59 years. This particular segment constitutes approximately 36% of the total population.

Meanwhile, the dependent population, encompassing those aged zero to 14 and individuals above 65, makes up around 32% of the total population. As a result, the dependency ratio,

which quantifies the ratio of dependents to the working-age population, stands at 34.40%. This collective information offers a comprehensive picture of the demographic dynamics within the study area, spotlighting the distribution of age groups and the consequent implications for economic and social structures.

Table No: 4.6 Dependency Ratio				
Age Groups (Years)	No of Population	Dependent Population	Independent Population	Dependency Ratio (%)
0-14	17	32	93	34.40
15-59	93			
>59	15			
Source: Field survey 2023				

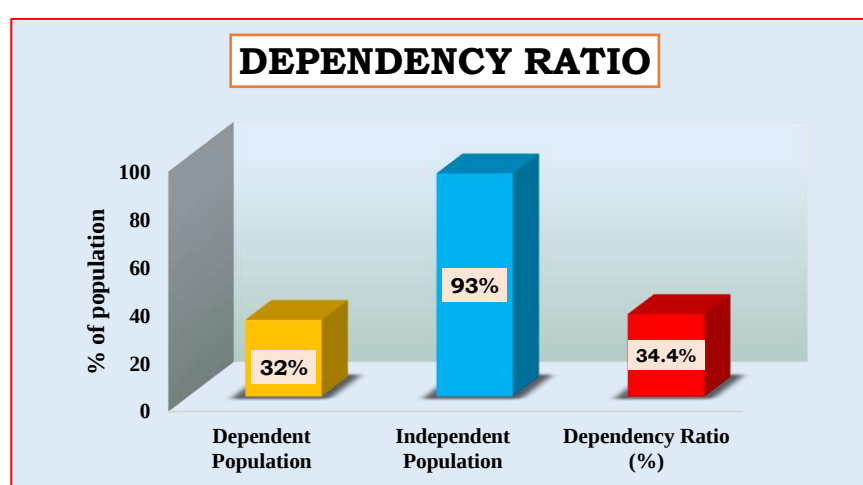


Fig No: 4.5 Dependency Ratio

4.6 Median Age

In statistics, the term "median" holds significant importance. It represents a metric that characterizes a data set. Specifically, the median corresponds to the middle value within an arranged list of numbers, whether in ascending or descending order. This measure can offer a more comprehensive understanding of the dataset compared to the mean. By identifying the middle point where exactly half (50%) of the observed data lies above and below, the median effectively serves as the midpoint of the dataset. This statistic is commonly juxtaposed with other key descriptive metrics like the mean, mode, and standard deviation.

In the context of this project, the median age emerges as a significant point of focus. The median age of the population stands at 34 years. Notably, the age range spans from a mere 3 months to a maximum of 72 years in this specific area. It is worth highlighting that the population's demographic distribution exhibits a substantial concentration (80%) of individuals in the middle-age bracket, as opposed to the elderly or children. This observation not only provides valuable insights into the population structure but also offers a reflective glimpse into the economic dynamics of the area.

CHAPTER – V

Socio-Economic Profile

5.0 Socioeconomic Status

Socioeconomic status is a placement on the socioeconomic scale, established by a blend of economic and social elements like income, education level, occupation type, residential location, and, in some instances, ethnic or religious affiliation. Analyses of socioeconomic status frequently uncover disparities in resource accessibility, along with matters linked to privilege, authority, and influence. A person's socioeconomic status encompasses factors such as their educational attainment, income, occupation type, and residential area. These components collectively define one's socioeconomic position, illuminating differences in opportunities and potential privileges.

5.1 Literacy Status:

The literacy rate pertains to the percentage of individuals aged 15 and above who can read and write, compared to the total corresponding population within a specific geographic region, often at a particular mid-year point. As per the 2011 Census criteria, anyone aged seven and above with reading and writing abilities is considered literate. The literacy rate in ward no. 18, based on the 2011 Census, is lower than the municipality average of 92% in Haldia. Within ward no. 18, the literacy rate for males and females stands at 85.30% and 84.11% respectively. The study area recorded a total of 4886 literate individuals, with 2600 being male and 2286 female. This data underscores the variations in literacy within the region, highlighting the need for targeted educational initiatives to bridge these gaps.

Table No: 5.1 Literacy Status			
Gender	Literate persons	Literacy rate (%)	Literacy gap(gender gap)
Male	2600	85.30%	1.19%
Female	2286	84.11%	
Source: Census of India			

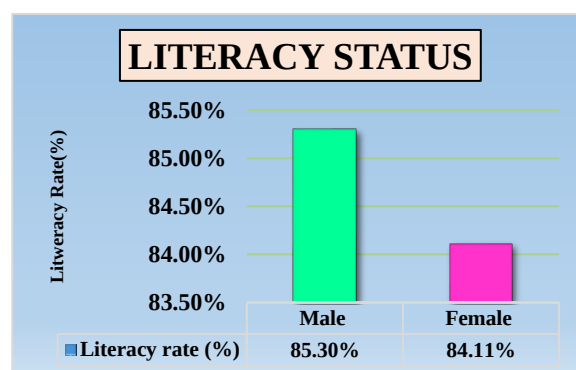


Fig No: 5.1 Literacy Status

5.2 Caste Composition:

In India, the religious groups exhibit diverse caste compositions. A substantial majority (68%) of Indians identify as belonging to lower castes, encompassing 34% who are part of Scheduled Castes (SCs) or Scheduled Tribes (STs), and 35% as part of Other Backward Classes (OBCs) or Most Backward Classes.

From a field survey, it emerges that the population primarily comprises individuals from the general category, constituting around 91.43%. Meanwhile, Scheduled Castes account for 5.71% and Other Backward Classes constitute 2.85%. This data underscores the intricate interplay between religious affiliation and caste dynamics in India, emphasizing the significance of understanding these socio-cultural dimensions for a comprehensive understanding of the population makeup.

Table No:5.2 Caste Composition		
Categories	No	(%)
Unreserved	32	91.43
SC	2	5.71
ST	0	0
OBC-B	1	2.85
Source: Field survey2023		

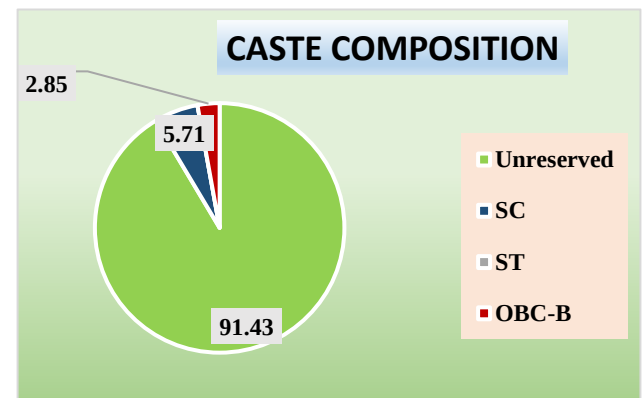


Fig No: 5.2 Caste Composition

5.3 Poverty Status:

The World Bank reports that globally, 9.2% (719 million) of people exist in extreme poverty, surviving on less than \$2.15 daily. Within the US, 11.6% (37.9 million) were impoverished in 2021. India holds a Low Middle-Income classification; an individual consuming less than \$3.2 daily here is deemed poor.

A field survey discloses that 80% of households in the study area are categorized as Above Poverty Line (APL), whereas 15% fall into the Below Poverty Line (BPL) category. Of these, 25% represent families experiencing a low level of poverty, impacting their lifestyle significantly. These findings underscore the varied poverty dynamics and necessitate targeted measures to uplift the economically disadvantaged.

Table No: 5.3 Poverty Status		
Poverty status	Number	Percentage (%)
APL	30	85
BPL	15	15
Source: Field survey 2023		

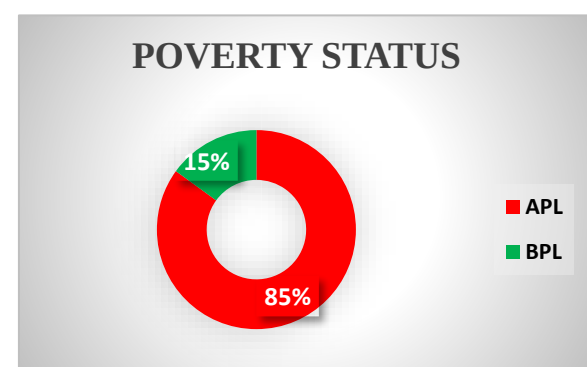


Fig No:5.3 Poverty Status

5.4 Level of Education:

Based on the International Standard Classification of Education (ISCED), education levels encompass categorized groupings of educational programs, organized in accordance with escalating learning experiences and the intended knowledge, skills, and competencies each program imparts.

The field survey data concerning education in Haldia highlights patterns in educational attainment. The majority have completed their higher secondary education (17.19%), yet the percentage progressively decreases for higher education or post-graduation (10.16%). This survey illuminates the distribution of educational achievements, showcasing trends that emphasize the significance of fostering opportunities for advanced education to enhance overall knowledge and skill acquisition.

TABLE NO. 5.4 Level of education		
Level of education	Number	Percentage (%)
Illiterate	4	3.12
Literate	6	4.68
Primary	16	12.5
Eight	15	11.72
Secondary	22	17.19
Higher secondary	23	17.97
Graduate	19	14.84
Post-graduate	13	10.16
Other(ITI/DIPLOMA)	10	7.813

Source: Field survey 2023

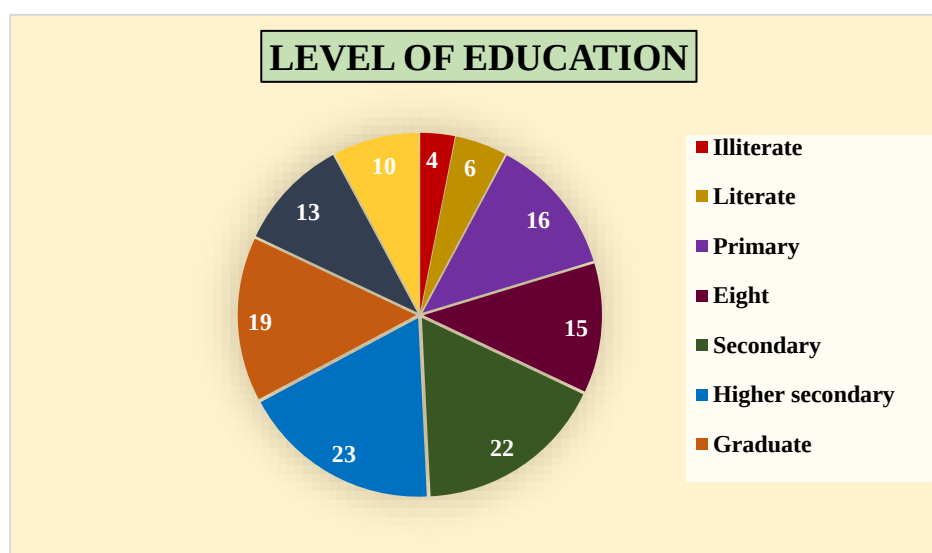


Fig No: 5.4 Level of Education

5.6 Occupation Pattern

The field survey conducted in Haldia provides insights into the occupation patterns as well. The data reveals that a significant portion of the population is involved in unskilled wage labor (37.5%). Additionally, some individuals are employed in government salaried positions (23.21%), while others are engaged in salaried roles within the private sector (16.07%). Furthermore, a portion of the population participates in alternative sectors such as fishing, pisciculture, and farming (6%).

Table No: 5.7 Occupation Pattern		
Occupation pattern	Number	Percentage (%)
Farming lease land	3	5.36
Animal Husbandry	2	3.57
Pisci-culture /poultry	0	0
Skilled wage worker	4	7.14
Unskilled wage worker	21	37.5
Salaried employment in government	13	23.21
salaried employment in privet sector	9	16.07
Teaching	1	1.79
Other trade and business	3	5.36

Source: Field survey 2023

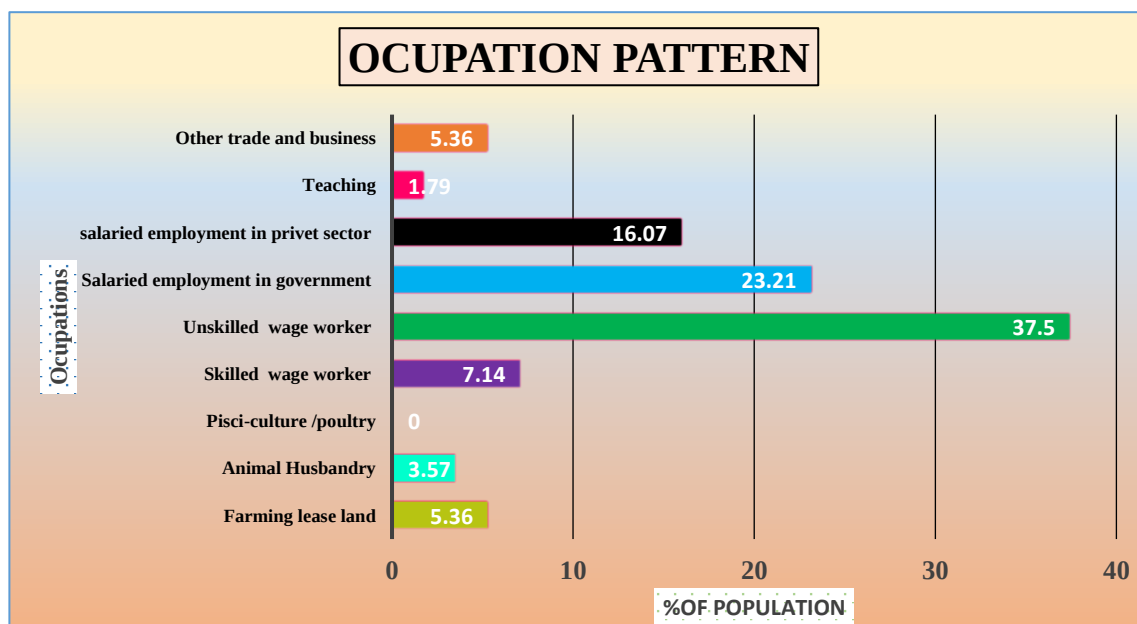


Fig No: 5.5 Level of Education

5.7 Ownership of House:

The field survey reveals that in the study area, every household owns its residence, with no rental houses present. Additionally, all houses possess their own plots and are built as permanent structures (pucca). This collective ownership and absence of rental arrangements reflect a positive socio-economic status within this region. The prevalence of self-owned and well-constructed dwellings signifies a stable housing situation and suggests a relatively prosperous living condition in the area.

Table No: 5.8 Ownership of House		
Owner of house	Number	Percentage
Rental	0	0
Own	100	100
Source: Field survey 2023		

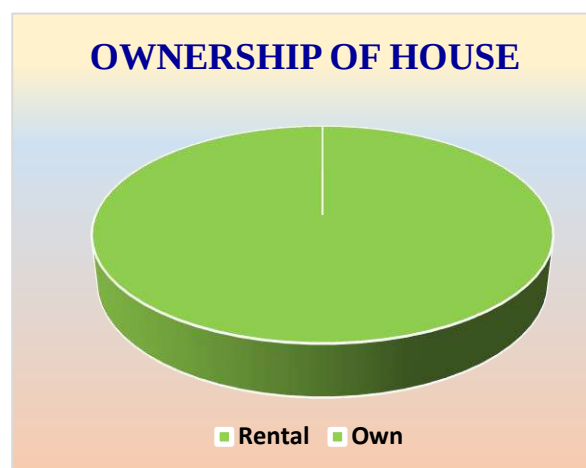


Fig No: 5.6 Ownership of House

5.8 Nature of House

The nature of houses serves as a reflection of the socio-economic status within an area. Based on the field survey, the study area showcases a distinct housing pattern. Notably, 80% of the households in this region boast permanent structures (pucca), while the remaining 20% are semi-permanent (semi pucca). Remarkably, no kutcha houses were identified. The presence of cluster settlements is evident. Remarkably, all pucca houses are meticulously constructed using systematic planning and methods. This collective effort in housing construction underscores the area's development and signifies a positive socio-economic landscape.

Table No: 5.9 Nature of House		
Nature Of House	Number	Percentage (%)
Kutcha	0	0
Semi pucca	7	20
Pucca	28	80
Source: Field survey 2023		

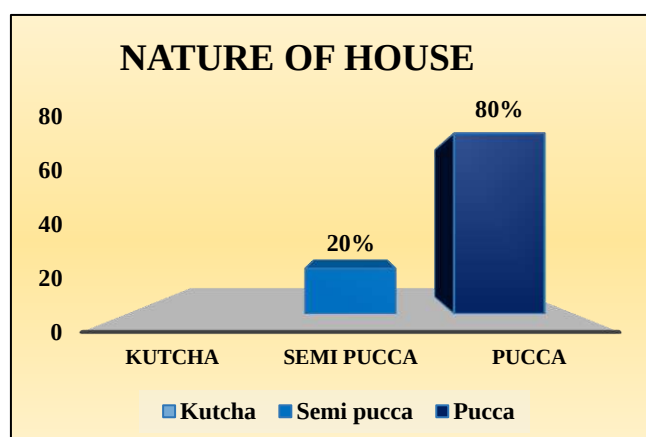


Fig No: 5.7 Nature Of House



Plate No: 2 Nature of Housing



Plate No: 3 Traditional Cooking Fuel

5.9 Monthly Family Income

Based on the survey findings, income distribution across different sectors can be segmented. The major portion of income falls within the range of 10,000 to 20,000. A significant proportion of individuals are associated with various companies and businesses in Haldia, resulting in a higher monthly family income for 34.29% of households. Moreover, 31.43% of families enjoy an income exceeding 30,000, indicating a substantial economic well-being. Conversely, a portion of 17.147% falls into the 5,000 to 10,000 income brackets, reflecting a relatively lower income level. Overall, the quality of life can be described as moderately favourable.

Table No: 5.9 Monthly Family Income		
Monthly family income (in rupees)	Number	Percentage%
<5000	00	00
5000-10,000	6	17.142
10,000-20,000	12	34.29
20,000-30,000	6	17.14
>30,000	11	31.43

Source: Field Survey 2023

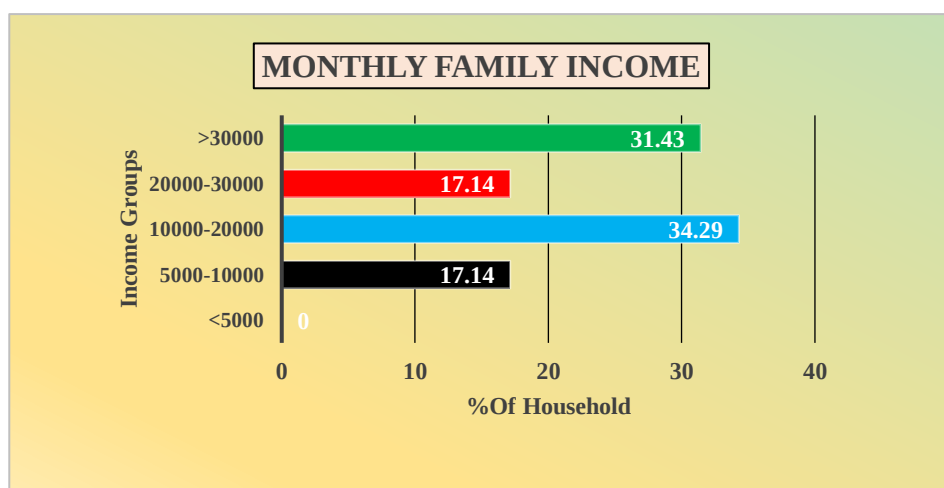


Fig No: 5.8 Monthly family income

5.10 Bank Account:

In study area, most residents are educated and forward-thinking. They actively plan for their future by creating savings accounts to secure their financial stability. A staggering 93% of the population holds bank accounts, a testament to their technological savvy and financial awareness. However, a small percentage of 7% remains without bank accounts, as indicated by survey data.

Table No: 5.9.2 Bank Account		
Bank Account	Number	Percentage
YES	210	93%
NO	15	7%
Source: Field survey 2023		

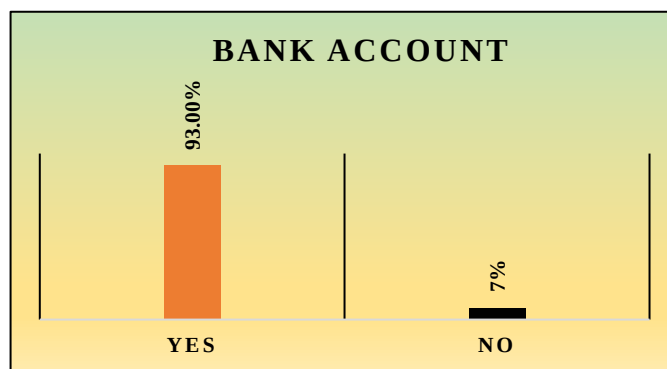


Fig No-5.9 Bank Account

5.11 Cooking Fuel:

In Ward No-18 of Haldia municipality, the study area reveals an interesting statistic: 54.29% of individuals employ LPG, both directly and indirectly, for their cooking needs. In contrast, 45.71% of families continue to rely on traditional fuels for their culinary purposes. The significance of this lies in the potential consequences of using wood-based fuels, which encompass both environmental and health-related concerns.

The usage of wood-based power plants can significantly contribute to deforestation and air pollution, triggering a chain of negative impacts. Moreover, the utilization of fuel wood for cooking poses a substantial risk to human health. The adverse effects are especially pronounced among women and children within households, making them particularly vulnerable to the health hazards stemming from the burning of firewood. This pressing issue underscores the urgent need for sustainable alternatives and awareness campaigns aimed at mitigating the adverse repercussions associated with the continued use of fuel wood.

Table No: 5.9.3 Cooking fuel		
Cooking fuel	Number	Percentage (%)
Fuel wood	16	45.71
Electricity	0	0
LPG	19	54.29
Source: Field survey 2023		

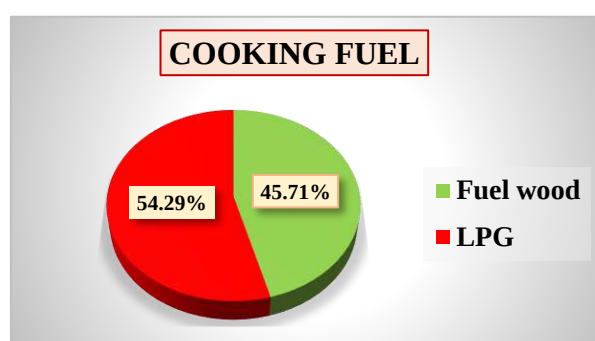


Fig No: 5.10 Cooking Fuel

CHAPTER -VI

Multidimensional Poverty analysis

6.1 Poverty:

The incidence of poverty in India is a significant concern for both policy analysts and academic researchers due to its wide-reaching impact and severity. Defining and measuring poverty is a complex task, as it involves a mix of subjective and objective factors. In India, as in other countries, poverty is typically quantified using the poverty line, which represents the minimum expenditure required to meet basic needs. Poverty can be characterized based on access to essential amenities, such as food, floor space per person, and medical care, irrespective of income. If a family lacks these necessities, it is considered poor. Another approach considers the minimum food consumption or calorie requirements to sustain life and converts this into an income level for a specific base year. Families with income below this "critical level" are classified as poor, regardless of their size or living conditions resulting from past savings, accumulated wealth, or private gifts. A third method involves defining poverty in terms of relative income, disregarding accumulated wealth. In this approach, the lowest 5% or 10% of the population is considered poor, known as income poverty. Measuring and addressing poverty in India require a comprehensive understanding of its multidimensional nature. Policymakers, economists, and social workers must consider various factors, such as access to education, healthcare, and clean water, as well as social inequalities, to design effective poverty alleviation strategies. By developing targeted interventions and policies that focus on both objective and subjective elements of poverty, India can work toward uplifting the lives of its vulnerable populations and building a more equitable society. Monitoring progress and setting achievable goals in the fight against poverty are essential steps toward achieving sustainable and inclusive development.

6.2 History of Poverty Estimation:

The evolution of poverty measurement in India has been a dynamic process that has undergone significant changes over the years. The methods used to estimate and define poverty have evolved to capture the multidimensional nature of the issue and address the varying needs of the population. Here is an overview of the key stages in the evolution of poverty measurement in India:

6.3 Evolution of Indian poverty line:

Table No:6.1 Indian poverty line			
SI No	Committee	Year	Criteria
1	Dadabhai Naoroji	1901	Between ₹ 16 and ₹ 35 per capita per year
2	National Planning Committee	1938	Varying from ₹ 15 to ₹ 20 per capita per month)
3	The Bombay Plan	1944	Poverty limit of ₹ 75 per capita per year.
4	VM Dandekar and N Rath	1971	Based on spending that would supply 2250 calories per day
5	Alagh Committee	1979	Based on spending that would supply 2250 calories per day
6	Lakdawala Committee	1993	1. Rural regions were ₹ 446.68 per capita per month in 2004-2005 2. Urban areas, it was ₹ 578.80 per capita per month. 3. It was ₹ 859.6 in urban areas and ₹ 672.8 in rural regions in 2009-2010. 4. It was ₹ 1000 in urban areas and ₹ 816 in rural regions in 2010-2011.
7	Tendulkar Committee	2009	1. People in cities who spend less than ₹ 47 per day 2. villages who spend less than ₹ 32 per day are deemed poor.
8	Rangarajan Committee	2012	Between ₹ 16 and ₹ 35 per capita per year
Source: https://Prepp.In/News			

6.4 The Multidimensional Poverty Index (MPI):

The Multidimensional Poverty Index (MPI) is a comprehensive measurement tool used to assess poverty beyond income-based indicators. It was introduced by the United Nations Development Programme (UNDP) in collaboration with the Oxford Poverty and Human Development Initiative (OPHI). The MPI provides a more holistic and nuanced understanding of poverty by considering multiple dimensions of deprivation that individuals may face. Unlike traditional income-based measures that focus solely on monetary aspects, the MPI considers various non-monetary dimensions of well-being, such as education, health, living standards, and social inclusion. By incorporating multiple indicators, the MPI offers a more accurate representation of poverty and captures the interrelated deprivations that people may experience simultaneously.

6.5 indicators of Multidimensional Poverty Index:

Table No:6.2 Indian poverty line			
Dimensions	Indicators	A Household Is Considered Deprived If	Weight (W)
Health	Nutrition	Any child between the ages of 0 to 59 months, or woman between the ages of 15 to 49 years, or man between the ages of 15 to 54 years -for whom nutritional information is available - is found to be undernourished.	1/6
	Child-Adolescent Mortality	A child/adolescent under 18 years of age has died in the family in the five-year period preceding the survey	1/12
	Maternal Health	Any woman in the household who has given birth in the 5 years preceding the survey, has not received at least 4 antenatal care visits for the most recent birth or has not received assistance from trained skilled medical personnel during the most recent childbirth.	1/12
Education	Years of Schooling	Not even one member of the household aged 10 years or older has completed six years of schooling.	1/6
	School Attendance	Any school-aged child is not attending school up to the age at which he/she would complete class 8.	1/6
Standard of Living	Cooking Fuel	A household cooks with dung, agricultural crops, shrubs, wood, charcoal or coal	1/21
	Sanitation	The household has unimproved or no sanitation facility or it is improved but shared with other households.	1/21
	Drinking Water	The household does not have access to improved drinking water or safe drinking water is at least a 30-minute walk from home (as a round trip).	1/21
	Electricity	The household has no electricity.	1/21
	Housing	The household has inadequate housing: the floor is made of natural materials, or the roof or wall are made of rudimentary materials.	1/21
	Assets	The household does not own more than one of these assets: radio, TV, telephone, computer, animal cart, bicycle, motorbike, or refrigerator, and does not own a car or truck.	1/21
	Bank Account	No household member has a bank account or a post office account	1/21
Source: NITI AYO			

6.6 Poverty Cut-off:

The Alkire-Foster (AF) methodology forms the core of the Multidimensional Poverty Index (MPI). It is a widely accepted framework for measuring multidimensional poverty, employing a dual-cutoff counting method to identify individuals as poor or not poor.

Firstly, within each component indicator, a **first-order cutoff** is applied to determine if each person is "deprived" or "not deprived." Based on their achievement (or lack thereof) in each indicator's first-order cutoff, everyone in the household is marked as deprived (denoted by 1) or not deprived (denoted by 0) in each respective indicator.

Subsequently, a **second-order cutoff**, known as the poverty cut-off, is applied to the deprivation score to identify individuals who are multidimensionally poor. The deprivation score captures the extent of deprivation experienced by an individual across multiple indicators. Those with a deprivation score greater than or equal to the second-order cutoff are classified as multidimensionally poor.

For example, suppose the second-order cutoff is set at 0.33 (33%). If individual A has a deprivation score of 0.57, they will be considered multidimensionally poor because their score exceeds the poverty cut-off. Conversely, individual B, with a deprivation score of 0.18, will not be considered multidimensionally poor, even though they have a non-zero deprivation score since it falls below the second-order cutoff.

The AF methodology offers a robust and consistent approach to measuring multidimensional poverty, allowing policymakers and researchers to identify those most in need and design targeted interventions to alleviate poverty in various dimensions of well-being. It enhances the understanding of poverty beyond income-based measures and facilitates a more comprehensive assessment of the living conditions and deprivations faced by individuals and households.

6.7 Censoring:

After computing the deprivation scores for all individuals, a censoring process is applied in multidimensional poverty estimations. Any deprivation score that is less than the second-order cut-off is replaced with 0. This process is known as censoring and is aimed at distinguishing individuals who are not multidimensionally poor.

Following the censoring process:

Individual A's deprivation score of 0.52 is higher than the second-order cut-off (0.33), so it remains unaltered. Individual A is considered multidimensionally poor.

Individual B's deprivation score of 0.20 is lower than the second-order cut-off (0.33). In this case, the score is replaced with 0. Individual B is not considered multidimensionally poor.

By applying censoring, the multidimensional poverty index identifies individuals who face multiple deprivations and are considered multidimensionally poor. Those with deprivation scores below the second-order cut-off are not classified as multidimensionally poor, indicating they do not experience severe deprivations across the chosen indicators.

6.8 Multidimensional Poverty Measurement

6.8.1 Health Dimensional deprivation status:

Three health dimensions are present in this area: nutritional status, child and adolescent mortality, and antenatal care. Upon analysis, we observed that child and adolescent mortality as well as antenatal care are not deprived in this area. However, it is noteworthy that six households (H13, H16, H17, H26, H30, and H33) are deprived of proper nutrition.

Table No: 6.3 Health deprivation status															
Household ID	Nutritional Deprivation	Score	Child & Adolescent Mortality	Score	Antenatal Care	Score	Total	Household ID	Nutritional Deprivation	Score	Child & Adolescent Mortality	Score	Antenatal Care	Score	Total
H1	0	0	0	0	0	0	0	H19	0	0	0	0	0	0	0
H2	0	0	0	0	0	0	0	H20	0	0	0	0	0	0	0
H3	0	0	0	0	0	0	0	H21	0	0	0	0	0	0	0
H4	0	0	0	0	0	0	0	H22	0	0	0	0	0	0	0
H5	0	0	0	0	0	0	0	H23	0	0	0	0	0	0	0
H6	0	0	0	0	0	0	0	H24	0	0	0	0	0	0	0
H7	0	0	0	0	0	0	0	H25	0	0	0	0	0	0	0
H8	0	0	0	0	0	0	0	H26	1	0.16	0	0	0	0	0.16
H9	0	0	0	0	0	0	0	H27	0	0	0	0	0	0	0
H10	0	0	0	0	0	0	0	H28	0	0	0	0	0	0	0
H11	0	0	0	0	0	0	0	H29	0	0	0	0	0	0	0
H12	0	0	0	0	0	0	0	H30	1	0.16	0	0	0	0	0.16
H13	1	0.16	0	0	0	0	0.16	H31	0	0	0	0	0	0	0
H14	0	0	0	0	0	0	0	H32	0	0	0	0	0	0	0
H15	0	0	0	0	0	0	0	H33	1	0.16	0	0	0	0	0.16
H16	1	0.16	0	0	0	0	0.16	H34	0	0	0	0	0	0	0
H17	1	0.16	0	0	0	0	0.16	H35	0	0	0	0	0	0	0
H18	0	0	0	0	0	0	0	Source: Field Survey 2023							

6.8.1.1 Body Mass Index:

Body Mass Index (BMI) is a straightforward calculation that utilizes a person's weight and the square of their height. The formula for BMI is $BMI = \frac{kg}{m^2}$, where kg represents weight in kilograms, and m^2 represents the height in meters squared. According to the World Health Organization (WHO), the healthy BMI range for adults is between 18.5 and 24.9. In order to calculate the Body Mass Index, we collected data on height (in meters) and weight (in kilograms). The BMI data were gathered from a sample of 127 individuals from each household, using weighing machines and measuring tapes. The BMI values of the surveyed people are presented in Table 6.4. The results indicate that 4.72% of the population falls under the underweight category, 72.44% fall within the normal weight (healthy range), 20.47% are classified as overweight, and 2.36% are categorized as obese.

Table No: 6.4 Body Mass Index			
Weight	BMI	Number	%
Under Weight	Bellow 18.5	6	4.72
Normal Weight	18.5-24.9	92	72.44
Over Weight	25-29	26	20.47
Obese	30 and above	3	2.36
Source: Field Survey 2023			

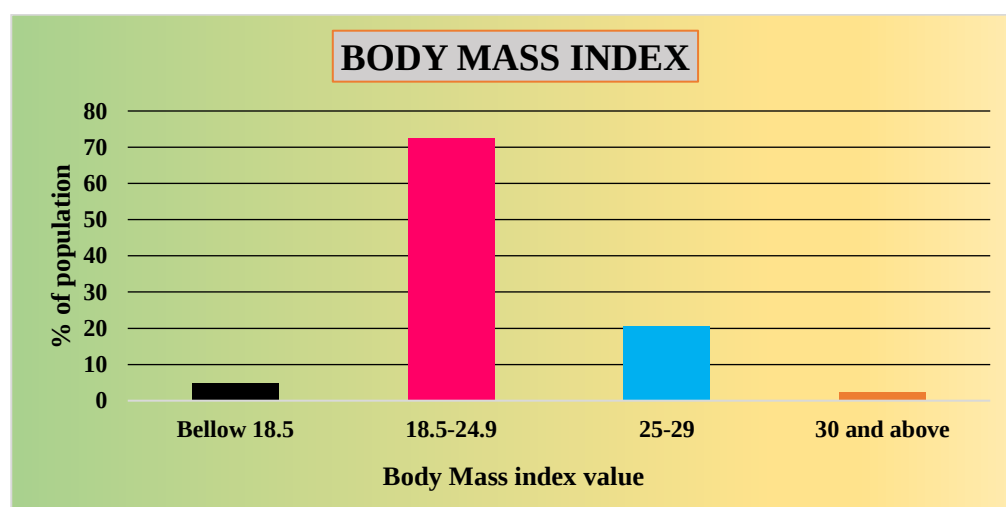


Fig No:6.1 Body Mass Index

6.8.1.2 Gender Wise Body Mass Index

In this area, we observe notable differences in weight distribution between genders. The prevalence of overweight among males is higher, at 11.81%, compared to females, who stand at 8.66%. Conversely, a higher percentage of females, 3.15%, are underweight in contrast to males at 1.57%. Furthermore, the count of boys within the normal weight range surpasses that of females. These findings underscore the likelihood of females in this area facing challenges of undernourishment or overweight issues compared to boys.

Table No: 6.5 Gender wise Body Mass Index					
Weight	BMI	Male	%	Female	%
Under weight	Bellow 18.5	2	1.57	4	3.15
Normal weight	18.5-24.9	50	39.37	42	33.07
Over weight	25-29	15	11.81	11	8.66
Obese	30 and above	2	1.57	1	0.79
Source: Field Survey 2023					

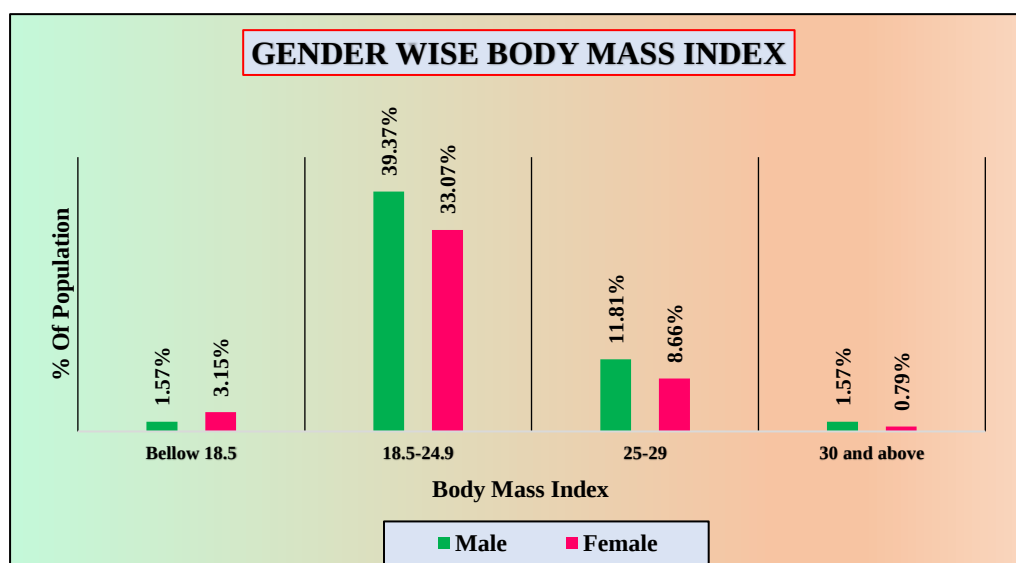


Fig No:6.2 Gender Wise Body Mass Index

6.8.2 Educational Deprivation:

Educational deprivation refers to the inability of individuals to fulfil their educational needs and requirements. In this area, it is evident that all households have access to school facilities, indicating that there is no deprivation of education in this locality.

Table No: 6.6 Educational Deprivation											
Household ID	Years of Schooling	Score	School attendance	Score	Total	Household ID	Years of Schooling	Score	School attendance	Score	Total
H1	0	0	0	0	0	H19	0	0	0	0	0
H2	0	0	0	0	0	H20	0	0	0	0	0
H3	0	0	0	0	0	H21	0	0	0	0	0
H4	0	0	0	0	0	H22	0	0	0	0	0
H5	0	0	0	0	0	H23	0	0	0	0	0
H6	0	0	0	0	0	H24	0	0	0	0	0
H7	0	0	0	0	0	H25	0	0	0	0	0
H8	0	0	0	0	0	H26	0	0	0	0	0
H9	0	0	0	0	0	H27	0	0	0	0	0
H10	0	0	0	0	0	H28	0	0	0	0	0
H11	0	0	0	0	0	H29	0	0	0	0	0
H12	0	0	0	0	0	H30	0	0	0	0	0
H13	0	0	0	0	0	H31	0	0	0	0	0
H14	0	0	0	0	0	H32	0	0	0	0	0
H15	0	0	0	0	0	H33	0	0	0	0	0
H16	0	0	0	0	0	H34	0	0	0	0	0
H17	0	0	0	0	0	H35	0	0	0	0	0
H18	0	0	0	0	0	Source: Field Survey 2023					

6.8.3 Deprivation in Standard of Living:

The standard of living refers to the level of income, comforts, and services available within a society or location, rather than on an individual basis. It is crucial because it significantly impacts an individual's quality of life. In the study area, cooking fuel is predominantly traditional, and approximately 43% of households are deprived in this indicator, indicating that a significant portion of the population faces challenges related to cooking fuel. Only one household is deprived in sanitation-related issues.

Table No: 6.7 Standard of Living

Household ID	Cooking fuel	Score	Sanitation	Score	Drinking water	Score	Electricity	Score	Cooking fuel	Score	Sanitation	Score	Drinking water	Score	Total
H1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H5	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H6	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H7	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H8	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H12	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H13	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H15	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H16	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H18	0	0	0	0	0	0	0	0	0	0	1	0.05	0	0	0.05
H19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H20	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H21	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H24	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H26	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H27	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H29	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H30	1	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0.05
H31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Field Survey 2023

6.9 Multidimensional Poverty:

The index measures the percentage of households in a country that experience deprivation across three dimensions: monetary poverty, education, and basic infrastructure services. These services encompass access to drinking water, electricity, sanitation, house ownership, and cooking fuel, among others, to provide a comprehensive view of poverty.

The Alkire-Foster methodology is employed in this project for measuring multidimensional poverty. This approach serves as a general framework for assessing multidimensional poverty. It identifies individuals as either poor or not poor by applying a dual cut-off within each component indicator. This process determines who is 'deprived' in a specific indicator. The data from all indicators are then aggregated to assign a deprivation score to individuals experiencing multidimensional poverty. The AF methodology extends the well-recognized Foster-Greer-Thornback (FGT) class of poverty measures, offering several technical and practical benefits that make it a preferable choice for estimating non-monetary poverty. Deprived in only two indicators, while others are not deprived in certain indicators. Specifically, the findings show that 42.86% of households experience deprivation in terms of cooking fuel, 17.14% in terms of nutrition, and only one household (H18) is deprived in the category of assets.

Table No: 6.8 Standard of Living							
Household ID	Deprivation Score	Censored Deprivation Score	Remarks	Household ID	Deprivation Score	Censored Deprivation Score	Remarks
H1	0	0	No Deprivation	H19	0	0	No Deprivation
H2	0	0	No Deprivation	H20	0.05	0	Deprived In One Indicator
H3	0	0	No Deprivation	H21	0.05	0	Deprived In One Indicator
H4	0	0	No Deprivation	H22	0	0	No Deprivation
H5	0.05	0	Deprived In One Indicator	H23	0	0	No Deprivation
H6	0.05	0	Deprived In One Indicator	H24	0.05	0	No Deprivation
H7	0.05	0	Deprived In One Indicator	H25	0	0	No Deprivation
H8	0.05	0	Deprived In One Indicator	H26	0.21	0	Deprived In Two Indicators
H9	0	0	No Deprivation	H27	0.05	0	Deprived In One Indicator
H10	0	0	No Deprivation	H28	0	0	No Deprivation
H11	0	0	No Deprivation	H29	0.05	0	Deprived In One Indicator
H12	0.05	0	Deprived In One Indicator	H30	0.21	0	Deprived In Two Indicators
H13	0.21	0	Deprived In Two Indicators	H31	0	0	No Deprivation
H14	0	0	No Deprivation	H32	0	0	No Deprivation
H15	0.05	0	Deprived In One Indicator	H33	0.16	0	Deprived In One Indicator
H16	0.21	0	Deprived In Two Indicators	H34	0	0	No Deprivation
H17	0.16	0	No Deprivation	H35	0	0	No Deprivation
H18	0.05	0	No Deprivation	Source: Field Survey 2023			

6.10 Deprivation Status:

According to the Alkire-Foster methodology, households in this area can be classified into distinct categories. A significant 58% of households belong to the first category, signifying that they are not deprived in any of the indicators considered. However, the remaining 42% of households experience deprivation, albeit not in multiple indicators simultaneously. Among this subset, 31% of households face deprivation in a single indicator, specifically concerning access to cooking fuel. Among the deprived households, 11% confront deprivation in two indicators, namely cooking fuel and the nature of the house. It's crucial to emphasize that the 42% of deprived households might not possess comprehensive awareness of the challenges associated with cooking fuel. This lack of awareness can potentially lead to detrimental impacts on human health and the environment.

Table No: 6.9 Poverty Status		
Deprivation status	No of Households	% of Households
No derivation	20	58%
Deprivation in one indicator	11	31%
Deprivation in two indicators	4	11%
Source: field survey 2023		

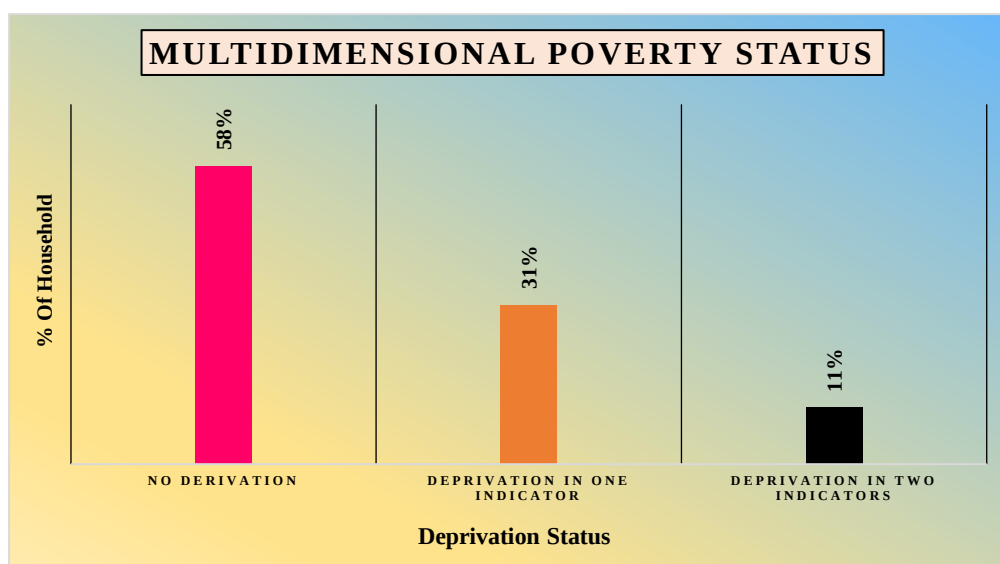


Fig No: 6.3 Poverty Status

CHAPTER –VII

Assessment of available Urban Amenities

7.0 Introduction:

An urban area, built up area or urban agglomeration is a human settlement with a high population density and infrastructure of built environment. Urban areas are created through urbanization and urban morphology. As cities, town, conurbation as suburbs. Urban area is created and further developed various purposes, including analysing population density and urban sprawl. Unlike an urban area a metropolitan area includes not only urban area, but also satellite cities plus intervening rural land that is socio economic connected to the urban core city, typically by employment through commuting, with urban core being primary labour market. Urban amenities urban facilities such as green space, parking facilities, transport and any other urban facilities, transport and any other urban facility that the state government may, on the recommendation of the authority, specify to be an urban amenity, but does not include infrastructure development work. Urban areas mean the area covered by all municipal corporation and other municipalities including the area falling under in various urban development authorities. Urban means a geographic area falling under in various urban development authorities. Urban amenities can increase desirability and competition for real estate in an area. This in future increases the rent the property owners can achieve. Higher achievable can allow developers to consider larger scale, higher quality real estate projects. Urban amenities are understood in this research to mean specific urban facilities that contribute to the urban living experience of resident.

People pay more to have access to urban amenities. For example, houses close to parks are generally more valuable. Park, school, small retail and transit are some of them amenities that make for a rich urban experience, when considering development and re-development potential it is important to also consider how investment, but and private can change the desirability of an area. A package of urban amenities can increase desirability and competition for real estate in an area. These in turn increase the rent that property owners can achieve. Higher achievable rents can allow developers to consider larger scale, higher quality real estate project impact of amenities can be quite complicated often times urban amenities are not present by themselves, but rather areas have several different amenities.

7.1 Source of Drinking Water:

In the study area of Haldia municipality, the provision of safe drinking water to its residents has been a crucial necessity. Initially, this was accomplished through community water taps and hand pumps. Recently, however, significant progress has been made as Haldia municipality introduced a piped water supply system in the study areas. Despite these improvements, a notable observation is that approximately 82.86% of the population still relies on hand pumps for their drinking water, while 8.57% of households utilize community water taps. Additionally, 8.57% of households have opted for submersibles to purify their water. Consequently, while the study area has made significant strides towards achieving universal access to safe drinking water, there remains room for further enhancements.

Table No: 7.1 Source of Drinking Water	
Sources	Household (%)
Piped Water at home	0
Community Water Tap	8.57
Hand pump	82.86
Open Well	
Any other source	8.57
Source: Field Survey 2023	

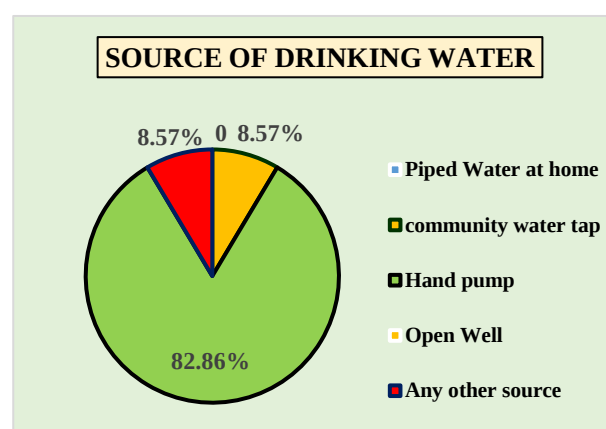


Fig No: 7.1 Source of Drinking Water

7.2 Electrification Status:

Haldia municipality to provide energy access to all household's electricity connection to all remaining un-electrified households in study area (ward no-18) to archived universal household electrification .in the study area all households have electricity connection. So, the study area successfully achieved universal household electrification.

Table No.7.2 Electrification Status	
Use of electricity	Household (%)
Yes	100%
No	0%
Source: Field Survey 2022	

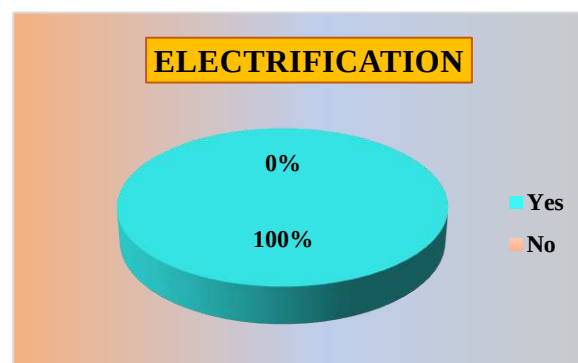


Fig No: 7.2 Electrification Status

7.3 WASTE COLLECTION SYSTEM:

It is the transfer of solid waste from the point of use and disposal to the point of treatment or landfill. Waste collection also includes the curb side collection of recyclable materials that technically are not waste, as part of a municipal landfill diversion program. The overall household in study area about 57.14% houses have door step waste collection system and 42.86% houses have no collection system.

Table No: 7.3 Waste Collection System	
Sources	Household (%)
Door step	57.14%
No collection system	42.86%
Source: Field Survey 2023	

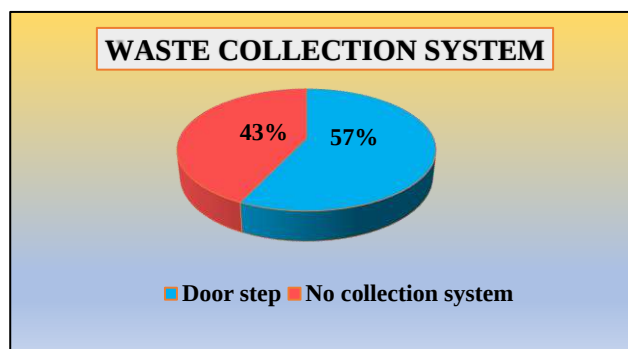


Fig No: 7.3 Waste Collection System

7.4 Medical Facilities:

Health facilities are places that provide healthcare. A good healthcare infrastructure improves the quality of life of citizens. Hospitals are the lifeline of any city or place. They are a mirror to the strides made towards development and growth. Healthcare is of vital importance to human life and the progress made in health care services bears a very critical identification of the efforts being made for the wellbeing of citizens. In haldia municipality, there twelve nursing home and four hospitals are located. The Haldia Development Authority also plays a very important and active role in providing quality healthcare service to the citizens of Haldia.

7.5 Household Assets:

In this area, household wealth is represented by various combinations of assets. The survey reveals that mobile phones and televisions are the predominant household assets. Among these, mobile phones, electric fans, and televisions stand out as the most prevalent household assets, present in every single household surveyed. This 100% ownership rate underscores the substantial significance of these assets in the local context. Notably, mobile phones have emerged as a widely adopted communication tool, further solidifying their status as a popular and essential asset.

Table No: 7.4 Household Assets	
VARITIES OF ASSETS	HOUSEHOLD (%)
Mobile	100%
Television	100%
Water filter	11.43%
Wall clock	71.43%
Computer	42.86%
Refrigerator	71.43%
Electric fan	100%
Bike	71.43%
Bi-cycle	100%
Radio	5.71%
Source: Field Survey 2023	

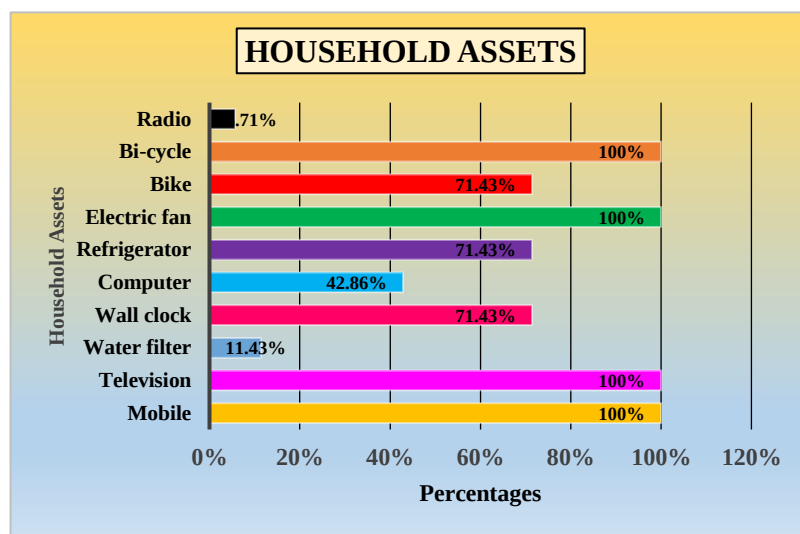


Fig No: 7.4 Household Assets

7.6 Public Distribution System:

The public distribution system (PDS) contributes significantly in the provision of food security. The operational responsibilities including allocation within the State, identification of eligible families, issue of Ration Cards and supervision of the functioning of Fair Price Shops (FPSs) etc., rest with the **State Governments**. The public distribution system in the country enables the supply of food grains to the poor at a subsidiary. In this study area all households are access PDS.

Table No: 7.5 Public Distribution System	
Received Facilities	Percentage (%)
YES	100%
NO	0
Source: Field Survey 2023	

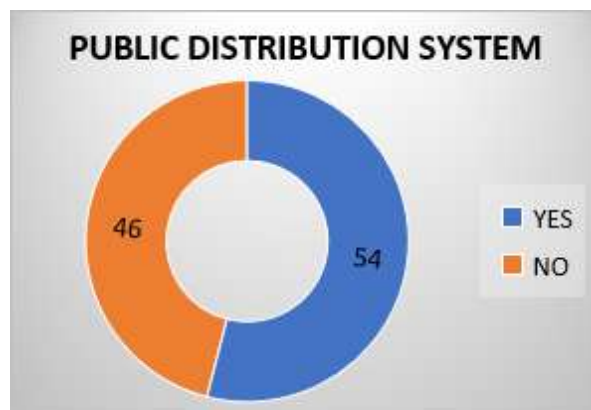


Fig No: 7.5 Public Distribution System

7.7 Access to Toilet:

Based on the field data collected, it is evident that households within the study area utilize toilets equipped with flush systems that are connected to septic tanks. This connection to septic tanks is a common feature across all houses in the area. Remarkably, the study findings reveal that every household in the area enjoys 100% access to toilet facilities.

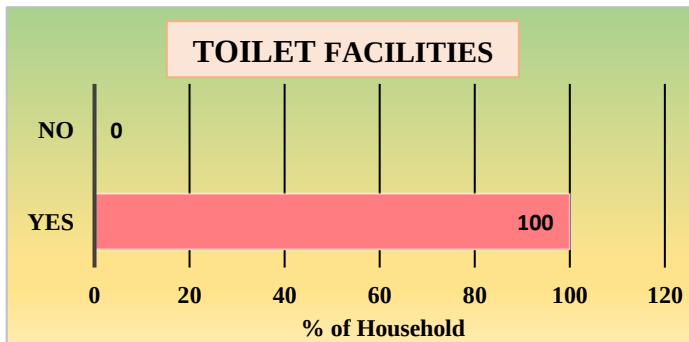


Table No:7.6 Toilet Facilities	
Received Toilet Facilities	(%)
YES	100
NO	0
Source: Field Survey 2023	

Fig No: 7.6 Toilet facilities

7.8 Urban Amenities

Urban Amenities means urban facilities such as water facilities, parks, playgrounds, green spaces, parking facilities, public Wi-Fi facilities, public bus transport, bus shelters, taxi and rickshaw stand, libraries, affordable hospitals, cultural centres, recreation centres, stadium, sports complex and any other urban facility that the State Government may, on the recommendation of the Authority, specify to be an urban amenity, but does not include infrastructure development work;

the west Bengal town and country (*planning and development)act ,1979 as amended up to date provides to Haldia the basis for preparation and amendment of land use and development control plans and procedure for their statutory approval.

In Ward No. 18 of Haldia Municipality, we will now examine the urban amenities available. Notably, there is a prominent high school known as Chakdwipa High School within this area. Additionally, four primary schools are also present, namely: Barsoutan Chak Primary School, Chakdwipan Bord Primary School, Chakdwipa Andulia Primary School, and Manichak Primary School. Alongside these, there are four more primary schools

The comprehensive education facilities observed within this ward indicate a robust infrastructure for learning and education. With the presence of both high school and primary school options, the local community benefits from a well-rounded education system. This underscores the commendable educational provisions available in Ward No. 18, signifying an area where access to quality education is readily accessible

Health Center-

Health centres provide access to basic health care services in the communities that need them most. Health centres are community-based and patient-directed organizations that provide affordable, accessible, high-quality primary health care services to individuals and families, including people experiencing homelessness, agricultural workers, residents of public housing, and veterans.

Health centres integrate access to pharmacy, mental health, substance use disorder, and oral health services in areas where economic, geographic, or cultural barriers limit access to affordable health care. Health centres reduce health disparities by emphasizing coordinated care management of patients with multiple health care needs and the use of key quality improvement practices, including health information technology. In ward no-18 Haldia municipality), here one health centre is located. Namely-Brajlal Chak Sc Health Sub Canter.

Bus Stop-

A bus stop is a place where buses stop for passengers to get on and off the bus. The construction of bus stops tends to reflect the level of usage, Mainly a good bus facilities indicates communication system, the construction of bus stop tends to reflect the level of where stops at busy locations. Bus facilities indicates how are transport. Here we can see

two bus stoppage (Andulia, Brajalal Chak) and one taxi stand are there in ward no-18, in Haldia municipality.

Play Ground-

A playground, play park, or play area is a place designed to provide an environment for children that facilitates play, typically outdoors. While a playground is usually designed for children, some are designed for other age groups, or people with disabilities. A playground might exclude children below a certain age. In this ward one play ground, one green space are present.

In land use planning urban green space is open space areas reserved for parks and other green space including plant life, water features also reflected to as blue spaces and other kind of natural environment.

Table No: 7.7 Urban Amenities		
Urban amenities	No	%
Educational Institution	9	60%
Bus stand	2	13%
Health Centre	1	6.66%
Play Ground	1	6.66%
Green Space	1	6.66%
Taxi Stand	1	6.66%
Source: Source: Field Survey 2023		

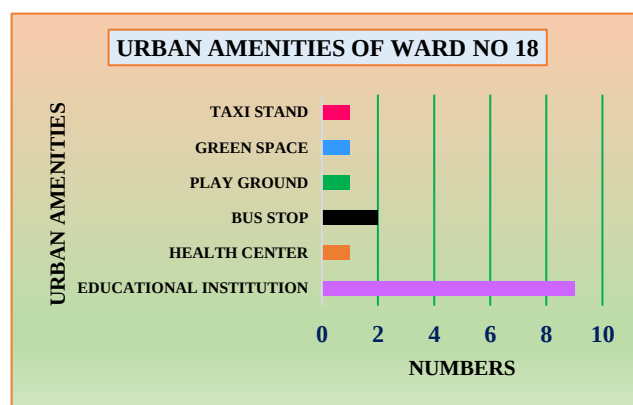


Fig No: 7.7 Urban Amenities

CHAPTER-VIII

Major Findings and Conclusion

8.1 Major Findings:

1. The map of ward no. 18 in Haldia indicates a uniform local elevation across the entire region, with all areas being flat.
2. An examination of the land use and land cover map spanning from 2000 to 2022 reveals notable changes. Agriculture land, built-up areas, and water bodies have expanded, while natural vegetation has diminished due to pressures from agricultural activities, industrialization, and population growth.
3. The population trends for the years 2000 to 2022 show a consistent increase over time.
4. Analysing age composition data unveils that the adult population constitutes a significant percentage (71.2%), while the child population is comparatively lower (12%). The dependency ratio stands at 34.40%.
5. Urban amenities such as access to drinking water, electricity, waste collection, medical facilities, public distribution services, and toilet facilities are readily available in ward no. 18
6. A multidimensional poverty analysis indicates that there is no deprivation in terms of antenatal care and child adolescent mortality. However, 17.4% of the population is deprived in the context of nutrition.
7. The education facilities in the area are notably commendable.
8. The primary occupations in this region are employment in companies and businesses. Most of the population falls within the income range of 10000 to 20000, signifying a moderate lifestyle.
9. A significant 93% of the population is directly or indirectly linked to a bank account.
10. In this locality, all households have their own homes. Approximately 80% of households are constructed with durable materials (pucca), while the remaining 20% are semi-pucca
11. A considerable percentage of households (45.71%) rely on fuel wood for their cooking needs.
12. Sanitation facilities in this area are notably well-maintained.

8.2 Limitations:

1. Poverty surveys depend on self-reported data, which can be prone to errors due to respondents' misunderstanding, misreporting, or reluctance to share accurate information about their income and living conditions.
2. Poverty surveys often rely on sampling techniques to gather data. If the sampling is not representative of the entire population of Haldia, the survey results may not accurately reflect the true poverty situation.
3. Poverty surveys provide a snapshot of poverty at a specific point in time. They might miss fluctuations or changes in poverty levels over time, which could be caused by seasonal variations, economic shocks, or policy interventions.
4. The indicators used in poverty surveys might not capture the full complexity of poverty. Some important dimensions of poverty, such as access to quality healthcare, education, and social services, could be inadequately represented.
5. Some individuals or households might be living in hidden or informal conditions that are difficult to capture through traditional survey methods, leading to an underestimation of poverty levels.
6. Poverty surveys might not account for regional variations within Haldia. Different neighbourhoods or areas could have varying poverty levels, and the survey might not capture these nuances adequately.
7. Poverty is a dynamic phenomenon, with people moving in and out of poverty over time. Surveys might miss these transitions, leading to an incomplete understanding of poverty dynamics.
8. Poverty surveys might lack context about the underlying causes of poverty, making it challenging to develop effective policies and interventions based solely on survey results.

To address these limitations, a comprehensive approach that combines quantitative survey data with qualitative research, contextual understanding, and continuous monitoring is essential for a more accurate assessment of poverty in Haldia

8,3 Conclusion:

In conclusion, the multidimensional poverty analysis conducted in Haldia has yielded a comprehensive understanding of the intricate dynamics of poverty within the region. Going beyond the conventional income-centric assessment, this analysis has illuminated the diverse dimensions through which poverty manifests and affects the lives of Haldia's residents. By meticulously examining indicators spanning health, education, living standards, and social inclusion, a holistic portrayal of poverty has emerged. The findings underscore that poverty is a multifaceted issue, stemming from factors such as limited access to quality healthcare, education, and essential services. Particularly insightful was the identification of vulnerable groups based on age, gender, ethnicity, and geographical location, revealing pockets of concentrated deprivation that warrant targeted interventions. The collaborative engagement of local communities, governmental bodies, NGOs, and researchers has fortified the accuracy and depth of this analysis. The participatory approach not only validated the outcomes but also contextualized the findings, providing a richer perspective on the dynamics of poverty within Haldia's unique context. Ultimately, this analysis reflects Haldia's dedication to unravelling the multifaceted nature of poverty, underscoring a collective commitment to fostering an equitable and prosperous community. It lays the groundwork for transformative change, fostering a future where poverty's grip is loosened, and opportunities are extended to all residents of Haldia.

BIBLIOGRAPHY

1. Ahmad, M. Z., Hussain, T., & Kumar, M. (2012). Pattern of Poisoning Reported at BC Roy Hospital, Haldia Purba Midnapur, West Bengal. *Medico-Legal Update*, 12(2).
2. .Banik, S. D., & Chatterjee, S. (2010). Nutritional status of school going children and adolescents aged 9-13 years at Haldia in West Bengal, India. *Paediatrica Indonesiana*, 50(3), 159-65
3. Bird, K., Chabé-Ferret, B., & Simons, A. (2022). Linking human capabilities with livelihood strategies to speed poverty reduction: Evidence from Rwanda. *World Development*, 151, 105728.
4. C Antony, G. M., & Laxmaiah, A. (2008). Human development, poverty, health & nutrition situation in India. *Indian Journal of Medical Research*, 128(2), 198-205.
5. Chatterjee, S., Giri, A., Biswas, W., & Bauri, M. K. (2022). Analytical study on variation of healthcare status in Haldia city of West Bengal, India. In *Contemporary Medical Biotechnology Research for Human Health* (pp. 205-214). Academic Press.
6. Chattopadhyay, A., Sethi, V., Nagargoje, V. P., Saraswat, A., Surani, N., Agarwal, N., ... & Unisa, S. (2019). WASH practices and its association with nutritional status of adolescent girls in poverty pockets of eastern India. *BMC women's health*, 19(1), 1-13.
7. Choudhuri, P., & Desai, S. (2020). Gender inequalities and household fuel choice in India. *Journal of cleaner production*, 265, 121487.
8. Das, K. C. Assessment of Quality of School Library Products and Services: A Survey of Students with Special Reference to Haldia City.
9. . Dasgupta, T., & Chattopadhyay, R. N. (2008). Poverty portrayal in the context of rural bengal: a case-study of Purulia district of West Bengal. *Studies of Tribes and Tribals*, 6(1), 1-11.
10. Duari, B. (2019). *Geography of Purba Medinipur*. Educreation Publishing.
11. . D. P. (2015). A study of Correlations between growth and development of physical active children (5-8 years) with different race (Hindu, Muslim and Behari) of Haldia at Purba Midnapur in West Bengal.
12. Fernandez, B. (2010). Poor practices: Contestations around ‘below poverty line ‘status in India. *Third world quarterly*, 31(3), 415-430.
13. Gupta, I., & Mitra, A. (2004). Economic growth, health and poverty: An exploratory study for India. *Development policy review*, 22(2), 193-206.
14. . “India: Urban Poverty Report 2009”. Ministry of Housing and Urban Poverty Alleviation, Government of India.
15. Khanra, P., Bose, K., & Chakraborty, R. (2021). Mother’s education level is associated with anthropometric failure among 3-to 12-year-old rural children in Purba Medinipur, West Bengal, India. *Journal of Biosocial Science*, 53(6), 856-867.
16. . Kulsum, K., & Majumdar, K. K. (2022). A study on socio-demographic and obstetric profile, contraceptive use and reasons for medical termination of pregnancy among women attending medical termination of pregnancy clinic in Purba Medinipur district

- of West Bengal, India. *International Journal of Community Medicine and Public Health*, 9(7), 2981.
17. Leal Filho, W., Henrique Paulino Pires Eustachio, J., Dinis, M. A. P., Sharifi, A., Venkatesan, M., Donkor, F. K., ... & Vargas-Hernández, J. (2022). Transient poverty in a sustainable development context. *International Journal of Sustainable Development & World Ecology*, 29(5), 415-428.
 18. Lee, J., Taherzadeh, O., & Kanemoto, K. (2021). The scale and drivers of carbon footprints in households, cities and regions across India. *Global Environmental Change*, 66, 102205.
 19. Narayan, D., Sen, B., & Hull, K. (2009). Moving out of poverty in India: An overview. *The Promise of Empowerment and Democracy in India.* " Washington, DC: World Bank.
 20. Rafi, M., Naseef, M., & Prasad, S. (2021). Multidimensional energy poverty and human capital development: Empirical evidence from India. *Energy Economics*, 101, 105427.
 21. Rajashree, A. D. S. D. S., & Saha, G. I. D. A. P. (2021). Evaluation of Impact of Lifestyle and Educational Status on Periodontal Health: A Cross Sectional Study.
 22. Samanta, P., & Samanta, P. K. (2020). Socio-economic and environmental study of a biodiversity rich village Hanrijhama in the district Purba Medinipur, West Bengal, India. *World Scientific News*, (146), 72-94.
 23. Saswati, S., & Dasgupta, S. K. (2011). Study on four new species of the genus *Atrichopogon* Kieffer (Diptera: Ceratopogonidae) from Haldia under coastal region of East Medinipur district (West Bengal), India. *Journal of Natural History (India)*, 7(1), 29-34
 24. Sardar, J. C., Sau, A., Sardar, M., & Karmakar, P. R. (2020). Mental Health Status of Sailors of Haldia Dock Complex, West Bengal. *Age (Years)*, 21(30), 31-40.
 25. Sengupta, S. (1997). DEVELOPMENT IN WEST BENGAL. *Indian development: Selected regional perspectives*, 129.
 26. Singh, P., & Pattanaik, F. (2018). Economic status of women in India: paradox of paid–unpaid work and poverty. *International Journal of Social Economics*, 46(3), 410-428.
 27. Yadav, N. K., Mitra, S. S., Santra, A., & Samanta, A. K. (2023). Understanding Responses of Atmospheric Pollution and its Variability to Contradicting Nexus of Urbanization–Industrial Emission Control in Haldia, an Industrial City of West Bengal. *Journal of the Indian Society of Remote Sensing*, 51(3), 625-646.

WEB PAGES:

1. <https://www.iastoppers.com/articles/urban-poverty-in-india-mains-article> browsed on03.04.2023
2. <https://taxguru.in/finance/poverty-critical-analysis-india.html> browsed on03.04.2023
3. https://rural.nic.in/sites/default/files/WorkingPaper_Poverty_DoRD_Sept_2020. browsed on03.04.2023
4. https://www.nipfp.org.in/media/medialibrary/2014/10/THE_STATE_OF_INDIA_URBAN_POVERTY browsed on05.04.2023
5. https://www.ucl.ac.uk/dpuprojects/drivers_urb_change/urb_society/pdf_liveli_vu_lnera/DFID_Loughhead_Reducing_Urban_Poverty_India browsed on05.04.2023
6. <https://core.ac.uk/download/pdf/286044649>. browsed on05.04.2023
7. <http://rcueslucknow.org/reports/UrbanPovertyAlleviation> browsed on09.04.2023
8. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/389241468283507057/a-comprehensive-analysis-of-poverty-in-india> browsed on10.04.2023
9. https://www.oxfamindia.org/workingpaper/6115?gclid=EAIaIQobChMIpJzv6KLpGAMV2TCDAx1-mwPtEAMYASAAEgIcOvD_BwE browsed on10.04.2023
10. https://link.springer.com/chapter/10.1007/978-981-13-1537-4_7 browsed on15.04.2023
11. <https://www.livemint.com/Opinion/dXPv8bp492mKX9rirXX0hK/Spatial-poverty-in-West-Bengal.html> browsed on19.02.2023
12. https://mpira.ub.uni-muenchen.de/64493/1/MPRA_paper_64493.pdf browsed on19.04.2023
13. <https://www.jstor.org/stable/4377446> browsed on19.04.2023
14. <https://journals.openedition.org/belgeo/59421> browsed on19.04.2023
15. <https://www.epw.in/journal/1987/35/special-articles/poverty-and-employment-characteristics-urban-households-west-bengal> browsed on25.04.2023
16. <https://www.iastoppers.com/articles/urban-poverty-in-india-mains-article> browsed on25.04.2023
17. <https://www.habitatforhumanity.org.uk/blog/2018/08/causes-urban-poverty-india/> browsed on25.07.2023
18. <https://india.un.org/en/171267-poverty-and-urbanisation> browsed on25.07.2023
19. <https://timesofindia.indiatimes.com/blogs/in-the-name-of-development/cities-of-the-poor-a-view-on-urban-poverty-in-india/> browsed on25.07.2023
20. https://populationmatters.org/the-facts-development/poverty/?gclid=EAIaIQobChMIs4fnvKTPgAMVWnsrCh33ywgSEAMYASAAEgIbJPD_BwE browsed on25.07.2023