



Raiganj Surendranath Mahavidyalaya

Sudarshanpur, Raiganj, Uttar Dinajpur
(Affiliated to University of Gour Banga)
Recognized by UGC U/S 2(f) & 12(B)
NAAC accredited College with "B**" Grade

RSM INTERNAL QUALITY & ENVIRONMENTAL AUDIT 2022 - 2023



INTERNAL QUALITY & ENVIRONMENT AUDIT 2022 - 23

RAIGANJ SURENDRANATH MAHAVIDYALAYA
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MANAGEMENT SYSTEM CONSULTANCY

Service Provided: Legal, Safety, Fire, Environment, Energy Audit and ISO, Information Security, Automotive, NABL, NABH, CSR, Food, Medical Certification and Training services

Quality Audit Certificate

This Certificate is awarded to

RAIGANJ SURENDRANATH MAHAVIDYALAYA

As part of the Institution's Initiatives for a Healthy & Sustainable College the
audit was conducted.

We appreciate the immense efforts taken by Staff and Students towards the

Efficient Quality Management of Premise.

Issued on April, 2022 valid till March, 2023

Anand K. Mandal



MANAGEMENT SYSTEM CONSULTANCY

Authorization:

- ISO 14001:2015 (Environment) (CQI-IRCA Delegate ID: 173839, Certificate No. 46957) Lead Auditor Certificate
- ISO 9001:2015 (Quality) (NABET Accredited, Certificate No. IRCLASS/QMS/2016/02/03/01 of 07) Lead Auditor Certificate
- ISO 45001:2018 (OHSAS) (CQI-IRCA Delegate ID: 111285, Certificate No. 44532) Lead Auditor Certificate.
- Certified PG Diploma in Environment and Sustainable Development (En Roll No-BU/13/706432) from Bundelkhand University.
- Certified PG Diploma in Fire and Safety Management from Jawaharlal Nehru Technological University Hyderabad (Cert. No. 15359120506)

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MANAGEMENT SYSTEM CONSULTANCY

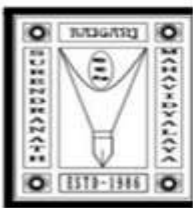
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About the College

Raiganj Surendranath Mahavidyalaya was established in 1986 with the intention of meeting the educational needs of rural and suburban youth in the surrounding area. The land of the College was donated by Mr. Shailendra Narayan Sen in loving memory of his father Surendranath Sen and hence the College was named as Raiganj Surendranath Mahavidyalaya. Although initially planned as a Women's College, it later evolved into a coeducational undergraduate degree college affiliated under the University of North Bengal. In 2008, the college became affiliated with the University of Gour Banga. It is currently the largest college in the district, with a student population exceeding 5000. In 2016, the college received accreditation from NAAC at the B⁺ level.

The college now offers four-year Bachelor of Arts (B.A.) and Bachelor of Science (B.Sc.) programs under the New Education Policy of 2000. Situated in the northern part of Raiganj town, the campus features a modern three-storied building with top-notch facilities, including five air-conditioned science laboratories, a library with e-resources, and two air-conditioned auditoriums, one AC Teachers' Common Room, office equipped with network, two AC Guest Room, music room, Computer Training Centres, Boys' Common Room & Girls' Common Room, two Canteen with one Dining Room, one Cheap Stores, Selfie Zone, Learning Support Centres of two Open Universities (Rabindra Bharati University & Netaji Subhas Open University) etc.

The college has shown a significant dedication to promoting academic excellence in Raiganj and its surrounding areas. It is currently enhancing opportunities in important undergraduate programs. The College offers Certificate Courses in Photography and Journalism & Mass Communication as well as Add-on courses such as Early Childhood Development and Karate Excellence. In recent years, the college has seen substantial growth in various activities, creating new opportunities in multiple areas.



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VISION AND MISSION OF THE COLLEGE

Our Vision:

28 Years young Surendranath Mahavidyalaya aims to be an institution of excellence in higher education and research through the development, innovation, and application of knowledge towards creating well-rounded, multi-skilled, and socially responsible global citizens for a people-centric ecologically sustainable model.

OUR MISSION:

- To provide students with quality educational experiences and support services that can lead to the successful completion of degrees along with imparting career-oriented education and basic skills proficiency.
- To promote academic and career success through the development of critical thinking, effective communication, creativity, and cultural awareness within a safe, accessible, and affordable learning environment.
- To meet the requisites of a demographically diverse student population, the institution embraces equity and accountability through measurable learning outcomes, ethical data-driven decision-making, and students' achievement.
- To contribute to the development of habits, attitudes, and qualities of character building, enabling students to bear worthily the responsibilities of dignified citizenship and fostering a broad, national, and secular outlook.
- To make it a regular practice to develop various skills in personality development, thereby promoting interpersonal communication and facilitating the growth of self-confidence required for all-round development of an enduring personality.


Dr. Chandan Roy

Principal, Raiganj Surendranath Mahavidyalaya

Principal
Raiganj Surendranath Mahavidyalaya
Raiganj, U/D



MEMBERS OF INTERNAL QUALITY AND ENVIRONMENTAL AUDIT COMMITTEE

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Principal, Raiganj Surendranath Mahavidyalaya

Chandan Roy

2. **Dr. Rakhee Das Biswas**

Associate Professor & H. o. D., Botany

Rakhee Das Biswas

3. **Dr. Priyanjalee Banerjee**

Assistant Professor & H. o. D., Zoology

Priyanjalee Banerjee

4. **Dr. Abdus Sabur**

Assistant Professor of Botany

Abdus Sabur

5. **Mr. Tarik Anwar**

SACT in Department of Geography

Tarik Anwar

6. **Md. Azmalul Alam**

SACT in Department of Botany

Md. Azmalul Alam



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1. Introduction

A Quality and green audit, or environmental audit, is a detailed check of how well a college follows environmental rules and manages its activities. The main goal is to look closely at how the college impacts the environment both inside and around its campus. This audit helps create a campus that is environmentally friendly and sustainable. The process involves systematically identifying, measuring, recording, and analysing different environmental aspects of the college. The audit helps the institution track activities that might harm the environment or people's health, guiding the college toward more sustainable practices.

With the current issues of global warming and climate change, caused by the excessive use of natural resources like minerals, energy, water, and forests, it is essential to regulate their use. Proper management of these resources helps reduce the negative impact on the local environment. A Quality and green audit provides a structured approach to using resources efficiently and raises awareness among the college's stakeholders—students, staff, and management—about the importance of maintaining a pollution-free and sustainable environment. The National Assessment and Accreditation Council (NAAC) in New Delhi requires all higher educational institutions to submit an annual Quality and green audit Report. Moreover, it is part of these institutions' Corporate Social Responsibility (CSR) to help reduce global warming by lowering their carbon footprint.

1.1. Goals and Objectives

The importance of conducting a Quality and green audit in a college has grown significantly, particularly as a tool for the college to assess itself. It shows how the college is playing its part in solving current environmental problems. The college has been actively working to keep its environment clean and healthy, with its goals and objectives focused on identifying, evaluating, and prioritizing efforts for environmental sustainability, following relevant laws, policies, and standards.

The main goals of a Quality and green audit are:

- To identify and record the environmentally friendly practices followed by the college.
- To find out the strengths and weaknesses of these practices.
- To analyse any problems found and suggest possible solutions.
- To raise environmental awareness among everyone on campus.
- To see how well stakeholders are using resources sustainably.
- To encourage environmental education and assess risks through a systematic management approach.



- To save money by using resources more efficiently.
- To set standards for environmental protection initiatives.
- To enrich the curriculum with practical experiences related to sustainability.
- To encourage a sense of personal and social responsibility among students and staff by involving them in the development of the college's environmental profile.

The specific objectives of the Quality and green audit include:

- Mapping the location of the college.
- Recording the variety of plants and animals on the college campus.
- Analysing the conditions of the environment, such as weather, air, water quality, and noise levels.
- Documenting the bioenergy diversity on campus.
- Estimating the effectiveness of waste disposal systems.
- Assessing the college's energy needs.
- Reporting on the green initiatives taken in the last five years.

1.2. METHODOLOGY

The purpose of the quality and green audit of Raiganj Surendranath Mahavidyalaya is to ensure that the practices followed in the campus are in accordance with the Green Policy of the country. The methodology includes: collection of data, physical inspection of the campus, observation and review of the documentation and data analysis.

2. Quality and Green Auditing: Observations

An environmental audit provides a quick overview of how well a campus is following environmental laws and regulations. This report outlines the best environmental practices observed and offers suggestions for improving the institution's environmental awareness.



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2.1. Geographical Location of Raiganj Surendranath Mahavidyalaya

Raiganj Surendranath Mahavidyalaya is located in Raiganj, a town in the Uttar Dinajpur district of West Bengal, India. The college is situated in a region that is part of the larger Indo-Gangetic plains, which is known for its fertile land and significant agricultural activities. Raiganj itself is positioned at approximately 25.6167° N latitude and 88.1167° E longitude. The town is well-connected by road and rail, making it accessible from various parts of West Bengal and nearby states.

The college's campus is located at Northern side of Raiganj, providing easy access for students from the surrounding areas. The institution is in a moderately urban area, surrounded by both residential neighbourhoods and commercial establishments. The campus is relatively close to important local landmarks, including the Raiganj Railway Station, Siliguri More Bus stand which are some of the key points of connectivity for students commuting from different locations.

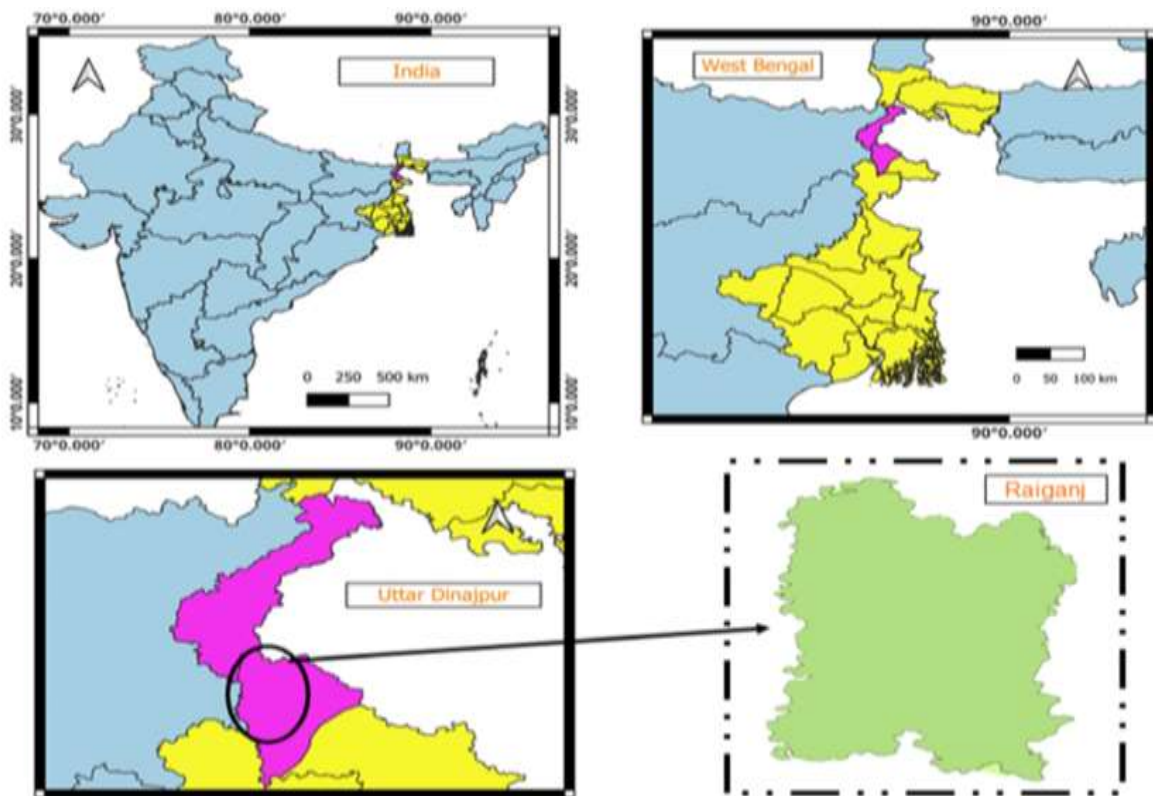


Fig 1: Location Map



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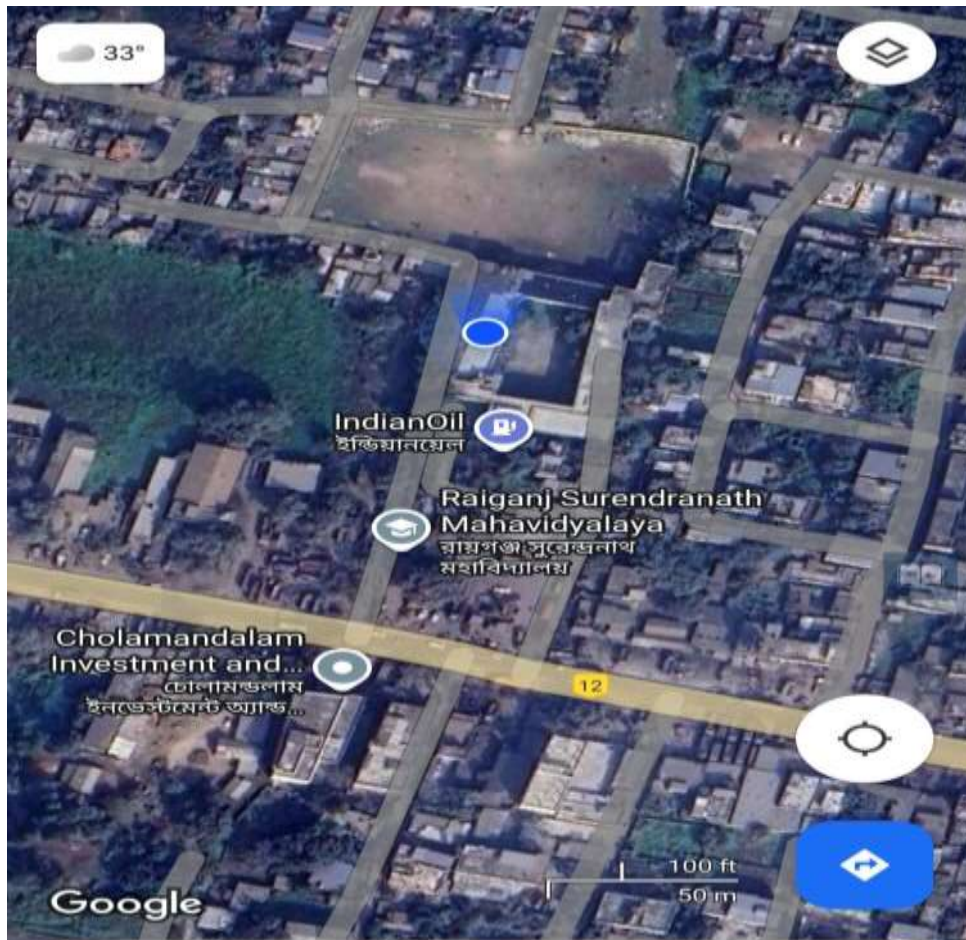


Fig 2: Satellite image of Raiganj Surendranath Mahavidyalaya



2.2. Climate

Raiganj, the district headquarters of Uttar Dinajpur in West Bengal, experiences a tropical climate characterized by distinct seasonal variations. The town, located on the banks of the Kulik River, enjoys a climate typical of the Indo-Gangetic plains, influenced by the region's alluvial soil and its proximity to the Himalayas.

The summers in Raiganj are hot and humid, with temperatures often reaching up to 40°C during the peak months of May and June. Humidity levels are high, typically hovering around 80% during the monsoon season, which follows the hot summer. The monsoon, extending from June to September, brings moderate rainfall to the region, with July and August being the wettest months, receiving approximately 353.33 mm of rainfall each. The town experiences around 24 rainy days during these months, contributing to the lush green landscape and the fertile soil of the region.

Winters in Raiganj are relatively mild and dry, with temperatures ranging between 16°C to 26°C from December to February. This season is marked by clear skies and comfortable weather, making it an ideal time for outdoor activities and agriculture, which is the backbone of the local economy. The winter months also witness a sharp drop in humidity and rainfall, with almost no significant precipitation recorded.

Overall, Raiganj's climate is conducive to the cultivation of crops like paddy, jute, and sugarcane, which thrive in the fertile alluvial soil deposited by the region's rivers. The town's climate also supports a rich biodiversity, including the famous Raiganj Wildlife Sanctuary, home to the largest population of Asian Openbill storks in the world.

Summary of Climate

Raiganj experiences a tropical climate with three distinct seasons: summer, monsoon, and winter. The summer months are hot and humid, with average temperatures ranging from 25°C to 34°C. May is typically the hottest month. The monsoon season brings significant rainfall, especially in July and August, with humidity levels often exceeding 80%. The town receives the bulk of its annual rainfall during these months. Winters are mild and dry, with temperatures ranging from 10°C to 20°C. January is usually the coolest month.



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Month	Avg. High Temp (°C)	Avg. Low Temp (°C)	Avg. Rainfall (mm)	Avg. Humidity (%)
July	30	25	350	85
August	30	25	350	85
September	31	24	250	80
October	30	22	100	75
November	27	16	20	65
December	23	12	10	60
January	22	10	10	60
February	26	13	12	55
March	31	18	20	55
April	34	22	50	60
May	34	25	90	70
June	32	25	300	80

Table 1: Climate Summary of Raiganj

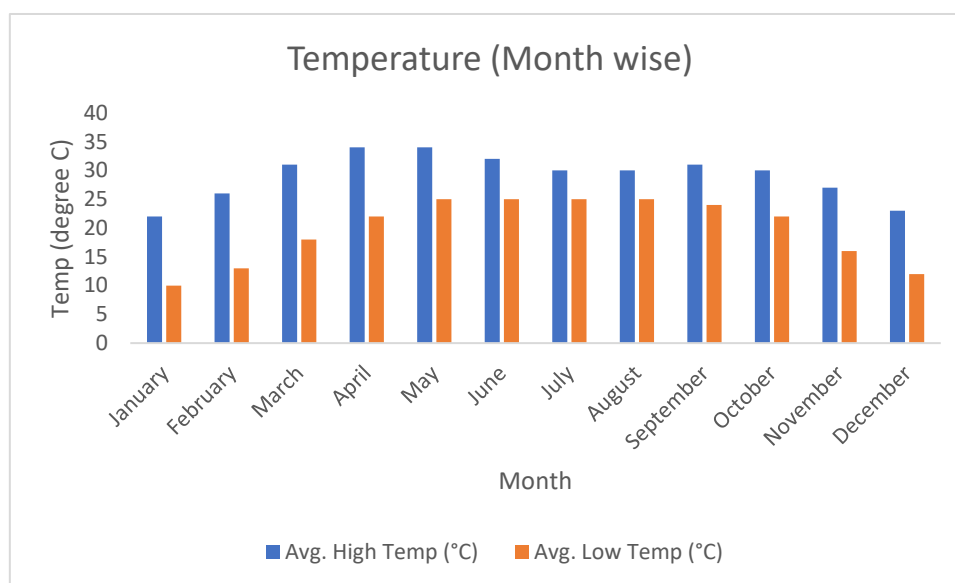


Fig 3: Month wise temperature data

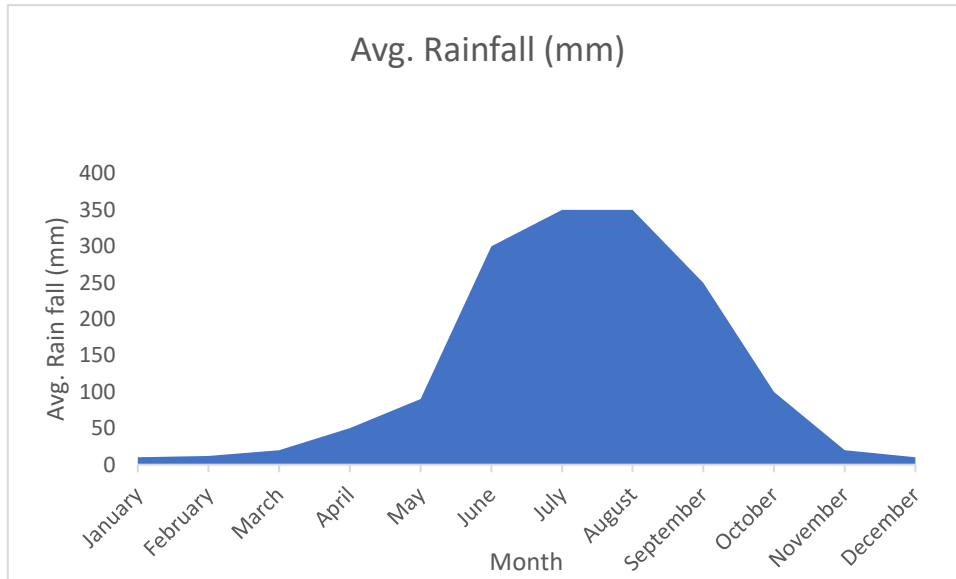


Fig 4: Month wise average rainfall

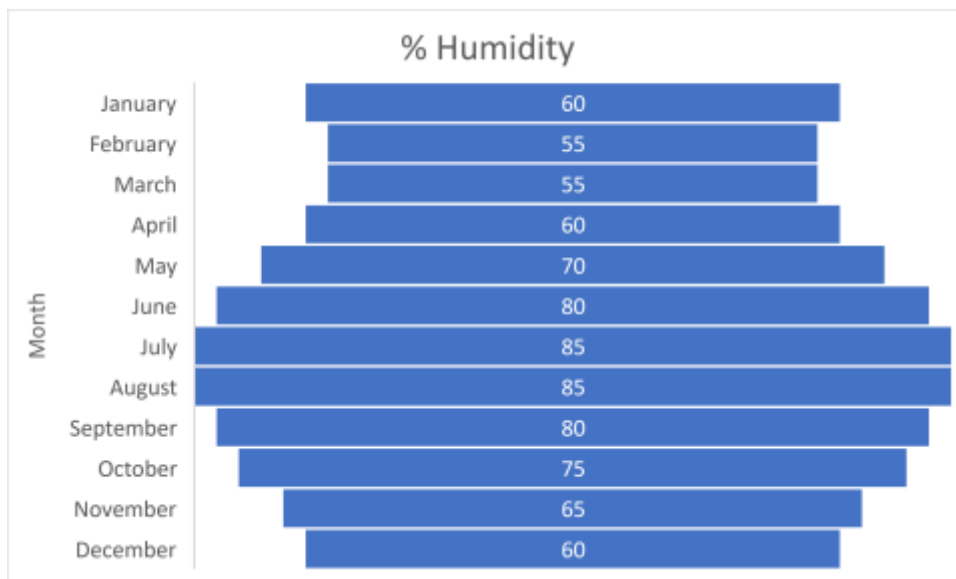


Fig 5: Month wise % humidity



Analysis:

- Raiganj experiences significant temperature fluctuations between summer and winter, with the highest temperatures in May and the lowest in January. The average high in the summer months reaches around 34°C, making it quite hot, while in winter, the average low can drop to about 10°C.
- The town receives most of its annual rainfall during the monsoon season, particularly from June to September. This period contributes to the region's agriculture but also causes high humidity, which can be uncomfortable.
- Humidity levels vary throughout the year, peaking during the monsoon season when it often exceeds 80%. In contrast, winter months are much drier with lower humidity levels, making the weather more comfortable.

Raiganj's climate is typical of the Indo-Gangetic plains, with a pronounced monsoon season and a relatively short but chilly winter. This weather pattern supports the region's agriculture, particularly the cultivation of rice and jute. However, the high humidity during the monsoon can lead to discomfort and potential health issues, while the dry winter offers a more pleasant climate. This analysis provides a comprehensive view of Raiganj's weather where our college is situated.

2.3. Soil Quality

The soil in Raiganj, Uttar Dinajpur district, West Bengal, is predominantly alluvial, comprising sand, silt, and clay. This composition supports diverse agricultural activities. The soil is generally fertile, containing essential nutrients like nitrogen (N), phosphorus (P), and potassium (K), which are crucial for crop growth and yield. The pH levels are typically neutral to slightly acidic, favourable for most crops, ensuring nutrient availability and uptake by plants.

Organic matter in the soil enhances its structure, water retention, and nutrient supply. Regular addition of organic matter through compost or green manure can further improve soil quality. However, challenges such as soil erosion, waterlogging, and nutrient depletion due to intensive farming practices can affect soil health. Implementing sustainable land management practices is essential to address these issues and maintain soil quality.

Overall, Raiganj's soil is well-suited for agriculture, but continuous efforts in sustainable practices are necessary to preserve its fertility and productivity.



2.4. Floral Diversity at Raiganj Surendranath Mahavidyalaya

The following plants are present within the college premise –

Table 2: Floral diversity at RSM

Sl. No.	Common Name	Scientific Name	Family
1.	Congo Jute	<i>Urena lobata</i>	Malvaceae
2.	Jungle geranium	<i>Ixora coccinea</i>	Rubiaceae
3.	Cycas	<i>Cycas sp.</i>	Cycadaceae
4.	Mahogany	<i>Swietenia mahogani</i>	Meliaceae
5.	Kadamba	<i>Neolamarckia cadamba</i>	Rubiaceae
6.	Dronapushpi	<i>Leucas cephalotes</i>	Lamiaceae
7.	Indian gooseberry	<i>Phyllanthus emblica</i>	Phyllanthaceae
8.	Neem	<i>Azadirachta indica</i>	Meliaceae
9.	Sugar Apple	<i>Annona muricata</i>	Annonaceae
10.	Arjuna	<i>Terminalia arjuna</i>	Combretaceae
11.	Bougainvillea	<i>Bougainvillea glabra</i>	Nyctaginaceae
12.	Arrowroot	<i>Canna sp.</i>	Cannaceae
13.	Okra	<i>Abelmoschus esculentus</i>	Malvaceae
14.	Soap Apple	<i>Manilkara Zapota</i>	Sapotaceae
15.	Cactus	<i>Cereus Jamacaru</i>	Cactaceae
16.	Fishtail Palm	<i>Carryota mitis</i>	Arecaceae
17.	Crepe Jasmine	<i>Tabernaemontana divaricata</i>	Apocynaceae
18.	Jackfruit	<i>Artocarpus heterophyllus</i>	Moraceae
19.	Olive	<i>Olea europaea</i>	Oleaceae
20.	Dumb Cane	<i>Dieffenbachia sp.</i>	Araceae
21.	Golden Palm	<i>Dypsis lutescens</i>	Arecaceae
22.	Deodar	<i>Monoon longifolium</i>	Annonaceae
23.	Guava	<i>Psidium guajava</i>	Myrtaceae
24.	Duranta	<i>Duranta sp.</i>	Verbenaceae
25.	Oyster Plant	<i>Tradescantia spathacea</i>	Commelinaceae
26.	Red Oleander	<i>Nerium oleander</i>	Apocynaceae
27.	Banyan Tree	<i>Ficus benghalensis</i>	Moraceae
28.	Lichi	<i>Litchi chinensis</i>	Sapindaceae
29.	Pencil Cactus	<i>Euphorbia tirucalli</i>	Euphorbiaceae
30.	Poison Berry	<i>Cestrum nocturnum</i>	Solanaceae
31.	Mango Tree	<i>Mangifera indica</i>	Anacardiaceae
32.	Wind mill Palm	<i>Trachycarpus fortunei</i>	Arecaceae

Sample photographs have been appended below as **Photographic plate 1.**



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Congo Jute



Jungle geranium



Cycas



Mahogany



Kadamba



Dronapushpi



Indian gooseberry



Neem



Sugar Apple



Arjuna



Bougainvillea



Arrowroot



Okra



Soap Apple



Cactus



Fishtail Palm



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Oyster Plant



Red Oleander



Banyan Tree



Lichi



Pencil Cactus



Poison Berry



Mango Tree



Palm Tree



Crepe Jasmine



Jackfruit



Olive



Dumb Cane



Golden Palm



Deodar



Guava



Duranta



2.5. Faunal Diversity at Raiganj Surendranath Mahavidyalaya

The following animals often visit the college campus –

Table 3: Avian diversity at RSM

A- Avian Diversity

Sl. No	Common Name	Scientific name	Family
1.	House crow	<i>Corvus splendens</i>	Corvidae
2.	Common myna	<i>Acridotheres tristis</i>	Sturnidae
3.	Red-vented bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae
4.	House sparrow	<i>Passer domestica</i>	Passeridae
5.	Jungle babbler	<i>Turdoides striatus</i>	Sylviidae
6.	Black drongo	<i>Dicrurus macrocercus</i>	Dicuridae
7.	Magpie robin	<i>Copsychus saularis</i>	Muscicapidae
8.	Rock pigeon	<i>Columba livia</i>	Columbidae
9.	Purple sunbird	<i>Nectarinia asiatica</i>	Nectariniidae
10.	Black headed oriole	<i>Oriolus xanthornus</i>	Oriolidae
11.	Lesser golden-backed woodpecker	<i>Dinopium benghalense</i>	Indicatoridae
12.	Rose-ringed parakeet	<i>Psittacula krameri</i>	Psittacidae
13.	Rufous treepie	<i>Bendrocitya vagabunda</i>	Corvidae
14.	Coppersmith barbet	<i>Megalaima haemacephala</i>	Megalaimidae
15.	Baya weaver	<i>Ploceus philippinus</i>	Passeridae
16.	Common kite	<i>Milvus migrans</i>	Accipitridae



Common Crow



Common Myna



Red-vented Bulbul



Jungle Babbler



House Sparrow



Black Drongo



Magpie Robin



Rock Pigeon



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Photographic plate 2: Sample photographs of various birds visiting the college campus

P. C. – Google images

B. Diversity of Butterflies and Moths

Sl. No	Common Name	Scientific name
1.	Common Mormon	<i>Papilio polypes</i>
2.	Red Helen	<i>Papilio helenus</i>
3.	Common Jay	<i>Graphium doson</i>
4.	Common Emigrant	<i>Catop cilia Pomona</i>
5.	Common Grass Yellow	<i>Eurema hecabe</i>
6.	Psyche	<i>Leptosia nina</i>
7.	Common Banded awl	<i>Hasora chromus</i>
8.	Chocolate Pasy	<i>Junia iphita</i>
9.	Grass hopper	<i>Schistocerca americana</i>
10.	Pentatomid bug	<i>Halyomorpha halys</i>
11.	Cricket	<i>Gryllus</i>
12.	Cockroach	<i>Blatta orientalis</i>

Table 4: Insect diversity at RSM



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Common Mormon



Common Helen



Common Jay



Common Emigrant



Common Grass Yellow



Psyche



Common Banded Awl



Chocolate Pansy



Grass Hopper



Pentatomid Bug



Cricket



Cockroach

Photographic plate 3: Sample photographs of various insects visiting the college campus

P. C. – Google images



Table 5: Animal diversity at RSM

C – Diversity of other Animals

Sl. No	Common Name	Scientific name
1.	Common Toad	<i>Bufo melanostictus</i>
2.	Girgit	<i>Calotes versicolor</i>
3.	Rat Snake	<i>Ptyas mucosus</i>
4.	Bengal Rat	<i>Bandicota bengalensis</i>
5.	Indian Mole	<i>Talpa sp.</i>
6.	Indian Palm Squirrel	<i>Funambulus palmarum</i>
7.	Dog	<i>Canis familiaris</i>
8.	Cat	<i>Felis domestius</i>
9.	Mongoose	<i>Helogale Parvula</i>



Common Toad



Girgit



Rat Snake



Bengal Rat



Indian Mole



Indian Palm Squirrel



Dogs



Cat



Mongoose

Photographic plate 4: Sample photographs of various animals visiting the college campus



2.6. Water Analysis

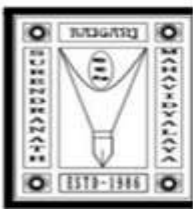
Raiganj, a town in the Uttar Dinajpur district of West Bengal, relies primarily on groundwater for drinking and domestic purposes. The water quality in Raiganj Surendranath Mahavidyalaya, Raiganj, is influenced by factors such as agricultural runoff, industrial activities, and the natural geology of the area. Groundwater is extracted mainly through tube wells and hand pumps, while surface water from rivers and ponds is less commonly used for drinking. Key parameters analysed to assess water quality include pH level, total dissolved solids (TDS), hardness, chloride, nitrate, fluoride, and biological contamination. The pH of groundwater in Raiganj generally falls within the suitable range of 7.0 to 8.2, and TDS levels vary from 200 to 900 mg/L, with higher TDS levels indicating the presence of salts that could affect the water's palatability.

The groundwater is moderately hard, with levels between 120 and 250 mg/L, which is within acceptable limits but may cause scaling in pipes. Chloride concentration is around 150-200 mg/L in some regions, which is within permissible limits, though higher levels near agricultural zones suggest contamination from fertilizer runoff. Nitrate levels in certain areas exceed the safe limit, reaching up to 60 mg/L, posing risks to infants and pregnant women. Fluoride levels are generally below 1.0 mg/L, indicating no significant risk of fluorosis. While groundwater sources are generally free from biological contamination, surface water sources like ponds and rivers show positive results for coliform bacteria, indicating faecal contamination.

According to the reports available on webpages regarding the water quality of Raiganj, we presume that the water quality in Raiganj Surendranath Mahavidyalaya is mostly within acceptable limits, though there are concerns regarding nitrate levels, particularly near agricultural areas of Raiganj. Regular monitoring, the promotion of water purification methods, and public awareness campaigns on safe fertilizer use and water source protection are essential to maintain and improve water quality in the long term.



Fig 6: Preservation of potable and useable water within the campus



To estimate the water quality parameters of Kulik river which flowing adjacent to the college campus, we extracted the relevant data from a recent publication mentioned as data source underneath the **Table 6**.

Season	Temperature (Degree C)	pH	Free CO ₂ (ppm)	Dissolved oxygen (ppm)	Total alkalinity (ppm)	Total hardness (ppm)	Chloride concentration (ppm)
Pre-monsoon	32.5	7.3	5.3	5.15	76.92	76.85	28.95
Monsoon	32.1	6.95	7.2	5.42	26.55	30.22	31.59
Post-monsoon	18.3	7.3	5.6	8.38	67.70	18.16	18.16

Table 6: Average value of water quality parameters measured in different season from Kulik River

Data source: Roy et al., Curr. World Environ., Vol. 17(2) 480-497 (2022)

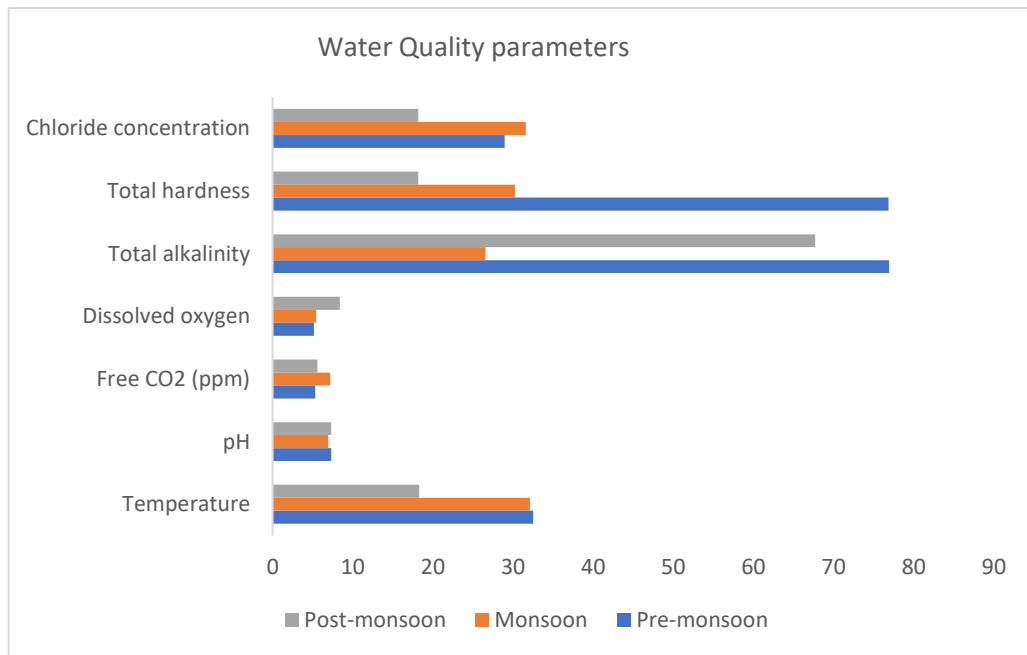


Fig 7: Water quality parameters measured from Kulik River

Analysis:

- The water quality parameters of Kulik river indicated that this water is good enough to support the propagation of wild life and fisheries.
- Water of Kulik river can be used for bathing.



- As per quality standards of Ministry of Forest & Environment, GoI, the Kulik river's water quality can be classified as 'class B.'
- It is noteworthy that though the water of Kulik river qualifies as 'class B' for its physico-chemical properties, we cannot presume that as 'class A' because we don't have MPN data to estimate faecal contamination.

2.7. Air Analysis

To estimate the average air quality surrounding the collage campus, we procure the data from www.aqi.in/dashboard/india/west-bengal/raiganj on once in a month. The collected data are as follows:

Date	PM 2.5	PM 10	SO ₂	NO ₂	O ₃	AQI	COMMENTS
10.07.2022	30	32	01	04	09	38	Good
05.08.2022	08	20	01	03	04	20	Good
07.09.2022	33	70	03	08	10	76	Moderate
09.10.2022	25	62	03	06	09	63	Moderate
03.11.2022	106	193	02	25	09	227	Unhealthy
05.12.2022	151	287	05	27	09	300	Severe
12.01.2023	194	332	02	23	08	371	Severe
15.02.2023	120	280	03	26	09	277	Unhealthy
18.03.2023	74	177	03	18	12	162	Poor
14.04.2023	81	238	04	21	12	218	Unhealthy
13.05.2023	44	121	05	20	21	114	Poor
09.06.2023	54	183	04	08	29	163	Poor

Table 7: Air quality report surrounding campus

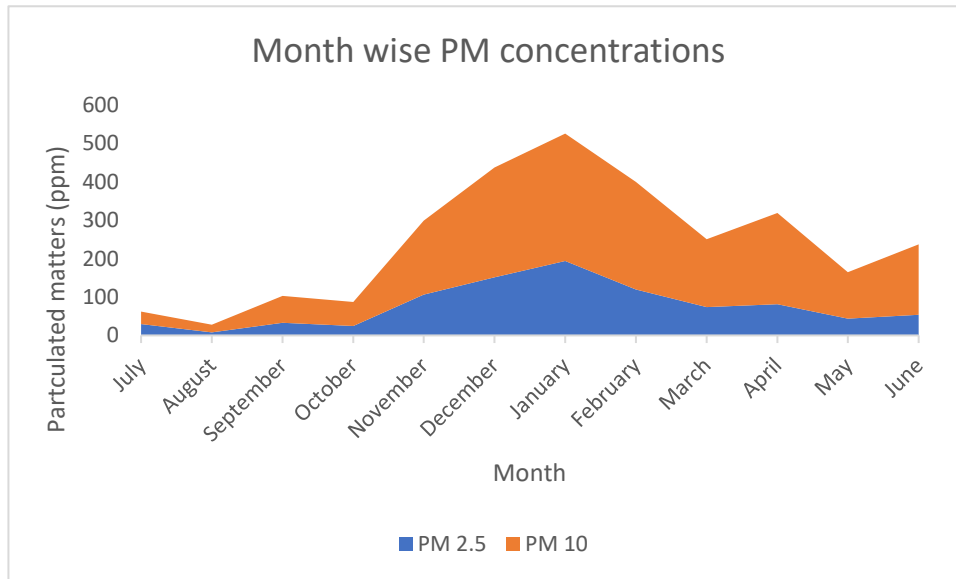


Fig 8: Month wise PM concentrations

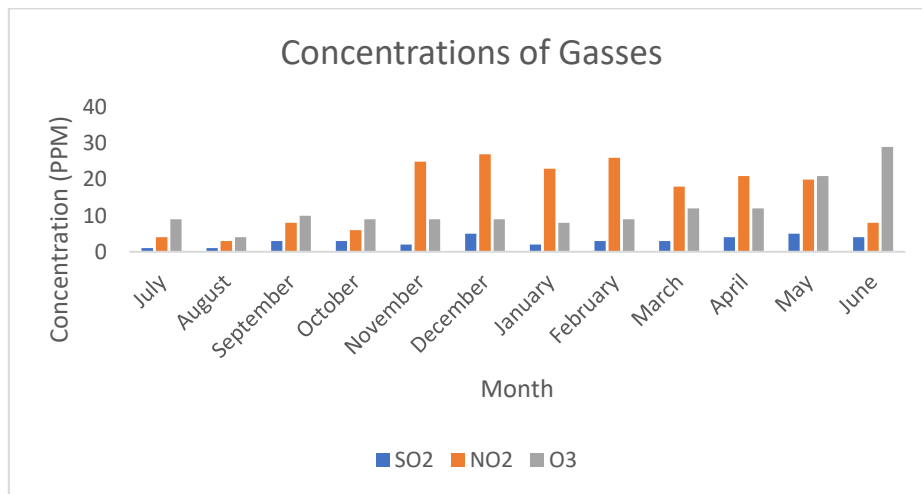


Fig 9: Month wise gasses concentration contributing to air quality

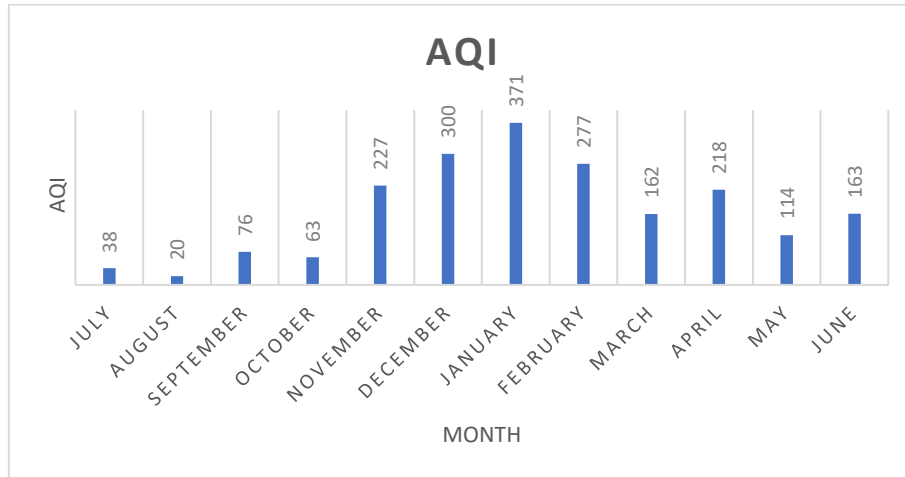


Fig 10: Month wise report of AQI

Analysis:

- We have estimated the air quality as poor to severe from November 2022 to June 2023. Only during Monsoon (July-August) the air quality was estimated to be satisfactory.
- Perhaps, Raiganj's poor to severe AQI from summer to winter is due to crop residue burning, temperature inversions, vehicular emissions, industrial pollution, dust from construction, and household heating. Winter conditions, including low wind speeds and temperature inversions, trap pollutants, further worsening air quality.



2.8. Sound Analysis

Raiganj Surendranath Mahavidyalaya situated at a prominent Raiganj town, in the Uttar Dinajpur district of West Bengal, is experiencing rapid urbanization. This growth has led to increasing noise levels, which can affect the quality of life of the students and neighbours. This report presents a detailed analysis of sound levels across different areas of the town, focusing on identifying zones with noise pollution. Noise levels were recorded at various points across the town using devices installed at various places of the town.

To estimate noise level adjacent to Raiganj Surendranath Mahavidyalaya, we procured real time data from Raiganj DM office device from 5th September 2022 to 10th September 2022 during working hours (10:00 am to 5:00 pm) with one hour interval.

	Monday (05/09/22)	Tuesday (06/09/22)	Wednesday (07/09/22)	Thursday (08/09/22)	Friday (09/09/22)	Saturday (10/09/22)
10:00 am	54.98	52.89	50.46	46.45	48.49	43.92
11:00 am	58.89	57.25	53.89	49.34	51.68	47.00
12:00 noon	55.47	53.19	49.87	48.89	50.38	46.32
1:00 pm	55.30	52.96	48.98	48.78	50.96	46.13
2:00 pm	55.97	53.13	50.07	47.77	50.57	45.95
3:00 pm	53.69	51.38	47.69	45.86	48.89	43.31
4:00 pm	51.43	49.78	46.13	44.39	47.37	42.17
5:00 pm	57.93	56.08	52.64	48.92	51.35	46.32

Data Source: West Bengal Pollution Control Board, Raiganj DM Office

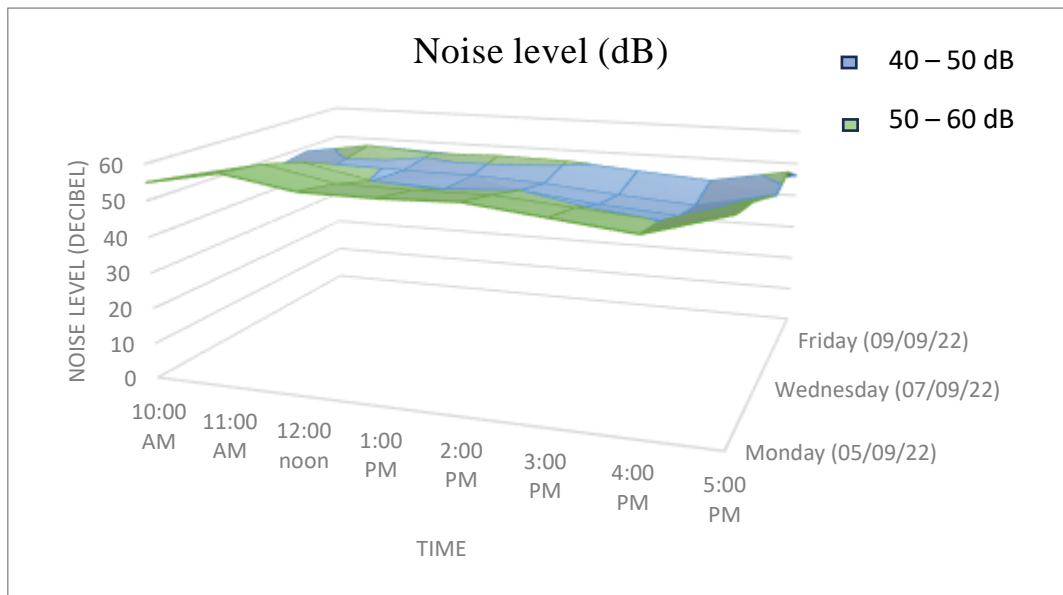


Figure 11: Noise level monitored at one-hour intervals during 5th to 10th of September 2022 to evaluate noise level.



Analysis:

- All the data monitored for the six working days (Monday- Saturday) from 10 am to 5 pm was found within 65 dB (National Noise standards for commercial areas) indicating the noise level adjacent to college the is satisfactory.

2.9. Waste Disposal

Raiganj Surendranath Mahavidyalaya is committed to sustainability through its green protocol, with significant contributions from its two NSS units. These units organize various awareness programs throughout the year to promote environmental practices.

Solid Waste Management: The college uses green bins for biodegradable waste like food scraps and fallen leaves, and blue bins for non-biodegradable waste such as plastic and paper.

Liquid Waste Management: Liquid waste from toilets, wash areas, and the canteen is directed to appropriate drainage systems.

Hazardous Lab Waste: Expired lab reagents and used lab materials are collected in designated areas for periodic disposal. Biological samples are autoclaved before disposal, and biohazard bins are used for items like needles and glass slides.

e-Waste Management: Electronic waste, including spare parts of computers and printers, is stored and periodically recycled through Hulladek. The college prefers repairing non-functional items or opting for buyback options to minimize waste.

These initiatives reflect the college's dedication to effective waste management and environmental sustainability.

2.10. Transport, Communication and Accessibility

Raiganj Surendranath Mahavidyalaya, located in Raiganj, Uttar Dinajpur, West Bengal, is well-connected and accessible. The college is situated in Sudarshanpur, which is easily reachable by various modes of transport.

Road Connectivity: The college is located on Dalkhola-Bakkhali Road and only about 200 meters away from Siliguri more, hence, accessible via well-maintained roads, making it convenient for students and staff to commute by public buses, e-rickshaw, and private vehicles. Besides, state bus stand (~3.8 km) and public bus station (~2.3 km) are not so far from the premise. he e-rickshaw services are available up to bus stands from college gate.

Rail Connectivity: Raiganj Railway Station is the nearest railway station (only 1.9 km away from college premise), providing good connectivity to major cities and towns.

Local Transport: The availability of local transport options like e-rickshaws and auto-rickshaws ensures easy and affordable commuting within the town.



Accessibility: The college campus is designed to be accessible, with facilities that cater to the needs of all students, including those with disabilities. This includes ramps, accessible restrooms, and other necessary infrastructure.

Overall, Raiganj Surendranath Mahavidyalaya is well-equipped in terms of transport and accessibility, ensuring that students and staff can reach the campus conveniently and safely.

2.11. Electric Power Consumption

Raiganj Surendranath Mahavidyalaya uses energy in the form of electricity purchased from West Bengal State Electricity Distribution Company Limited (WBSEDCL) under tariff category **Type A (CM-PU) (MUN)** for public utility/ specific Institution Public Bodies. The College has sanctioned load of **49.64 KVA**. The total billing amount has been found to be about INR **2,39,264/-** for four quarter analysis period of 2022 – 2023. The overall average energy charges stand at INR **9.65/-** per unit.

2.12. Green Initiatives in Last Five Years

Environmental sustainability is crucial, and colleges play a key role in fostering eco-conscious individuals. To enhance these efforts, our college has extended its environmental initiatives even beyond campus boundaries. We have actively engaged in tree plantation campaigns, planting over one hundred saplings in adopted villages and public areas over the past five years. These efforts not only increase green spaces but also involve the community in conservation.

Our college, through the **Sanshuddhi** initiative, organizes workshops and seminars focused on environmental education, covering topics like waste reduction, recycling, and sustainable living. These programs aim to equip individuals with the knowledge to make eco-friendly choices.

Additionally, we have reached out to residents of adopted villages to promote practices such as tree planting, waste management, and energy conservation. Emphasizing traditional, low-impact livelihoods, we believe these small steps will contribute to achieving net-zero emissions.

Looking ahead, we plan to broaden our impact by partnering with educational institutions, non-profits, and government agencies. Our goal is to create a widespread, positive environmental impact, promoting a healthier and more sustainable planet for future generations.

3. Conclusion:

This quality and environment audit report summarise the management system and environmental quality parameters at RSM and its adjacent area to point out further scope to improve managerial efficiency and quality parameters to support environmental sustainability.