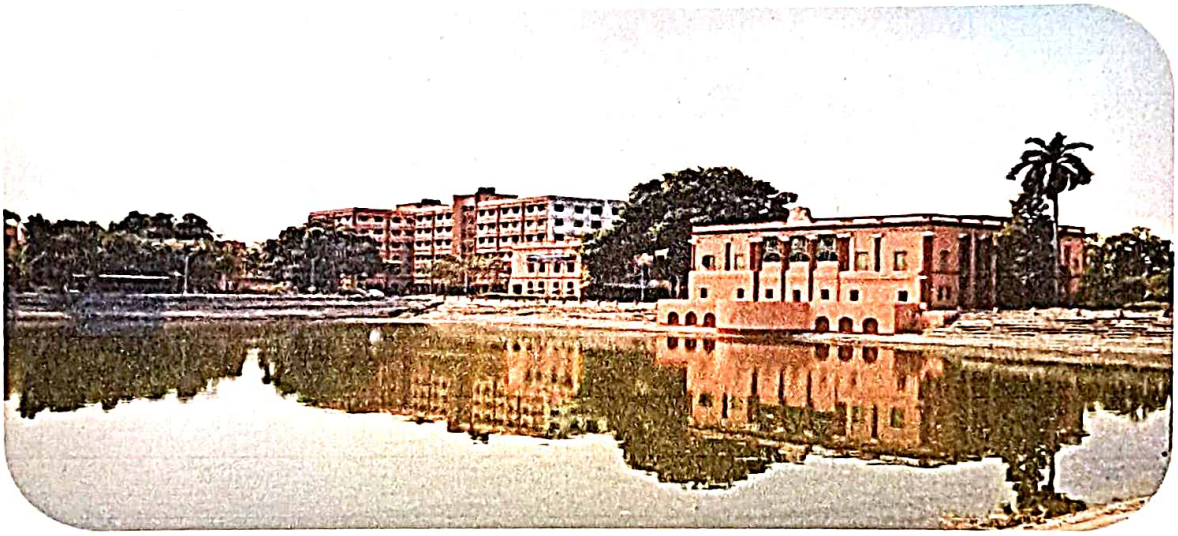
ENVIRONMENTAL/ GREEN AUDIT REPORT



Submitted by

INSTITUTIONAL GREEN COMMITTEE (IGC)

The University of Burdwan

West Bengal, India

July, 2024

ACKNOWLEDGEMENTS

Internal Green Committee (IGC) of the University of Burdwan is pleased to prepare the Environmental/Green Audit Report for the years 2022-2023 and 2023-24 in association with the Departments of the University of Burdwan.

The Environmental/Green Audit and analysis provides a good understanding of the development and improvement of overall green campus of the University. The present consolidated report shows the different aspects of green and safe environment such as waste management, water conservation, carbon neutrality and overall sustainability of the University. Maintenance of CRSMF is worthy to be mentioned as it serves the local farmers in sustainable agriculture with high yield crop production.

The Internal Green Committee (IGC) team members sincerely thank the Hon'ble Vice Chancellor, Prof. Goutam Chandra for the encouragement to conduct this study.

The entire team members thank the respected Deans of FC of Science and Arts, Commerce, *etc.*, and they are grateful to the Registrar, B.U. for supporting in conducting and preparing the report.

The team is grateful for the cooperation received from the Administrative Offices, Departments and all Faculty members as they have supported us in updating data in every possible way.

The major Goals of Sustainable Development for protection of Environment and sustainability criteria have been addressed in the present consolidated Environmental/Green Audit Report.

IQAC wishes to express sincere thanks to the all the Expert Members who are involved in the audit process.

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Institutional Green Committee (IGC) members

Sl. No.	Name	Designation	Department
1.	Dr J P Keshri	Professor	Botany, BU
2.	Dr A R Ghosh	Professor	Environmental Sciences, BU
3.	Dr A Mazumdar,	Professor & Coordinator	Zoology, BU
4.	Dr P Chattopadhyay	Professor	Chemistry, BU
5.	Dr B Biswas	Professor	Geography, BU
6.	Dr S Hira	Assistant Professor	Zoology, BU
7.	Dr S Gupta	Associate Professor	Environmental Sciences, BU
8.	Dr P Saha	Assistant Professor	Microbiology, BU
9.	Dr A Ghosh	Assistant Professor	Botany, BU
10.	Dr S K Dutta	Professor	Economics, BU
11.	Dr S N Chattopadhyay	Professor	Zoology, BU
12.	Dr I Chandra	Assistant Professor	Biotechnology, BU

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1. GENERAL INFORMATION

1.1 Year of Establishment: 1960

1.2 History behind the establishment: The Maharaja of Burdwan established Golapbag, meaning the rose garden including other sites such as Rajbati (Mehtab Manzil), Tarabag, Udaykanan and Krishnasayer with a massive lake in the center. In 1960, the entire establishment over 356 acres had been converted into the University of Burdwan by legislation, courtesy Dr. Bidhan Chandra Roy, Chief Minister of West Bengal (Annexure – 1.2)

1.3	Total campus area:	356 acres	
1.4	Total built up area:	20.40 acres	(5.72%)
1.5	Total open space area:	166.91 acres	(46.82%)
1.6	Total green area:	103.06 acres	(28.91)
	Total water area:	66.12 acres	(18.55%)

1.7 Whether the institute has framed any "Institutional Green Policy"/OR for the first time: **YES, 2021**

1.7.1 Name of Committees formed: **Institutional Green Committee (IGC)** was formed and approved on 22.12.21

1.7.2 Name of the Committee members:

Sl. No.	Name	Designation	Department
1.	Dr J P Keshri	Professor	Botany, BU
2.	Dr A R Ghosh	Professor	Environmental Sciences, BU
3.	Dr A Mazumdar,	Professor & Coordinator	Zoology, BU
4.	Dr P Chattopadhyay	Professor	Chemistry, BU
5.	Dr B Biswas	Professor	Geography, BU
6.	Dr S Hira	Assistant Professor	Zoology, BU
7.	Dr S Gupta	Associate Professor	Environmental Sciences, BU
8.	Dr P Saha	Assistant Professor	Microbiology, BU
9.	Dr A Ghosh	Assistant Professor	Botany, BU
10.	Dr S K Dutta	Professor	Economics, BU
11.	Dr S NChattopadhyay	Professor	Zoology, BU
12.	Dr I Chandra	Assistant Professor	Biotechnology, BU

1.7.3 Number of meetings conducted so far: 03

1.7.4 Resolution of the meetings: Annexure - 1.7.4

1.7.5 Action taken by the Committee: Annexure - 1.7.5

1.7.6 Future programmes of the Committee: Annexure - 1.7.6

1.7.7 Policy enforcement strategies:

1.8 Whether green audit is followed annually, if so, please produce the year-wise recommendations of the auditor along with report (as Annexure): No

1.9 Whether institute has constituted the "Institutional Environmental Committee",: Not applicable, since IGC supervises and recommends all environmental activities of the Institutes

1.9.1 Name of the Committee members: same as IGC

1.9.2 Number of meetings conducted so far:

1.9.3 Resolution of the meetings:

1.9.4 Action taken by the Committee

1.9.5 Future programmes of the Committee

1.9.6 Policy enforcement strategies

1.9.7 Whether institute has conducted any awareness/responsibility programme among the staff members: **Yes**

1.10 Whether institute has framed any "Institutional Biosafety Committee",: **Yes**

Vide, Department of Biotechnology, Govt of India Order No. BT/BS/17/320/2008 – PID, Dated: 28/09/2018.

1.10.1 Name of the Committee members:

1. Prof. Nimai Chandra Saha, (Chairman IBSC)
2. Prof. Sudit Sekhar Mukhopadhaya, NIT Durgapur, (DBT nominee)
3. Prof. Anupam Basu, Dept. of Zoology, BU(Member Secretary)
4. Prof. Subrata Dey, Vivekanadya University , (External Expert member)
5. Prof. Apurba Ratan Ghosh, Dept. of Environmental Science, BU (Member)
6. Prof. T.K.Maity, Dept. of Botany, BU(Member)
7. Prof. Anandyamay Barik, Dept. of Zoology, BU(Member)
8. Dr. Indrani Chandra, Dept. of Biotechnology, BU (Member)
9. Dr. Gispati Chakraborty, University Health Centre, BU (Biosafety Officer)
10. Dr. Pradipta Saha, Dept. of Microbiology , BU(Member)

1.10.2 Number of meetings conducted so far: **4 (four)** (02/04/2019,28/04/2020, 03/02/2022 and 26/05/2023)

1.10.3 Resolution of the meetings: As per minutes recorded in the IBSC file

1.10.4 Action taken by the Committee:

(i) Biosafety and Laboratory Disposal Guideline has been prepared, circulated and **posted in the University website**

(ii) Committee members visited the different Depts and meet with the faculty members, appraise the biosafety guideline for obeying biosafety norms

(iii) Different Research project has been evaluated for Biosafety and contentment purpose and accordingly approved:

Sl No.	Dept	Total Number of Project Reviewed
1	BOTANY	52
2	ZOOLOGY	52
3	MICROBIOLOGY	16
4	ENVIRONMENTAL SCIENCE	08
5	BIOTECHNOLOGY	05

(iv) Committee recommends for radio safety permission for research work using low ionizing compounds and others,. Accordingly, Dept of Physics and chemistry have been entrusted for getting licence from Atomic Energy Regulatory Board (AERB) and Radio safety officer (RSO) and necessary compliance by the Respective Dept.

(v) Committee recommends University for waste disposal planning and accordingly it is in the process of planning of the different types of waste disposal including, Chemical waste, Biological waste, and E waste. Talk with local municipality and other stakeholders is in the process

1.10.5 Future programmes of the Committee:

i) Conduct periodical site monitoring
ii) Conduct biosafety training among the Research fellows
iii) Meeting for review any project proposal

1.10.6 Policy enforcement strategies:

(i) Preparation of any draft policy and feasibility study
(ii) Meeting with university highest body like Executive Council for necessary policy enaction

1.10.7 Whether institute has conducted any awareness/responsibility programme among the staff members: **Yes**

The Committee does continuous awareness among the faculty members and research scholars. The Committee periodically sends mail to the different Dept. Some time Visit to the different dept, and so on.

1.11 Whether all the departments/teachers/non-teaching members/students are aware about the need of the environmental protection and audit: Yes

1.12 Whether institute has involved the students as volunteers in greening programmes: Yes

1.13 Whether construction/demolition/repairing are in compliances with green standard: **Yes**, as per PWD schedule and guidelines

1.14 Whether institute has conducted any workshop/seminar/lecture on environmental awareness programme inside and/or outside the campus: **Yes** (Annexure 1.14)

1.15 Whether the institute has department of Law/Environmental Science/3-Year degree Course/Course curriculum: **Yes**, (if so, how does it takes part in greening programmes) (Annexure 1.15)

1.16 Whether institute provides any community services, if so, give details (as Annexure): **Yes,** by NSS (Annexure 1.16)

1.17 Whether the students are aware about the use of medicinal plants (any lecture/seminar/conference organized on it): **Yes** (Annexures 1.17.a and 1.17.b)

1.18 Comments on the following:

1.18.1.1 Plantation program: **Yes**

1.18.1.2 Formation of Natural club/Eco club: No

1.18.3 Management of natural resources, wildlife, conservation of species: **Yes**

1.18.4.1 Any project sponsored by national funding agency/NGO, independent project related to environmental issues: **Yes**

1.18.5 Is there any incidence of burning of plastics containing garbage within the campus for necessary reduction: No, disposed through own mechanism. In order to avoid any plastic burning incidence, university authority has taken initiative to aware students in different programmes such as world environment day, save forest day etc. University also declared "No plastic zone".

1.18.6 Celebration of 5th June, Ozone day, Earth Day etc.: **Yes** (Annexure 1.18.6)

1.18.7 Number of field visits/survey records: **Yes** (1) (Annexure 1.18.7)

1.18.8 Campus biodiversity register: **Yes** (Annexure 1.18.8)

1.19 General aspects (express in statements)

1.19.1 Campus cleanliness: The Estate Department looks after the cleanliness of the campus, buildings and other premises.

1.19.2 Rainwater harvesting: **Yes** (Annexure 1.19.2)

1.19.3 Solar street lamps: NIL

1.19.4 Carbon dioxide neutrality on the campus by developing greenery: **Yes** (Annexure 1.19.4)

1.19.7 Man-made nest to attract some birds to maintain ecological balance: No

1.19.8 Restriction in use of plastic and plastic products: The entire campus has been declared as plastic free campus

1.19.9 Culture of some ducks, swans etc., for scenic beauty in pond or any water body resources (if available): No

1.19.10 Green monitoring by green committee/volunteers/team: No

1.19.11 Training on vermicomposting: proposed by BKRTC

1.19.12 Celebration of 'No vehicle Day' on a particular day: This year it was celebrated on 3 July, 2024. (Annexure 1.19.12)

1.19.13 Dams inside the campus to meet the demand for water: No

1.19.14 Installation of fire safety instruments in all the buildings/departments: **Yes**.

1.19.15 Toilets/separate toilets for differently abled students: **Yes**

1.20 Over all noise level

Inside campus area	Outside campus	Class room	Lawn	Office	Laboratory	Canteen
70.2-79.3 dB	75.4-83.7 dB	52.6-63.7 dB	52.3-61.3 dB	60.8-72.1 dB	48.4-62.2 dB	57.6-69.2 dB

1.21 Is there any device (preferably HVS: High Volume Sampler) for measuring ambient air quality in the campus (if so, pl mention the data month wise): **YES,**

TableAir quality parameters (Sampling station: outside the academic campus)

Location	Time	PM10	PM2.5	PM1	HCHO	TVOC	NO2	SO2	O3	AQI
January-Feburary	*EM*	45.76	28.12	19.42	13.15	21.15	21.17	10.57	11.11	46
	LM	83.63	53.14	34.76	18.18	32.63	43.91	11.36	15.53	84
	AN	88.82	46.71	26.47	12.66	29.42	34.53	9.06	15.79	76
	EN	75.95	52.15	15.61	9.23	26.17	25.44	8.22	12.38	72
	Avg	69.29	45.03	24.07	13.31	27.34	31.26	9.80	13.70	69
March-April	*EM*	58.51	36.14	22.25	19.17	25.16	34.38	11.26	13.27	59
	LM	98.66	51.43	23.3	42.57	32.63	55.95	8.27	26.18	99
	AN	84.35	43.87	19.00	34.29	35.34	48.12	10.13	23.18	74
	EN	98.79	47.61	18.8	38.34	31.04	37.37	12.77	22.39	89
	Avg	80.07	44.76	20.83	33.59	31.04	43.95	10.60	21.25	80
May-June	*EM*	49.58	28.17	16.76	11.12	25.16	23.34	10.21	16.21	50
	LM	73.66	37.90	23.92	28.24	38.73	36.56	11.73	21.48	74
	AN	89.36	34.75	20.39	22.18	30.51	28.85	12.55	17.47	69
	EN	69.38	27.01	17.13	19.44	21.16	21.67	13.18	13.76	64
	Avg	64.25	31.96	19.55	20.25	28.89	27.61	11.92	17.23	64
July-August	*EM*	73.79	41.14	33.19	17.37	31.67	29.58	11.74	28.93	74
	LM	103.14	62.09	35.90	26.25	45.25	46.15	12.79	31.55	102
	AN	93.59	57.58	25.35	25.12	38.28	36.49	10.33	24.83	94
	EN	82.19	46.25	27.62	19.55	28.35	27.48	14.73	21.75	82
	Avg	88.18	51.77	30.52	22.073	35.89	34.93	12.40	26.76	88
September-December	*EM*	85.36	39.17	28.56	21.33	38.11	34.25	12.56	14.06	85
	LM	139.84	73.08	42.47	39.25	53.13	54.33	11.70	38.69	127
	AN	131.42	59.56	41.19	32.73	45.77	38.17	8.55	23.60	121
	EN	117.70	43.92	34.38	26.31	33.40	33.56	7.38	18.11	112
	Avg	118.58	53.93	36.65	29.91	42.60	40.08	10.05	23.62	112

2. WATER MANAGEMENT

2.1 Whether institute has an efficient and hygiene water storage mechanism to minimize the loss of water during storage: **Yes**

2.2 Whether institute is using water filter with RO, Aqua-Guard and/or large water filter with cooler at the strategic locations in the institute. If so, are they under AMC: **Yes**

2.3 Whether institute has its own mechanism in repairing of water leakage: **Yes**

2.4 Is there any rainwater harvesting unit in institute: **Yes**
(if so, what are the uses of this water:) See Annexure 1.19.2

2.5 Whether institute has developed any reuse and recyclable of water system: NO

2.6 Is there any scope of measurement of water quality parameters used in hostel, lab, office, canteen, tap water (if so, parameters: pH, EC, TDS *etc.*): **Yes**, the department of Environmental Sciences

2.7 Lab-wise water consumption (lt/d)
Chemistry (Dept): 300 L
Zoology (Dept): 200 L
Botany (Dept): 150 L
Geography (Dept): 50 L
Environmental Science: 150L
Microbiology: 200L
Biotechnology: 200L

2.8 Whether institute has sufficient/adequate drainage system: **Yes**

3. ENERGY CONSERVATION

3.1 Reduction of energy consumptions, especially fossil fuel energy

3.1.1 Total electric consumption amount: 2,194,935 Kwh/Yr

3.1.2 Average electrical consumption in a month: 182911 Kwh

3.1.3 Total No. of
i) LED: 9887
ii) CFL: 78
iii) Tube lights: 757
iv) Incandescent lamps: 13
v) Fans: 4817
vi) Air conditioners/Air Coolers: approximately 256 nos. of AC of varying capacity like 1 ton, 1.5 ton and 2 ton with 1 VRF at university auditorium

3.1.4 Whether institute has any provision/choice of renewable and carbon-neutral electricity options: **Yes**

3.1.5 Whether institute has planned to install solar panels: (if so, Project installed/working: Date/Month/Year): **Yes,** 2014-15 & 100 KVA

3.1.6 Whether institute has efficient water heating system: **No**

3.1.7 Whether the staff members of all sectors are concerned in turning off electrical appliances when not in use in both commercial and residential area: **Yes**

3.1.7 Is there any monitoring system – like put off the main switch where there is no need of electricity: **Yes**

3.1.8 Whether the users follow the appropriate and measurable targets for a reduction of energy, such as, computer, printers, electrical equipment when not in use: **Yes**

3.1.9 Is there any options for equipment's running on standby mode: **Yes**

3.1.10 Whether institute has taken initiative to purchase efficient and environmentally sound appliances in order to fulfill the green budget: No

3.1.11 Whether institute has its own mechanism in repairing of electrical fault: **Yes** through agency.

3.1.12 Whether the class rooms are with sufficient illumination in day time and ventilation: Yes
Number of lights & fans in class room (average): 8 nos. and 4 nos.
Use of light & fans in the day time (average hours): 6 hours.
Number of windows per class: 4/classroom
Natural light source in day time (in hours) (average per class): 6hrs

3.1.13 How many (%) e-notice generated by the institute for academic/administrative purposes in a month: 98%

3.1.14 How many (%) paper-notice generated by the institute for academic/administrative purposes in a month: 2%

3.1.15 Total number of computer, printer, Laptop, Xerox machine: See annexure 3.1.15

3.1.16 Whether institute has organized lectures on energy conservation in order to give awareness to the students: No

3.2 Energy conservation strategies

3.2.1 Whether the architectural design for institute is based upon use of natural lighting & ventilation, to save extra power for bulbs and fans: **Yes**

3.2.2 Whether florescent bulbs are replaced with CFL bulbs/LEDs: **Yes**

3.3 Minimize the use of unsustainable transport

3.3.1 What is the available/maximum transport facility used by the staff members/students etc., - mention the number (in average per day): Most of the students, staff, officers and faculty avail bicycle and two wheelers and less numbers of cars.

3.3.2 Whether institute has any common car sharing/car pool among the students and faculty: **Yes**

4.WASTE MANAGEMENT

4.1 Maximization of the process of wastes & minimization of non-renewable refuse

4.1.1 Is there any method of segregation of waste materials: **Yes**
Solid waste management: The University of Burdwan has a biodegradable solid waste management system. The facility is located in the Crop Research and Seed Multiplication Farm of the University.

4.1.2 Total amount of solid waste generated in the campus (including tree droppings & Lawn wastes)

Total number of staff: 10

Per capita production per day: 0.5Kg

4.1.3 Whether institute arrange any workshop/seminar/conference for awaring the students/staff for specific arrangements for recyclable wastes: **Yes** (Annexure 1.14)

4.1.4 Whether institute follow specific disposal method for solid or liquid waste in specific manner: **Yes**

Sewage treatment plant at golden jubilee building: The treatment process provided in this plant is completely based on Extended Aeration Activated Sludge Process with diffused aeration system followed by Tube Settler along with Tertiary Filtration Unit. After treatment, water can be discharged into the nearby sewer line or can be reused for gardening/ toilet flushing etc. Liquid waste management: The Department of Chemistry has installed a hazardous liquid chemical waste management facility.

4.1.5 Whether the recycling/collection facilities are provided by the city Municipality and/or private suppliers (including glass, white plastic bottle, printer cartridges, cardboard, furniture, plastics, thermocol, waste papers, electrical goods & alliances, electronic gadgets, instruments, equipment, packing materials): **Yes**

Solid waste management: The University of Burdwan has a biodegradable solid waste management system. The facility is located in the Crop Research and Seed Multiplication Farm of the University.

4.1.6 Whether institute has any composting ground/vat or any collection unit *etc*: **Yes**

Solid waste management: The University of Burdwan has a biodegradable solid waste management system. The facility is located in the Crop Research and Seed Multiplication Farm of the University.

4.1.7 Is there any mechanism of treatment/uses of domestic influent in the institute campus (if so, what is the capacity of treatment plant/composting *etc.*): **Yes**

Sewage treatment plant at golden jubilee building: The treatment process provided in this plant is completely based on Extended Aeration Activated Sludge Process

with diffused aeration system followed by Tube Settler along with Tertiary Filtration Unit. After treatment, water can be discharged into the nearby sewer line or can be reused for gardening/ toilet flushing etc.

4.1.8 Minimize use of chemical pollutants

Sl No	Department	Name of the waste	Total (a+b+c)	Characterization (if any)	Method of disposal	Agency (if any)
		Chemical (a)	Biological (b)	Microbial (c)		
1.	Botany	Synthetic dyes, ethanol,	NA	NA		
2.	Biotechnology	Synthetic dyes, ethanol,	NA	NA		
3.	Chemistry	Sulphuric acid, hydrochloric acid, EDTA, sodium carbonate, organic dyes	NA	NA		
4.	Environmental Science	Sulphuric acid, hydrochloric acid, EDTA, sodium carbonate, organic dyes	NA	NA		
5.	Physics	NA	NA	NA		
6.	Zoology	Sulphuric acid, hydrochloric acid, EDTA, sodium carbonate, organic dyes	NA	NA		

4.1.9 Records of dustbins/collection bins inside the campus

Sl no.	Location of dustbin	No. of dustbins			Quantity of collection (per day)	Disposal time	Cleaning by ecofriendly product Y/N
		Biodegradable	Non-biodegradable	Plastic waste			
	Dust bins are placed in every corridor of each	Green/ Blue coloured	Red coloured R - 30	Red coloured, R - 30	50 kg	9 -10 am	Yes

	academic and administrative sections	are used; G - 100, B – 40, Y - 30					

4.1.9 Whether the cleaning products used by the institute staff are ecofriendly and under the COSHH (Control of Substances Hazard to Health) regulations: **Yes**

Management of Biomedical and Chemical waste and monitoring of research work involving Biohazard issues is performed under the strict surveillance of the Institutional Biosafety Committee (IBSC, BU) chaired by Hon'ble ViceChancellor,The University of Burdwan. The IBSC has been entrusted to monitor the following: Decontamination and Disposal, DISPOSAL METHODS, Disposal of Hazards Chemicals.

Whether the institute is using fertilizers, pesticides for any purposes, if so, amount used per month and places of uses: **Yes** (Annexure 4.1.9)

Use of public transport: **Yes**

5. E-WASTE MANAGEMENT

5.1 Quantity of e-waste generated: 100 ton/yearly

5.2 Number of cartridge used month-wise: 45

5.3 Number of cartridge disposed in a year (average): 85

5.4 Number of times refilling & reusing method of disposal of e-waste (if any): 3-4 times

5.5 Whether institute has conducted any awareness programme on e-waste management: **Yes,** (Annexure 1.14)

5.6 Is there any means of disposal of unused computers, printers and electronic wastes through authorized agents: **Yes**

5.7 Disposal methods

Sl No.	Location	Amount of generation	Method of disposal	Name of the Agency (if any) for disposal
1.	Backyard of Bengali Department, Golapbag	-	Channelize to the third party	WEBEL, Government of West Bengal

6. GREEN AREA MANAGEMENT

6.1 Is there any garden in the institute campus/outside the campus under institute custody: **Yes.**

6.2 Whether the garden is watered by using drip/sprinkler irrigation system: **Yes.**

6.3 Is there any mechanism of review of periodical monitoring of tree species: **Yes.**

6.4 Whether the institute has taken any programme for plantation of some fruit trees which can attract birds, bees *etc.*: **Yes**

6.5 Biodiversity mapping: Annexure 6.5

6.6 Records of Plantation programmes: Annexure 6.6

Annexure 1.1: Year of establishment

Annexure 1.2: History behind the establishment

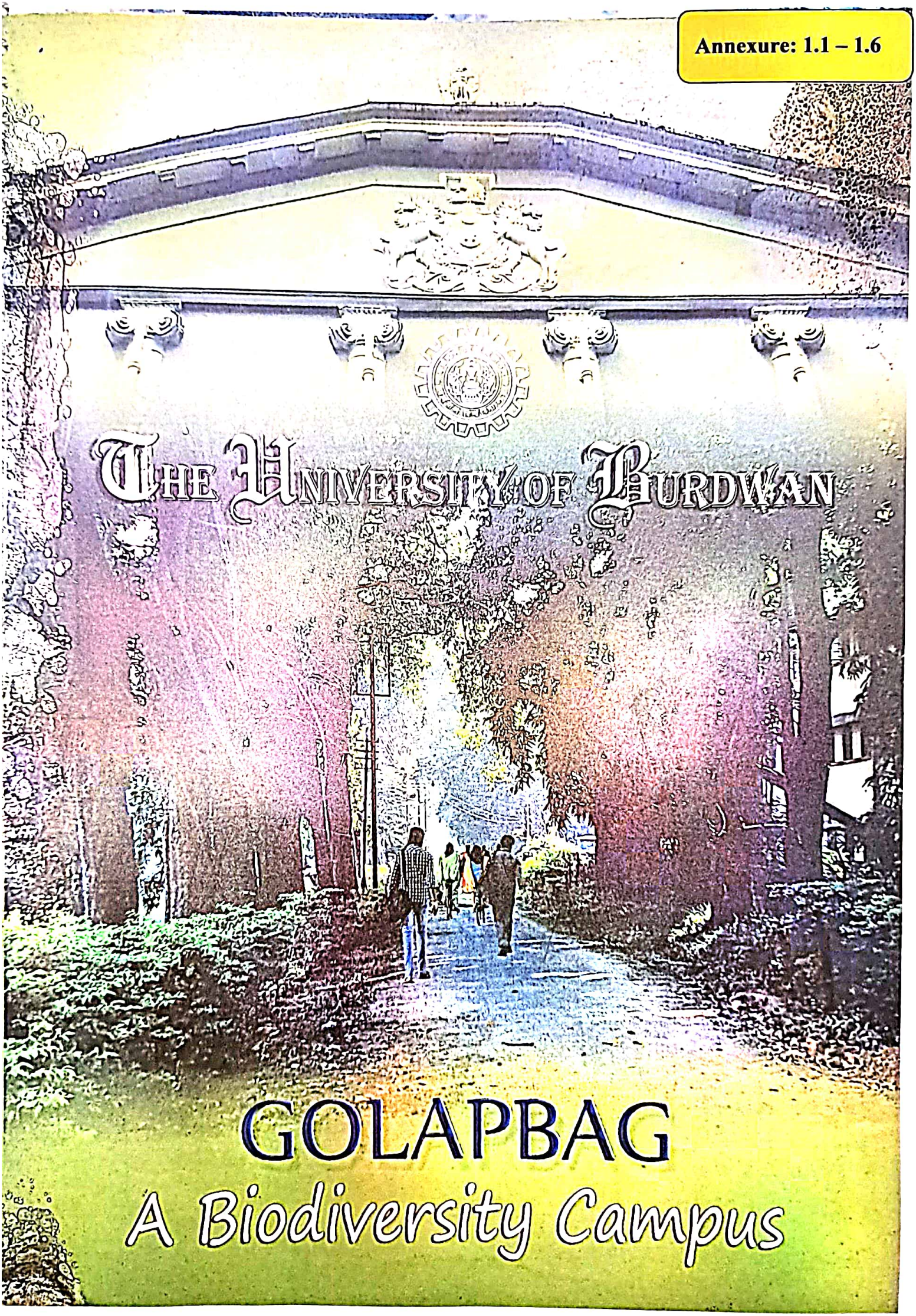
Annexure 1.3: Total campus area

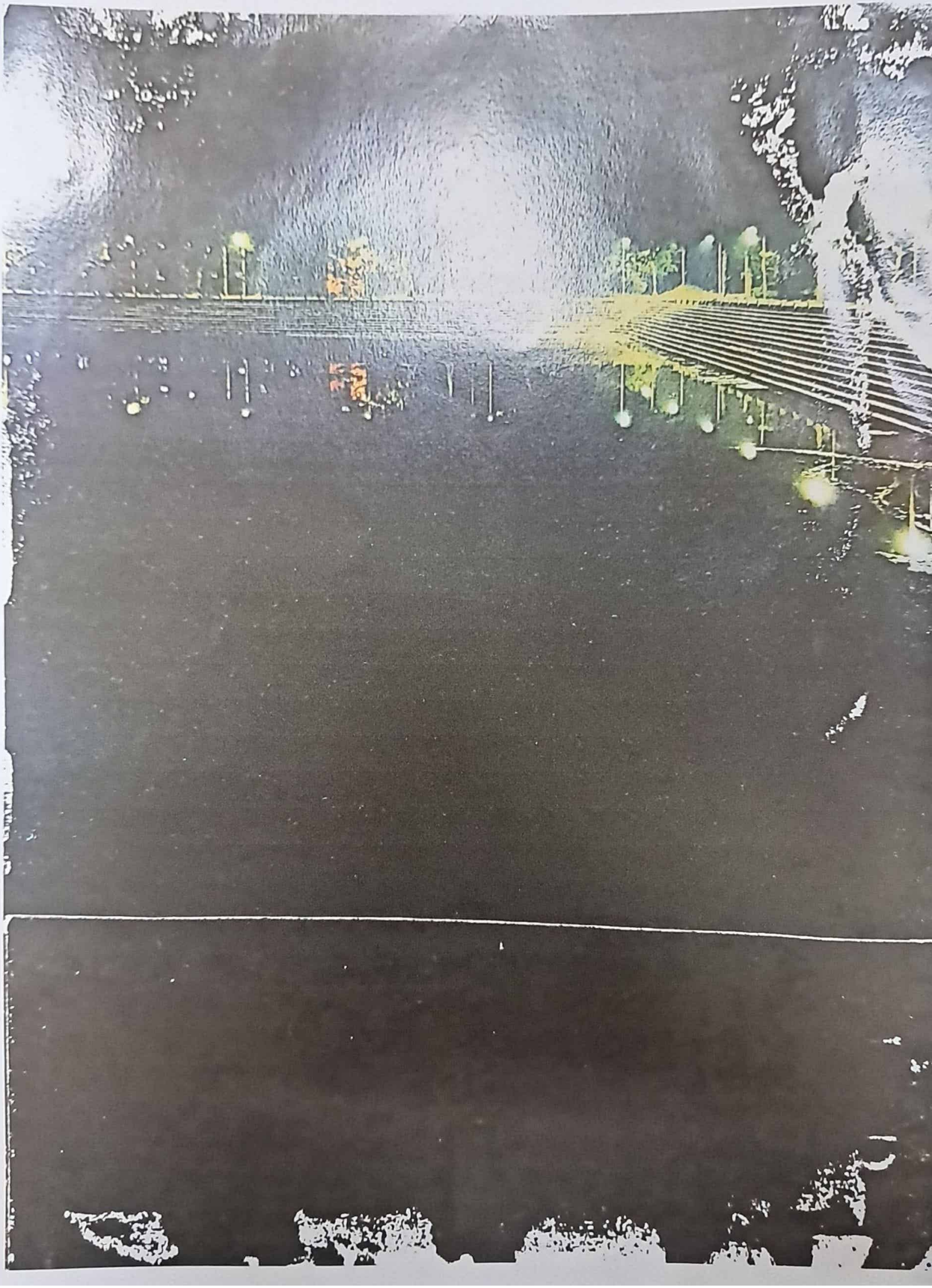
Annexure 1.4: Total built up area

Annexure 1.5: Total open space area

Annexure 1.6: Total green area; total water area

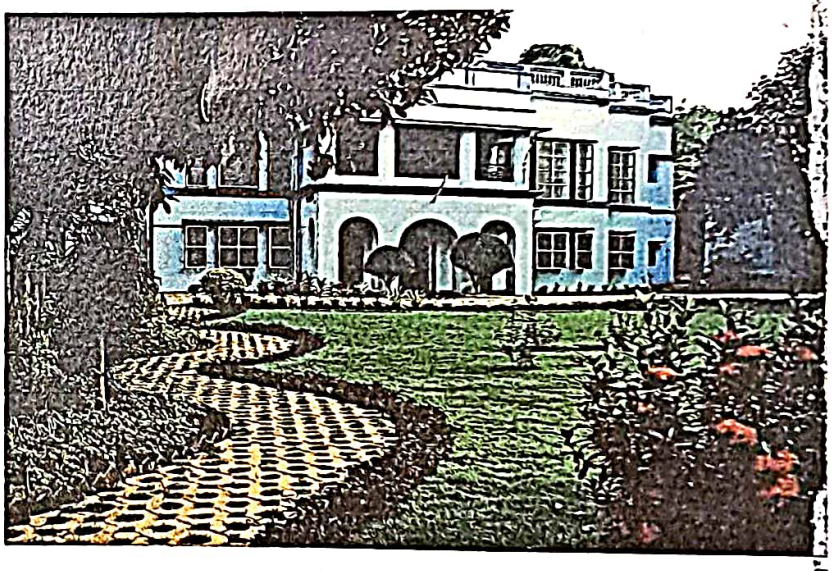
Annexure: 1.1 – 1.6





Golapbag: Academic Campus of the University of Burdwan

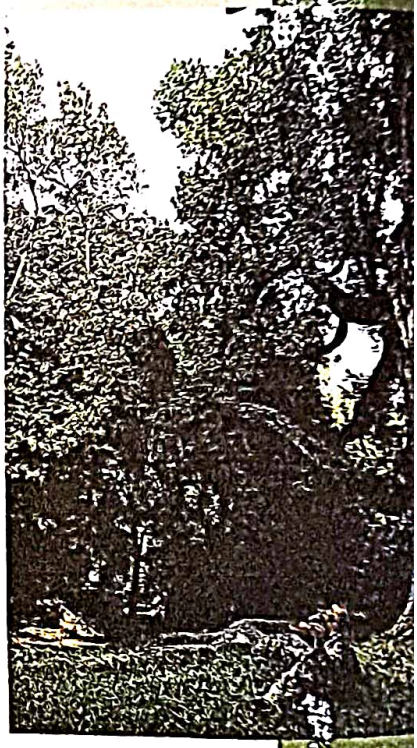
Introduction: *Golāpbāg*, literally the rose garden, had once been the pleasure park of the Maharaja of Burdwan, the richest feudal lord of British of Bengal. Apparently, Golapbag is just one of the similar other historic sites like the Rajbati with its majestic palace Mehtab Manjil; Tarabag (or the garden of the queen Tarasundari); Udaykanan (named after the king Udaychand) and Krishnasayar (the ecopark with a massive lake at the centre)-all these once made the residence of the Maharaja at the heart of the Bardhaman town. In 1960, the entire establishment spanning over 356 acres had been converted into the University of Burdwan by the cabinet legislation, courtesy Dr. Bidhan Chandra Roy, illustrious Chief Minister of West Bengal.



The Rajbati or the royal palace *Mehtab Manjil* has been already declared a heritage site by the Govt. of West Bengal. Next to the Rajbati, Golapbag is the most important historic site of the Burdwan Raj in a different sense. The royal house had planned it as a botanical/zoological garden with remains of animal sheds still visible in some corners. The Golapbag is surrounded by a canal dug sometimes in 1840s admittedly to give an isolated identity. An island created in the midst of the waterbody on the northern side of the garden had a beautiful canopied structure of the Mughal architectural style. Known as *Dar-ul-bahar*, built atop an artificial mound in the

island, it was used by the king to receive royal guest/s or to host musical consort in the moonlit night. In the Golapbag campus, *Dar-ul-bahar* still stands intact as a mute witness to its bygone pomp and glory.

The construction of the Golapbag cannot be exactly dated, but the canal surrounding it had been built sometime in the 1840s. Tradition has it that the planning and designing of the Golapbag garden had been made by Joseph Dalton Hooker, renowned British Botanist and the Director of the Royal Botanical Garden, Kew (England). Dr. Hooker came to Burdwan in 1884 and had listed 128 species of trees in the palace compound of the Burdwan Raj. The entire garden is divided into some alleys each with a particular species of trees on both sides of it, the original layout is still visible. The old glories of the garden are admittedly no more, but whatever still exists might get a casual visitor to the campus wonder struck. With nearly 1200 trees, 154 rare centuries old mahagony trees, and innumerable species of flora and fauna, the historic Golapbag remains a green island in the midst of a clumsy rural town.



The wide variety of trees gracing the Golapbag garden is simply awe inspiring. Some of these are: *Polyalthia longifolia, Swietenia mahagoni, Drypetes roxburghii, Saraca asoca, Albizia saman, Dolichandrone stipulata, Manilkara hexandra, Aphanamyxis polystachia, Naringi crenulata,Pongamia pinnata, Barringtonia acutangula,* and several others in the garden. A large number of species are unique to the campus for having been either introduced or surviving as the reminiscent of the indigenous flora that no more exists outside. Among the introduced ones *Brownea coccinea,Jacquinea ruscifolia, Amherstia nobilis deserve mention.* A number of factors such as variation in microhabitats, plenty of land open to plant invasion, willful introduction of species for avenue plantation, ornamentation and botanical studies, high anthropogenic concern etc. over fairly a long period have led to the assemblage of plants of admirable distinction.

In addition to all these, over 200 species of medicinal plants have been enumerated from the campus which is sustained in the Deer Park beside the Zoology Department and the island, referred to earlier. There are several interesting species carefully sustained within the premises of the Botany Department which includes Cactus House and Orchid House. Several pteridophytes are sustained in the campus among which *Christella dentata* (Forssk.) Bownsay and Jermy, *Ampelopteris prolifera* (Retz.) Copel, *Lygodium japonicum* (Thunb.)Sw., *Lygodium flexuosum* L., *Pteris vitata* L., *Pteris multifida* Poir., *Microsorum punctatum* (L.) Copel, *Nephrolepis cordifolia* (L.) Copel, *Drynaria quercifollia* (L..) J. Smith, *Selaginella repanda* (Desv. ex Poir.) Spring,

Ceratopteris thalictroides (L.) Brongn., *Azolla pinnata* R. Br. *Salvinia natans* L., *Nephrolepis cordifolia* (L.) Presl. *Macrothelipteris* sp., *Pronephrium nudatum* (Roxb.) Holttum, *Helminthostachys zeylanica* (L.) Hook. *Platicerium bifurcatum* (Cav.) C. Chr. are noteworthy.

The majestic banyan tree in the courtyard of the Botany department and *Magnolia hodgsonii* also deserve attention. No less than 300 rose plants of 130 varieties are grown in the island garden together with other seasonal flower bearing plants. The plant diversity of the campus has been proving its worth in conveying ecological, natural-aesthetic and cultural service to the society in several ways.

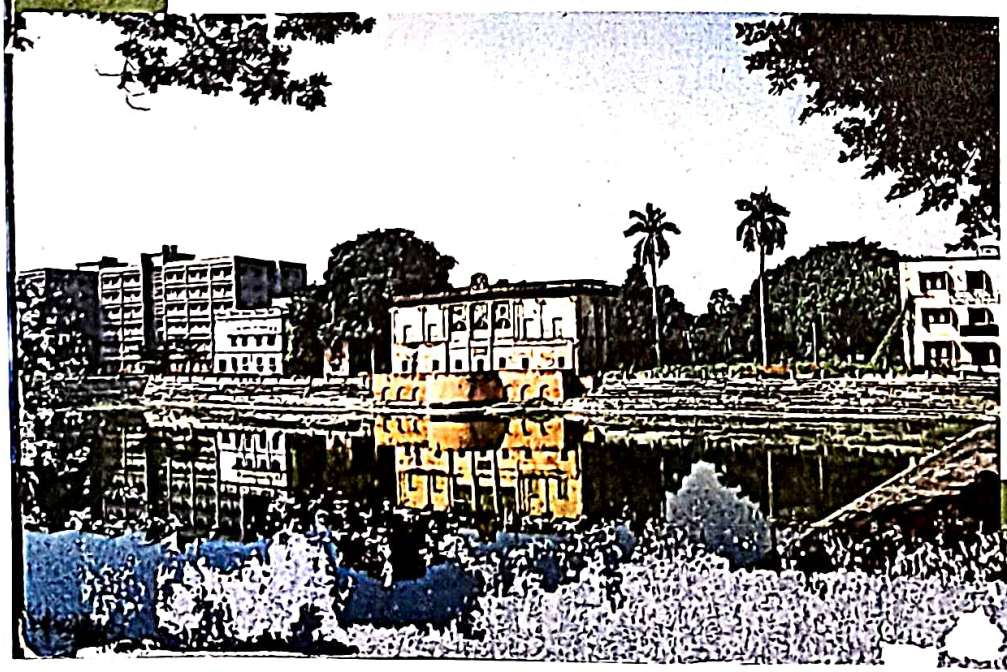
On the whole, Golapbag represents a unique assemblage of the greenery, water bodies canopied by giant trees, supplemented further by the king's garden (Ramnabagan) just on the other side of the road – all unite to create a safe haven for birds in the midst of the din and bustle of the Burdwan town. As many as 100 species

scolopacea (koel or Kokil), *Athene brama* (Spotted Owlet or Kuture Pencha, *Haicyon coromanda* (White breasted kingfisher or Sadabook Machranga), *Alcedo atthis* (Small blue kingfisher or Chhoto machranga) etc.

Golapbag is integrated with the University's Crop Research and Seed Multiplication Farm (CRSMF) covering 10.5 hectares of land, the brainchild of famous geneticist and plant breeder Prof. Param Nath Bhaduri FNA. Founded in 1965 with the objective of promoting research related to development of cereals, oils seeds, pulses and plants, the CRSMF has been catering to the services of peasants from the whole of South Bengal. Attracted by its high research profile, various funding agencies sponsored its activities leading to the launching of the WB Govt sponsored 'Foundation & Certified Seed programme' from 2002 onwards for paddy, mustard, gram, lentil and moong.

From the last year, CRSMF has undertaken the potato breeder seed multiplication work in collaboration with the Central Potato Research Organization, Nainital. In addition to all these, a germplasm conservatory of "Mango" has already been set up (*Amrakanan*) for the conservation of traditional mango varieties. More than 20 varieties of mango (Langra, Bombai, Champa, Mohanbhog, Amrapali, Golapkhas, Molamjam, Sadulla, Motichur, Bera, Mallika, Jharjhari, Rani, Kisanbhog, Sarirkhas, Katamisti, Michhirdana, Biswanath, Kohitur, Himsagar, and Alfanso etc.) are getting special care in this conservatory. The CRSMF has also been providing technical assistance, guidance and advice to local farmers on the technology of harvesting and post-harvest packaging and care of cereal, pulse, oils and vegetables seed multiplication in the context of the latest developments in agricultural practices through organization of seminars and workshops at periodic intervals. On the whole, Golapbag campus makes an ideal case for a Bio-diversity Heritage Site, a vast area of agro-ecosystem with ongoing agricultural practices and significant domesticated biodiversity component.

There have been several publications on the plants of the campus covering various aspects, viz. taxonomy of higher and lower groups of plants, air pollution index and CO_2 sequestration potential of trees, medicinal properties of herbs, shrubs, trees, vines etc., natural products of plant origin, allelopathic potential, ethnopharmacological and molecular pharmacology, pharmacognostic and autecological studies of medicinal plants, micropropagation of medicinal plants perceiving threats of extinction, reproductive biology etc. The concern and virtues of the biodiversity of the Golapbag are multifarious covering the academic, aesthetic, commercial and environmental perspectives.



Significance and Objectives of Biodiversity Heritage Site fulfilled by Golapbag Campus:

Based on what has been stated above, Golapbag Campus of the University of Burdwan justifies the existing parameters of the significance and objectives of the Biodiversity Heritage Site (BHS) stated in *Item No.2* under Section 37 of the Biological Diversity Act, 2002 (BDA).

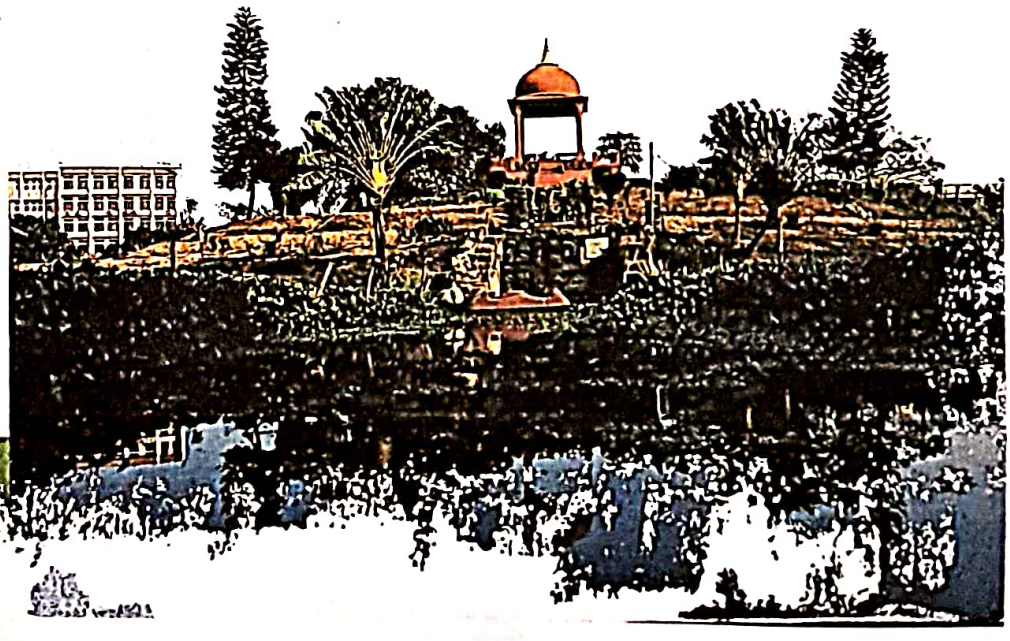
1. Biodiversity of the Golapbag campus being closely related to the ecological security caters to human welfare. The university has taken various measures to reinforce the biodiversity heritage of the campus, traditionally sustained since the 1860s. But, in order to conserve this priceless green heritage for the larger societal posterity, it seems, the Goalpabag Campus needs special attention from the Government.

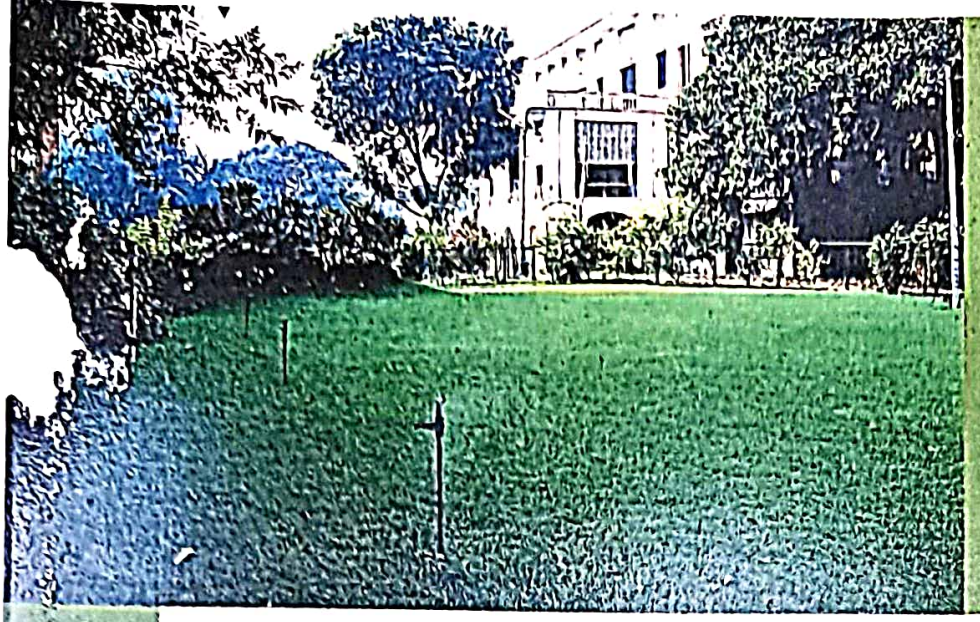
2. The proposal fulfills academic, aesthetic, cultural and ecological needs of the people of the larger Burdwan town and its adjoining areas since it has all the virtues to represent a positive interface between nature, culture, society and technologies in such a way that conservation and livelihood security can be achieved, as also positive link between wild and domesticated biodiversity can be enhanced.

3. The University of Burdwan being the second largest university of West Bengal has been recently placed at the 27th position among the First-50 Universities of India (India Today Ranking-2015). The recognition of its academic campus as Biodiversity Heritage Site would further help enhance its position.

4. Burdwan University has been for long serving as a premiere agency in south Bengal for spreading the concepts of conservation ethics in the society through its Rural Technology Centre and the social outreach programme of different academic Post-graduate departments.

5. Of late, the university's Golapbag Campus is being repeatedly used by local administrative authorities for election and associate purposes much to the detriment of its biodiversity heritage. An activity like this literally neutralizes the results of conservation efforts of many years involving much labour and cost. A Biodiversity Heritage Site tag to the campus could save it from permanent menace, such as this.





Golapbag Campus fulfills all the criteria necessary the BHS recognition:

i. The campus contains a mosaic of natural, semi-natural and academic components, which collectively contain a significant diversity of life-forms.

ii. The university's Crop Research and Seed Multiplication Farm (CRSMF), an adjunct to the Golapbag and the beautiful moat that surrounds the campus, with historic island (*Dar-ul-Bahar*), wide range of plant genetic resources sustained through its agro-ecosystem literally form an oasis in this centuries' old little congested town

iii. The campus accommodates many a threatened and rare specie of the macro and microscopic plants and animals in its greens and wetlands.

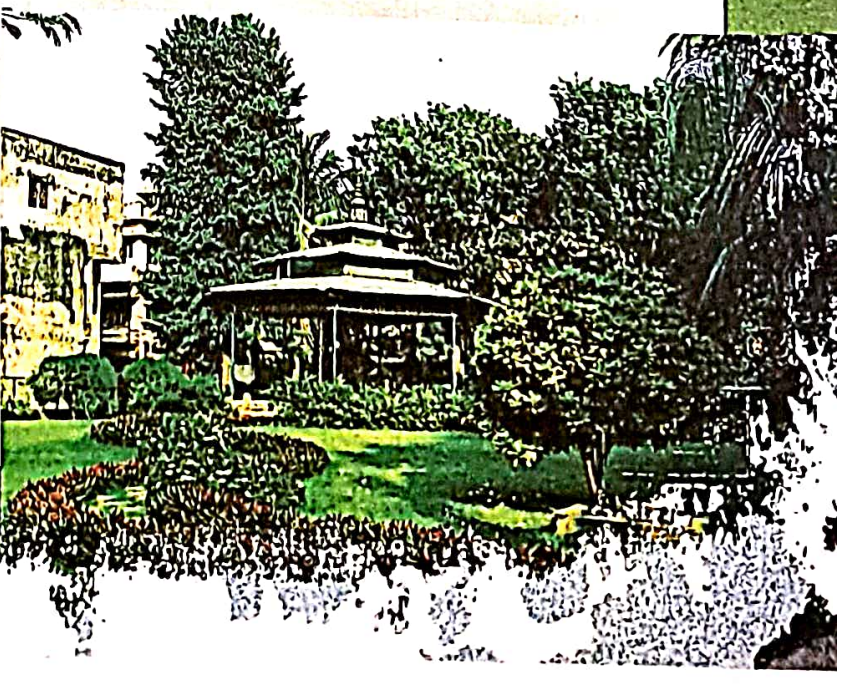
iv. The site is not covered under the Protected Network of the Wildlife Protection Act 1972 as amended.

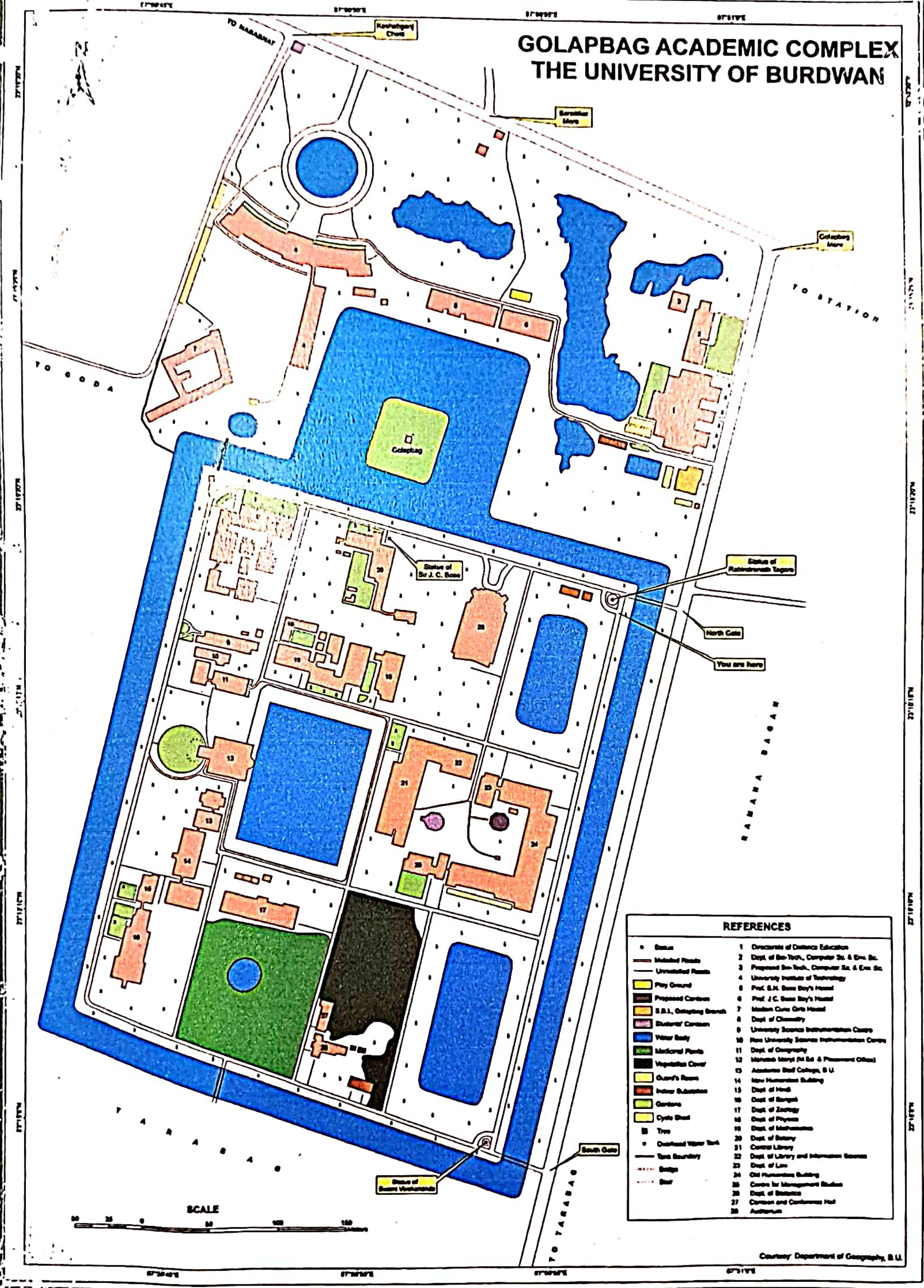
v. The area provides habitats, aquatic and terrestrial, to seasonal migrant species for feeding and breeding.

vi. Areas are maintained as experimental plots by teachers and researchers of Botany and Zoology departments.

vii. Medicinal Plant Conservation Areas are well sustained in isolated protected areas within the campus.

viii. The Rajbati campus of the University of Burdwan or the royal palace known as the *Mehtab Manjil* has been already declared a heritage site by the Govt. of West Bengal.




GOLAPBAG ACADEMIC COMPLEX
THE UNIVERSITY OF BURDWAN
TO NABABHAT
TO STATION
TO GODA
Golapbag
North Gate
You are here
South Gate
RAMANA BAGAN
TARABAG
TO TARABAG
SCALE
REFERENCES
Statue
Metalled Roads
Unmetalled Roads
Play Ground
Proposed Canteen
S.B.I., Golapbag Branch
Students' Canteen
Water Body
Medicinal Plants
Vegetation Cover
Guard's Room
Indoor Substation
Gardens
Cycle Shed
Tree
Overhead Water Tank
Bridge
Stair
1 Directorate of Distance Education
2 Dept. of Bio-Tech., Computer Sc. & Env. Sc.
3 Proposed Bio-Tech., Computer Sc. & Env. Sc.
4 University Institute of Technology
5 Prof. S.N. Bose Boy's Hostel
6 Prof. J.C. Bose Boy's Hostel
7 Madam Curie Girls Hostel
8 Dept. of Chemistry
9 University Science Instrumentation Centre
10 New University Science Instrumentation Centre
11 Dept. of Geography
12 Academic Staff College, B.U.
14 New Humanities Building
15 Dept. of Hindi
16 Dept. of Bengali
17 Dept. of Zoology
18 Dept. of Physics
19 Dept. of Mathematics
20 Dept. of Botany
21 Central Library
22 Dept. of Library and Information Science
23 Dept. of Law
24 Old Humanities Building
25 Centre for Management Studies
26 Dept. of Statistics
27 Canteen and Conference Hall
28 Auditorium
Courtesy: Department of Geography, B.U.

The University of Burdwan
Golapbag, Burdwan, Pin: 713104

Annexure 1.7:

Institutional Green Policy

Annexure: 1.7

UNIVERSITY INITIATIVE OF FRAMING GREEN POLICY

I. Prelude

Environmental policy is the commitment of an HE organization or government to the laws, regulations, and other policy mechanisms concerning environmental issues. These issues generally include air and water pollution, waste management, ecosystem management, maintenance of biodiversity, the management of natural resources, wildlife and endangered species. Concerning environmental policy is the implementation of an eco-energy-oriented policy at a global level to address the issues of global warming and climate changes. Policies concerning energy or regulation of toxic substances including pesticides and many types of industrial waste are part of the topic of environmental policy. This policy can be deliberately taken to influence human activities and thereby prevent undesirable effects on the biophysical environment and natural resources, as well as to make sure that changes in the environment do not have unacceptable effects on humans.

Environmental issues typically addressed by environmental policy include (but are not limited to) air and water pollution, waste management, ecosystem management, biodiversity protection, the protection of natural resources, wildlife and endangered species, and the management of these natural resources for future generations.

Environmental policies often address issues in one of three dimensions of the environment: ecological (for instance, policies aimed at protecting a particular species or natural areas), resource (for instance, related to energy, land, water), and the human environment (the environment modified or shaped by humans, for instance, building/Land use & Land cover planning, pollution).

In contrast to environmental policy, ecological policy addresses issues that focus on achieving benefits (both monetary and non-monetary) from the non-human ecological world. Broadly included in ecological policy is natural resource management (fisheries, forestry, wildlife, range, biodiversity, and at-risk species).

II. Introduction

Environmental Policy is that it comprises two major terms: Environment and Policy. Environment refers to the physical ecosystems, but can also take into consideration the social dimension (quality of life, health) and an economic dimension (resource management, biodiversity). Policy can be defined as a "course of action or principle adopted or proposed by a government, party, business or individual". Thus, environmental policy tends to focus on problems arising from human impact on the environment, which is important to human society by having an (negative) impact on human values. Such human values are often labelled as good health or the 'clean and green' campus environment. In practice, policy analysts provide a wide variety of types of information to the public decision-making process.University respects a good relationship with the natural environment and its ecosystems. We acknowledge the adverse impacts that human activity can impose and take actions to prevent degradation of those natural

systems. We acknowledge the specific impacts of our academic activities on the natural environment, and our responsibility as a good corporate citizen to ensure a natural environment that is sustainable.

The term "Green" means eco-friendly or not damaging the environment. This can acronymically is called as "Global Readiness in Ensuring Ecological Neutrality" (GREEN).

Green Policy helps to provide a systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The aims of 'policy' are to analyze environmental practices within and outside the institute campus, which will have an impact on the eco-friendly ambience; as well as to improve the condition of environment.

Environmental Policy includes the plants community, greenery and sustainability of the campus to ensure that the infrastructures/buildings conform to green standards, also helps to follow the practices as per Environmental Policy.

Policy includesalso methodology of preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations; it works on the several facets of 'Green Campus' including Water Conservation, Tree Plantation, Waste Management, Paperless Work, Alternative Energy and Mapping of Biodiversity.

Green policy is assigned to the Criteria 7 of NAAC, which embraces there main pillars,*i.e.,* zero environmental foot print, positive impact on occupant health and performance and 100% graduates demonstrating environmental literacy. The goal is to reduce CO_2 emission, waste generation (in-site/off-site), energy and water use, while creating an atmosphere where students can learn and be healthy.

III. Key Components of Environmental Policy

An environmental policy serves as a roadmap for the University to define their commitment towards sustainable practices and outline strategies to minimize their impact on the environment. The key components of an environmental policy template and step-by-step guide to create it.

i. This Environmental Sustainability Policy formalizes our commitment to supporting the principles of environmental sustainability and recognizes that a sustainable environment is maintained in the our work place.

ii. The University of Burdwan is committed to managing its activities to promote environmental sustainability, conserve and enhance our natural resources, prevent environmental pollution and bring about continual improvement in our environmental performance.

iii. The aim of this Environmental Sustainability Policy is to integrate a philosophy of environmental sustainability into the organization's activities and to establish and promote sound environmental practice in our operations. It will achieve this way:

a. Informing staff and all stakeholders of our commitment to the environment and sustainability.

b. Supporting the implementation of environmental actions within our University.

c. Monitoring the progress of those environmental actions.

d. Communicating the outcome of those environmental actions to relevant stakeholders.

IV. Objectives of Environmental Policy

Specific objectives of theEnvironmental Policy of the University of Burdwan is to reduce its environmental impact.

These objectives should be measurable, time-bound, and aligned with relevant sustainability goals.

This could include areas such as carbon neutrality, greenhouse gas emissions, water usage, waste generation, or biodiversity conservation.

Create provisions to include initiatives such as green campus, clean & safe campus, implementation of energy-efficient technologies, promoting recycling programs, or investing in renewable energy sources.

V. Roles and Responsibilities of Stakeholders

This policy is owned by The University of Burdwan. It was adopted on ..... and will be reviewed after every two years of action. Changes may be made at any time based on guidance or amended organisational priorities.

Suggestions for changes or additions to this policy are welcome and should be reported to the entrusted Green Committee.

VI. Coverage of the Policy

This policy covers all students, teachers, non-teaching members, officers, directors, consultants, contractors, volunteers, alumni, interns, casual workers and agency workers.

Clearly define roles and responsibilities of stakeholders for the successful implementation of an environmental policy.

Must specify tasks related to environmental management and sustainability.

Starting from top administration/management, department heads, or designated teams will be responsible for specific areas such as energy management or waste reduction.

Emphasize the creation/generation of awareness in achieving environmental goals through programmes.

Steps to encourage all stakeholders to take responsibility for their own actions on environmental awareness.

VII. Monitoring and Review

Regular monitoring and review are essential to ensure that environmental policy remains effective over time.

Identify key performance indicators (KPIs) that will be used to measure progress towards environmental objectives.

These could include metrics such as energy consumption, waste reduction, or water usage.

Explanation on data collection and analysis to track progress.

This could involve regular audits, data collection systems, or third-party certifications prescribed by authority.

Provision of reviewing policy to ensure that organization remains adaptable to take new environmental challenges and can make necessary updates to its strategies and objectives.

VIII. Terminology

Campus means – Golapbag, Rajbati, Tarabag, Hostel premises, Farm House, Staff Residential Houses, Guest Houses

Department means – All academic, administrative, centres*etc.*

IX. Principles & Practices

The University of Burdwan commits to the following principles and practices:

i. Monitoring and managing the environmental performance and working towards targets set to reduce adverse impacts.

ii. Complying with all relevant international, national, state and local environmental policy, practices, regulations and legislation, and institute-specific best practice.

iii. Reducing the consumption of natural resources in daily operations, including water, paper and energy.

iv. Maximising the recycling of resources.

v. Disposing of all waste appropriately, and minimising waste sent to non-recyclable disposal sites.

vi. Committing to the principles of preventing pollution to the environment and continual improvement in our environmental management.

vii. Minimising pollution by taking steps to limit carbon emissions resulting from vehicles.

viii. Reviewing this policy annually and measuring targets and performance as part of that review.

X. Policy formation

Preparation of green policy

Establishment of University Environmental Committee

Under the umbrella of this Committee following committees may be constituted and will function

i) Advisory Committee: Chairman, Head of the Institute & one Convener

ii) Environment Management Committee - Coordinator

iii) Energy Management Committee - Coordinator

iv) Waste Management Committee - Coordinator

v) Water Management Committee - Coordinator

vi) E-waste & Radioactive waste Management Committee - Coordinator

vii) Institutional Biosafety Committee - Coordinator

viii) Animal Ethical Committee - Coordinator

ix) Biodiversity Register Committee - Coordinator

x) Policy on health surveillance of the faculty/students/research scholar handling with radioactive/microbiological wastes - Coordinator
xi) Wide publication of DOs & DONOTs in and around the campuses/departments - Coordinator
3. Reward/Appreciation to the Committee/Group for good work

XI. Provisions of Policy

1. Natural Environment and Assets

The University of Burdwan commits to increasing opportunities for nature to thrive on the assets we own, lease or manage; it includes land, water and air.

We are committed to maintain biodiversity, and will work to ensure our actions on the assets we own or manage do not have a detrimental impact on the natural environment and will support biodiversity.

2. Purpose

This document describes the Environmental Policy of the University and procedures for conducting the operations and activities in an environmentally responsible and sustainable manner.

3. Background

The University of Burdwan has created/prepared this Policy in the year 2022-23 in the name of "Burdwan University Environmental Policy" of The University of Burdwan to officially declare a commitment to the protection of the environment and responsible use of natural resources. As the steward of academic and administrative and students' behavioural research for the Nation, the University of Burdwanleads the way in the pursuit of knowledge about living systems and the application of the knowledge to extend healthy atmosphere/campus and reduce pollution and hazards. As proactive keepers of the public health and the environment, the University of Burdwancommunity embraces pollution prevention and sustainable development while continually seeking to reduce resource consumption.

The University of BurdwanEnvironmental Policy establishes the following important commitments:

- Compliance with all federal, State, and local environmental laws and regulations, as well as Executive Orders.
- Prevention of pollution by minimizing the generation of wastes where possible, reducing consumption, recycling materials, and disposing of wastes in an environmentally responsible manner.
- Integration of environmental and health considerations of all the stakeholders into decision-making processes.
- All the stakeholders of The University of Burdwanare responsible for being aware of the environmental and clean/safe campus for continually striving to minimize these impacts as set forth in this policy.

4. Policy documents

The University of Burdwanis committed to complying with all applicable laws and regulations. We recognize that reducing and, where possible, eliminating the environmental impacts of our activities is an important part of our mission as stewards of institutional health/students' health. We strive to be a leader among the HEIs and Centers in achieving environmental excellence and will work with our employees and other internal and external entities to establish and follow principles, in conjunction with the Environmental Policy of The University of Burdwan, that will guide the environmental practices of the University.

The Policy of the University would be the guiding principles and practices to achieve resource conservation, waste reduction, and sustainability overall are summarized below:

- Comply with mandatory requirements and conduct our activities and operate our facilities within applicable environmental laws and regulations.
- Conserve energy and other natural resources.
- Encourage stakeholders to use mass/public transit.
- Reduce, reuse, and recycle to reduce waste.
- Minimize the production of hazardous waste.
- Adopt green procurement practices/tree plantation/monitoring through students involvement.
- Ensure all employees complete the environmental awareness training.
- Continue to review and minimize the impacts of activities.

5. Responsibilities

a. Responsibility of all Stakeholders

- ✓ Turn off lights when not in use and use natural light when possible.
- ✓ Turn off, not just log off, all computers, terminals, speakers and other office equipment at the end of every work day.
- ✓ Turn off your power strip at the end of every work day.
- ✓ Activate the power down features on your computer and monitor to enter into a low-power or sleep mode when not in use.
- ✓ Unplug equipment that drains energy even when not in use (e.g., cell phone chargers, fans, coffee makers, desktop printers, radios).
- ✓ Use LED as much as possible/replace the non-functional incandescent tube lights/lights whenever possible.
- ✓ Utilize videoconferencing and conference calls as an alternative to travel when possible.
- ✓ Reduction of Materials Consumption

i. Teaching staff

- ✓ Ride mass/public transit or other alternative forms of transportation, whenever possible.
- ✓ Use carpools or vanpools, when possible, avoid single use cars/celebration of 'No Vehicle Day'.

- ✓ Minimize waste and increase recycling.
- ✓ Use durable reusable beverage containers, plates, and utensils.
- ✓ Reduce the amount of toner in documents that will be printed when possible.
- ✓ Print documents in black and white or grayscale whenever possible.
- ✓ Recycle paper, paper products, plastic, binders, folders, catalogues, boxes, bottles, cans, batteries, electronics, toner and ink cartridges.
- ✓ Recycle plastic and paper products in accordance with rules such recycling will be developed by the Green Team.
- ✓ Administration shall:
- ✓ Dispose used furniture and electronics through in proper way.
- ✓ Do not use or purchase mercury or mercury-containing equipment, unless approval has been obtained.
- ✓ Purchase chemicals in the smallest quantities needed to avoid over-ordering.
- ✓ Dispose of hazardous chemicals appropriately and in accordance with the Disposal Guide and other legal requirements.

ii. OfficeStaff

- ✓ Avoid using paper by distributing and storing documents electronically.
- ✓ Print and photocopy only what you need and double side your jobs when possible.
- ✓ Tell staff and colleagues that you prefer double-sided documents.
- ✓ Use the back side of old documents for faxes, scrap paper, or drafts.

b. Commitment to Green Purchasing

- ✓ Purchase copier and printer paper that contains at least 30% post-consumer recycled content.
- ✓ Purchase office supplies and furniture that contain the highest percentage of recycled and non-toxic content whenever possible.
- ✓ Purchase products that contain bio-based content whenever possible.
- ✓ Use the Electronic Product Environmental Assessment Tool (EPEAT) to identify computers and monitors with environmental attributes and purchase computers and monitors with at least a Bronze rating.
- ✓ Purchase quality furniture and electronics goods
- ✓ Creation of increased awareness amongst students, teaching, non-teaching staff members regarding impact on the Environment and Health.

c. Waste and recycling

University is committed to keeping waste to an absolute minimum by preventing, reusing, recycling or recovering waste wherever possible. We will ensure waste is sorted, stored and disposed of properly and in a sustainable manner in all of our locations.

We aspire to be a zero-waste organisation. We will achieve this by the ways of:

a. Phasing out the use of single-use plastics.
b. Recycling 100% of recyclable material.
c. Reducing the use of non-recyclable material and offsetting where this is not possible.
d. Promoting and encourage recycling by all staff.
e. Using recyclable, compostable and/or recycled products on our premises.
f. Reducing the production of non-recyclable resources such as laminated or plastic based publicity material.
g. Minimise the amount of printing and the amount of wastepaper.
h. Using electronic communication as our primary method of communication and use an opt-in scheme for paper-based communication.
i. Minimising pollution and preventing it wherever possible, including light, noise, solids, liquids and chemicals.
j. Promoting the use of composting for organic waste.

Our basic motto will be to reducing our carbon footprint.

d. Reduction in emissions

a. Undertake an energy audit
b. Produce a plan to reduce our energy usage.
c. Produce a plan to switch to 100% renewable energy procurement.
d. Installation of SOLAR PANNELS/SOLAR STREET LIGHTS can be used on our assets.

XII. Information technology and sustainability

University will follow the process towards the use of certified sustainable PCs, laptops, monitors, mobile devices, network and server hardware.

All equipment must be disposed of correctly through an approved e-waste recycling contractor.

No IT equipment should be sent to landfill or thrown out.

University will make available the use of applications and systems to reduce the need for printing paper and reduce the use of personal printers where they are not required.

Conducting awareness programmes/Training and staff involvement

University will encourage all staff to undergo training on environmental sustainability and climate change.

University will aim to raise awareness of environmental sustainability across our operations.

University will encourage collaboration and involvement of all staff on the environmental sustainability efforts.

University will establish a sustainability steering group to drive involvement and stewardship of sustainability across the organisation.

XIII. Execution part

i) Creation of budgetary head in University annual budget.
ii) Betterment of e-governance and paperless administration.

ii) Preparation of number of Primary Treatment Plants/STP/ETP at Golapbag Campus
iii) Preparation of composting pits at different places like Golapbag/Hostels/Canteen/Guest House/Farm House
iv) Safety measurement of microbiological organisms, in particular, Botany, Biotechnology, Microbiology, Zoology, etc., departments
v) Safety measurement of radioactive wastes generated in-site at departments of Physics and Chemistry.
vi) Policy for destroying and recycling of waste/discarded papers, certificates, exam copies, confidential papers more than 10 years etc.
vii) CRSMF, KSG, Lahar, different water bodies inside the Golapbag campus be used for Ecosystem assessment and experimentation for Research scholars, students, faculty members
viii) Evaluation of quality of drinking water for consumption; and reuse of gray water for conservation.
ix) Preparation of year-wise report from every committee and placed before the Advisory Committee – Good working Committee/Group be rewarded with token of appreciation; direct students involvement be assessed on regular basis and may be counted as performance appraisal.

XIV. Identification of environmental issues

i) Identification of existing plants with proper register keeping records like mapping, name, age, height, canopy, coverage area, regular plantation.
ii) Measurement of carbon neutrality year-wise analysis; carbon foot print; water foot print.
ii) Monitoring of terrestrial weeds in and around the campus.
iii) Maintenance of water bodies including Lahar for productive purposes like aesthetic, pisciculture, makana-cum-fish culture, preparation of profile of water quality parameters.
iv) Maintenance of liquid waste, drainage system and final disposal site.
v) Proper disposal mechanism of solid wastes, construction & demolition wastes, other infrastructural wastes generated from different sources.
vi) Maintenance of all types of wastes generated from laboratories.
vii) Maintenance of microbiological wastes and radioactive wastes.
viii) Maintenance of e-wastes from different departments.

XV. Management aspects

i) Regular cleaning, washing of the departments, toilets etc.
ii) Construction of more toilets for girls' and lady faculties, lady officers, etc.
iii) Preparation of day care centre.
iv) Regular monitoring of drinking water quality of hostels, canteen, departments, residential areas, health centre, in regard to pH, TDS, MPN, inparticular.
v) Regular checking of Roof-top tanks, water leakage, uncontrolled excess flow/wastes.

<u>Disposal Policy</u>

- ✓ Framing the rules and guidelines with local administration/municipality/govt. authorized agencies for disposal of different types of wastes, cleanliness of campuses, departments, drainage system, disinfectant process.
- ✓ Preparation of incinerators for radioactive wastes/microbiological wastes etc./biological or animal wastes.
- ✓ Engagement of different agencies/groups as per Govt. license holders with annual maintenance contract – continued on the basis of feedback report.

XVI. Energy management

i) Installation of one main switch/MCP for operating whole department/ building electrical control system.

ii) All departmental spaces/rooms be marked with proper numbers.

iii) Estimation of electrical connectivity at every point like number of tube light, fan, LED, ICT-based instrument, PAS, computer & accessories/peripherals.

iv) Estimation of consumption of electricity in the campus/departments – may be awarded/incentives for those for less consumption year-wise.

[team of electrical professional will visit and prepare the data]

XVII. Monitoring system

i) Every campus/department will be declared as "Plastic Free Area".

ii) Every department in the different campuses be involved in the process of institutional responsibility programs like campus cleaning/outreach pgm/social awareness pgm/preparation of biodiversity register/preparation of bird nesting/maintenance of front garden/maintenance of particular plantswith register/collection and disposal of leaf-litter for composting/watershed management *etc.*, guided by at least one teacher.

iii) Formation of student volunteer groups by the department, which is mandatory – preferably students of First SEM will be involved and 2 credit score will added as outreach program in SEM III/IV as per syllabus as a regular/continuous system.

Credit Score will be awarded in presence of Head/TIC and any one of the members of Green Committee

iv) An amount of Rs 5000/- will be provided as an advance to every department as one-time grant for this activity (this may be rationed as per number of students).

XVIII. Formation of Different Committees

i) Advisory Committee:
Chairman, Head of the Institute
Convener
Registrar
Deans of the Faculties
Senior members of faculties

ii) Environment Management Committee

Coordinator
Members of different departments
One/Two student(s) representative

iii) Energy Management Committee
Coordinator (Preferably Engineer)
Electrical Engineer
One/Two student(s) representative
Other members

iv) Waste Management Committee
Coordinator (Faculty from Chemistry/Physics)
Members from local administration/municipality
One/Two student(s) representative

vi) E-waste & Radioactive waste Management Committee
Coordinator (Faculty from Chemistry/Physics)
Member from Biosafety committee/Animal ethical committee
One/Two student(s) representative

vii) Institutional Biosafety Committee
Coordinator (existing as per Central Govt. Policy)
One/Two student(s) representative

viii) Animal Ethical Committee
Coordinator (existing members)

ix) Biodiversity Register Committee
Coordinator (preferably from Botany/Zoology)
Other members

x) Policy on health surveillance of the faculty/students/research scholar handling with radioactive/microbiological wastes
Coordinator
One Doctor from Health Centre
Other members

xi) Wide publication of DOs & DONOTs in and around the campuses/departments
Coordinator
One/Two student(s) representative
Other Members

XIX. Conclusion

Creating an effective environmental policy is a crucial step for organizations committed to sustainability. By following a well-designed template and considering the key components followed. Preparing and development of a comprehensive environmental policy must align with organization's values, goals, and legal obligations. An environmental policy is not just a document but a commitment towards building a better future for our planet.

Annexure 1.7.2:

Institutional Green Committee members

Annexure: 1.7.2

Green Audit Sub Committee
University of Burdwan

The **Green Audit Sub committee** (GA_Sc) functioning under the aegis of NAAC preparedness Sub-Committee which was duly approved by the university authority. In the meeting of the GA_Sc it was resolved that there is a need to constitute the **Institutional Green Committee** (IGC), University of Burdwan to formulate and frame the Green and Environmental Policies of our university. This IGC will also oversee; monitor the implementation of the recommendations made by the GA_Sc time to time. The following names of the members as proposed in the said meeting are being placed for administrative approval.

Institutional Green Committee, BU:

1. Dr J P Keshri, Dept of Botany, BU
2. Dr A R Ghosh, Dept of Environmental Science, BU
3. Dr A Mazumdar, Dept of Zoology, BU
4. Dr P Chattopadhyay, Dept of Chemistry, BU
5. Dr Biplab Biswas, Dept of Geography, BU
6. Dr Sumit Kr Hira, Dept of Zoology, BU
7. Dr Srimanta Gupta, Dept of Environmental Science, BU
8. Dr Pradipta Saha, Dept of Microbiology, BU
9. Dr Asok Ghosh, Dept of Botany, BU

Coordinator,
Green Audit Sub Committee, B.U.

Director
IQAC

Director, IQAC may kindly ask approval of this Committee from Hon'ble Chancellor Sir

(MMC Coordinator)

Hon'ble VC Sir

For your kind approval of the Committee.

Director, IQAC
BU

(10). Prof. Samudranath Kisharedulla (Economics)
(11) Prof. Samudranath Chattopadhyay (Zoology)
(12) Dr. Indrani Chandra (Biotechnology)

Approved.
22.12.21

Annexure 1.7.4: Resolution of the meetings

Annexure 1.7.5: Action taken by the committee

Annexure 1.7.6: Future programmes of the committee

Annexure 1.7.7: Policy enforcement strategies

Annexure: 1.7.4- 1.7.6

Green Audit Sub-Committee
Third meeting
Date 26/11/2021,venue Office chamber HoD, Zoology

Members present

Sr. No	Name	Signature
1	Dr Abhijit Mazumdar	26/11/2021
2	Dr A R Ghosh	26/11/2021
3	Dr Biplab Biswas	
4	Dr P Chattopadhyay	Chattopadhyay 26/11/2021
5	Dr Jai Prakash Keshri	
6	Dr Sumit Hira	26/11/21
7	Dr Srimanta Gupta	
8	Dr Pradipta Saha	26.11.2021
9	Dr Asok Ghosh	26/11/2021

Second meeting of the Green Audit Sub-Committee

Members present-

Sr. No	Name	Signature
1	Dr Abhijit Mazumdar	09/11/2021
2	Dr A R Ghosh	09/11/21
3	Dr Biplab Biswas	
4	Dr P Chattopadhyay	Chattopadhyay 09/11/2021
5	Dr Jai Prakash Keshri	Jaiprakash Keshri 09/11/2021
6	Dr Sumit Hira	9/11/21
7	Dr Srimanta Gupta	Srimanta Gupta
8	Dr Pradipta Saha	
9	Dr Asok Ghosh	Asok Ghosh 09/11/2021

Green Audit Sub-Committee (GA_SC)
Meeting #2
held on 09.11.2021, 2.00 pm
Venue: HoD's Office, Department of Zoology, The University of Burdwan

Members present:

Dr Abhijit Mazumdar, Coordinator
Dr A R Ghosh
Dr P Chattopadhyay
Dr Jai Prakash Keshri
Dr Sumit Kr Hira
Dr Srimanta Gupta
Dr Asok Ghosh

Resolution

1. With reference to 1.9 of Green Audit Questionnaire format it is resolved that members for the Institutional Green Committee will be proposed by Green Audit Committee from different stake holders i.e. Teachers, Officers, non-teaching staff members, research scholars and students of our University and accordingly the proposal will be placed to Vice-Chancellor sir for necessary approval.
2. With reference to 1.10 all the members decided to move a proposal through proper channel for the nomination of a new Member Secretary for our Institutional Biosafety committee.
3. In reference to 1.10.7 committee members decided that a webinar will be conducted by the members to aware the teachers, officers and non-teaching staffs of the university. Video recording of the programme will the circulated among the students and research scholars by the respective HoDs of each department.

   It is also resolved the students will give their awareness feedback through Google form and for that questionnaires will be formulated by Prof. A.R.Ghosh, Dept. of Environmental Science and Prof. P. Chattopadhyay, Dept. of Chemistry.

4. Members reviewed the progress of preparing Campus Biodiversity Register and resolved that geotagging of individual tree species will be carried out by the research scholars of Botany, Geography and Environmental Science departments under the supervision of Prof. A. Ghosh, Prof. B.Biswas and Dr.S.Gupta
5. Regarding 2.6 members decided that waters samples will be collected from the i) Administrative building, ii) Composite building, iii) Humanities and iv) Scholars hostel and necessary analysis will be done for water quality parameters.
6. Regarding water management, waste management and energy conservation questionnaire database will be provided by Mr. Arijit Chatterjee, University Engineer.
   In this regard proposal will be placed to Engineering Section for the preparation of Sand/gravel bed filter media through which laboratory wastewater should be passed before terminating it to 'Lahar'.

Green Audit Sub-Committee (GA_SC)
Meeting #1
Held on 30.09.2021, 12.00 hrs
Venue: HoD's Office, Department of Zoology, The University of Burdwan

Members Present:

Dr Abhijit Mazumdar, Coordinator
Dr A R Ghosh
Dr Biplab Biswas
Dr P Chattopadhyay
Dr Jai Prakash Keshri
Dr Sumit Kr Hira
Dr Srimanta Gupta
Dr Pradipta Saha
Dr Asok Ghosh

MEETING RESOLUTION

Dr A Mazumdar, the Coordinator of the **Green Audit Sub-Committee (GA_SC)** welcomes all the members of the Committee and initiated the meeting. It has been discussed that when it is possible, the data would be collected Year-wise – 2016-17 to 2020-21

The GA_SC resolved that the required information would collect and works would be done by the following means:

ITEM / Agenda	Resolution/ Works would be done by
1. GENERAL INFORMATION	
1.1 Year of Establishment:	Prof. Dr Abhijit Mazumdar, the Coordinator, ARG, SG, BB shall work on these points
1.2 History behind the establishment:	
1.3 Total campus area:	
1.4 Total built up area:	
1.5 Total open space area:	
1.6 Total green area:	
1.7 Whether the institutehas framed any "Institutional Green Policy"/ OR for the first time: **"yes", "no" and "not applicable" [if Yes,** (mention date/month/year& (give the details of it)	Dr A Mazumdar, Dr A R Ghosh shall take initiative to frame "Institutional Green Policy" and the same would be placed before the Executive Committee for approval. The policy shall also include the plan for 'Waster Water Management'
1.7.1 Name of Committees formed	~~Green Audit Committee (GAC)~~ Institutional Green Policy Committee
1.7.2 Name of the Committee members	Dr A Mazumdar, Coordinator (AM) Dr A R Ghosh (ARG) Dr Biplab Biswas (BB)

June 2022

	Dr P Chattopadhyay (PC) Dr Jai Prakash Keshri (JP) Dr Sumit Kr Hira (SKH) Dr Srimanta Gupta (SG) Dr Pradipta Saha (PS) Dr Asok Ghosh (AG)
1.7.3 Number of meetings conducted so far	One
1.7.4 Resolution of the meetings	
1.7.5 Action taken by the Committee	
1.7.6 Future programmes of the Committee	
1.7.7 Policy enforcement strategies	
1.8 Whether green audit is followed annually, if so, please produce the year-wise recommendations of the auditor along with report (as Annexure): "yes", "no" and "not applicable"	
1.9 Whether institute has constituted the "Institutional Environmental Committee", "yes", "no" and "not applicable"(if so, give the details of it)	YES Green Institutional Green committe will act.
1.9.1 Name of the Committee members	Dr Abhijit Mazumdar, Coordinator Dr A R Ghosh Dr Biplab Biswas Dr P Chattopadhyay Dr Jai Prakash Keshri Dr Sumit Hira Dr Srimanta Gupta Dr Pradipta Saha Dr Asok Ghosh
1.9.2 Number of meetings conducted so far:	ONE
1.9.3 Resolution of the meetings:	
1.9.4 Action taken by the Committee	ARG
1.9.5 Future programmes of the Committee	ARG
1.9.6 Policy enforcement strategies	ARG .
1.10 Whether institute has conducted any awareness/responsibility programme among the staff members: "yes";"no" and "not applicable"	
1.10 Whether institute has framed any "Institutional Biosafety Committee", "yes", "no" and "not applicable" (if so, give the details of it)	Dr Sumit Kr Hira shall take initiative for framing "Institutional Biosafety Committee"
1.10.1 Name of the Committee members	
1.10.2 Number of meetings conducted so far:	

1.10.3 Resolution of the meetings:	
1.10.4 Action taken by the Committee	
1.10.5 Future programmes of the Committee	
1.10.6 Policy enforcement strategies	
1.10.7 Whether institute has conducted any awareness/responsibility programme among the staff members: **"yes", "no" and "not applicable"**	
1.11 Whether all the departments/teachers/non-teaching members/students are aware about the need of the environmental protection and audit: **"yes", "no" and "not applicable"**	To make mass awareness/responsibility among the departments/teachers/non-teaching members/students, Webinar(s) programme among the staff members of the University of Burdwan shall be conducted on 08.10.2021, 7.00PM. All HoDs, EO, DO, University Engineer, NSS Coordinator, Coordinator of Crop Research and Seed Multiplication Center, Coordinator of Krishnaseyar Committee would be invited for the Webinar. Dr. Asok Ghosh shall look for any historical data on BU Campus plantation program and shall present it in the Webinar. Dr A Mazumdar, Dr A R Ghosh shall convene the Webinar
1.12 Whether institute has involved the students as volunteers in greening programmes: **"yes", "no" and "not applicable"**	
1.13 Whether construction/demolition/repairing are in compliances with green standard: **"yes", "no" and "not applicable"**	University Engineering section shall be asked for the information on this
1.14 Whether institute has conducted any workshop/seminar/lecture on environmental awareness programme inside and/or outside the campus: **"yes", "no" and "not applicable"**	
1.15Whether the institute has department of Law/Environmental Science/3-Year degree Course/Course curriculum **"yes", "no" and "not applicable"** (if so, how does it takes part in greening programmes)	**Departmental of Environmental Science, BU** shall prepare a report on this same
1.16 Whether institute provides any community services, if so, give details (as Annexure): **"yes", "no" and "not applicable"**	Coordinator – NSS and HoDs shall be approached for any information on the same
1.17Whether the students are aware about the use of medicinal plants (any lecture/seminar/conference organized on it): **"yes", "no" and "not applicable"**	Dr A Ghosh shall prepare a Report and deliver a lecture on the Medicinal Plant
1.18 Comments on the following:	

1051 trees
129 species.

1.18.1 Plantation program: Y / N	NSS, Jaitvanka, Pantha Estate
1.18.2 Formation of Natural club/Eco club: Y / N	
1.18.3 Management of natural resources, wildlife, conservation of species: Y / N	
1.18.4 Any project sponsored by national funding agency/NGO, independent project related to environmental issues: Y / N	
1.18.5 Is there any incidence of burning of plastics containing garbage within the campus for necessary reduction: Y / N	
1.18.6 Celebration of 5th June, Ozone day, Earth Day etc.: Y / N	YES
1.18.7 Number of field visits/survey records: Y / N (if Y number)	HoDs and Senior Secretary FC Science shall be approached for the information
1.18.8 Campus biodiversity register	DR J P Keshri and Dr A Ghosh shall prepare the Biodiversity Registrar and Dr B Biswas and Dr P Saha shall prepare map
1.19 General aspects (express in statements)	Germplasm conservation - Crop Research
1.19.1 Campus cleanliness	
1.19.2 Rainwater harvesting	
1.19.3 Solar street lamps	
1.19.4 Carbon dioxide neutrality on the campus by developing greenery	
1.19.5	
1.19.6	
1.19.7 Man-made nest to attract some birds to maintain ecological balance	
1.19.8 Restriction in use of plastic and plastic products	The University campus has been declared as ' No Plastic Zone'
1.19.9 Culture of some ducks, swans etc., for scenic beauty in pond or any water body resources (if available)	
1.19.10 Green monitoring by green committee/volunteers/team	
1.19.11 Training on vermicomposting	
1.19.12 Celebration of 'No vehicle Day' on a particular day	
1.19.13 Dams inside the campus to meet the demand for water	
1.19.14 Installation of fire safety instruments in all the buildings/departments	
1.19.15 Toilets/separate toilets for differentlyabled students	

Ashok Ghosh

1.20 Over all noise level

Sl no.	Inside campus area	Outside campus	Class room	Lawn	Office	Laboratory	Canteen

1.21 Is there any device (preferably HVS: High Volume Sampler) for measuring ambient air quality in the campus (if sopl mention the data month wise): **"yes""no" and "not applicable"**	YES
2. WATER MANAGEMENT	
2.1 Whether institute has an efficient and hygiene water storage mechanism to minimize the loss of water during storage. **"yes", "no" and "not applicable"**	Dr A R Ghosh shall collect data from the Engineering Section of the University UE/EO
2.2 Whether institute is using water filter with RO, Aqua Guard and/or large water filter with cooler at the strategic locations in the institute. If so, are they under AMC: **"yes", "no" and "not applicable"**	EO/DO
2.3 Whether institute has its own mechanism in repairing of water leakage: **"yes", "no" and "not applicable"**	**YES** UE
2.4 Is there any rainwater harvesting unit in institute: **"yes", "no" and "not applicable"** (if so, what are the uses of this water:) a) b) c) d)	UE
2.5 Whether institute has developed any reuse and recyclable of water system: **"yes", "no" and "not applicable"**	UE/EO Golden Jubilee
2.6 Is there any scope of measurement of water quality parameters used in hostel, lab, office, canteen, tap water (if so, parameters: pH, EC, TDS *etc.*)	UE/EO Env. Sci Administrative Composite Ladies/Boys Res Scholar, Eshn
2.7 Lab-wise water consumption (lt/d) Chemistry Zoology Botany Physiology Geography	Respective HoDs shall be asked to submit a report in this regard in consultation with the Engineering section.
2.8 Whether institute has sufficient/adequate drainage system: **"yes", "no" and "not applicable"**	

Contd in 30/08/2021.

30/09/2021 Thursday

Sub
Green Audit Committee Meeting at 12 noon in the office chamber of HOD, Zoology.

Members present-

Sr. No	Name	Signature
1	Dr Abhijit Mazumdar	30/09/2021.
2	Dr A R Ghosh	30/9/21 apurbaghosh2010@gmail.com
3	Dr Biplab Biswas	Biplab Biswas 30/9/21 bbiswas@geo.buruniv.ac.in
4	Dr P Chattopadhyay	
5	Dr Jai Prakash Keshri	Jai Prakash Keshri 30/9/21
6	Dr Sumit Hira	Sumit 30/9/21 Sumit.hira2008@gmail.com
7	Dr Srimanta Gupta	Srimanta Gupta 30/09/21 srimantagupta@ychoo.co.in
8	Dr Pradipta Saha	Pradipta Saha 30.09.21
9	Dr Asoke Ghosh	30/09/2021 asokcarex@gmail.com

email. keshrijp@gmail.com

Email of pradipta → psaha@microbio.buruniv.ac.in

UNIVERSITY FACILITIES & SIGNBOARDS

SAY 'NO' TO PLASTIC

THIS ROAD IS FOR PEDESTRAIANS ONLY

NO SMOKING ZONE

For General

1. Common rooms; Day Care Centre for Young Children; Rest Room

1. Restricted entry of Automobiles, Use of Bicycles/Battery powered vehicles; Pedestrian Friendly pathways; Ban on use of Plastics; Landscaping with trees and plants

2. Rainwater harvesting; Bore well/Open well recharge; Construction of tanks and bunds; Waste water recycling; Maintenance of water bodies and distribution system in the campus

3. Solid waste management; Liquid waste management; Biomedical waste management; Waste recycling system; Hazardous chemicals and Radioactive waste management

4. Solar energy; Biogas plant; Wheeling to the Grid; Sensor-based energy conservation; Use of LED bulbs/Power efficient equipment

5. Health Centre with facilities (Equipment/accessories)

6. Sports facilities

FOR DISABLED (*Divyangjan*)

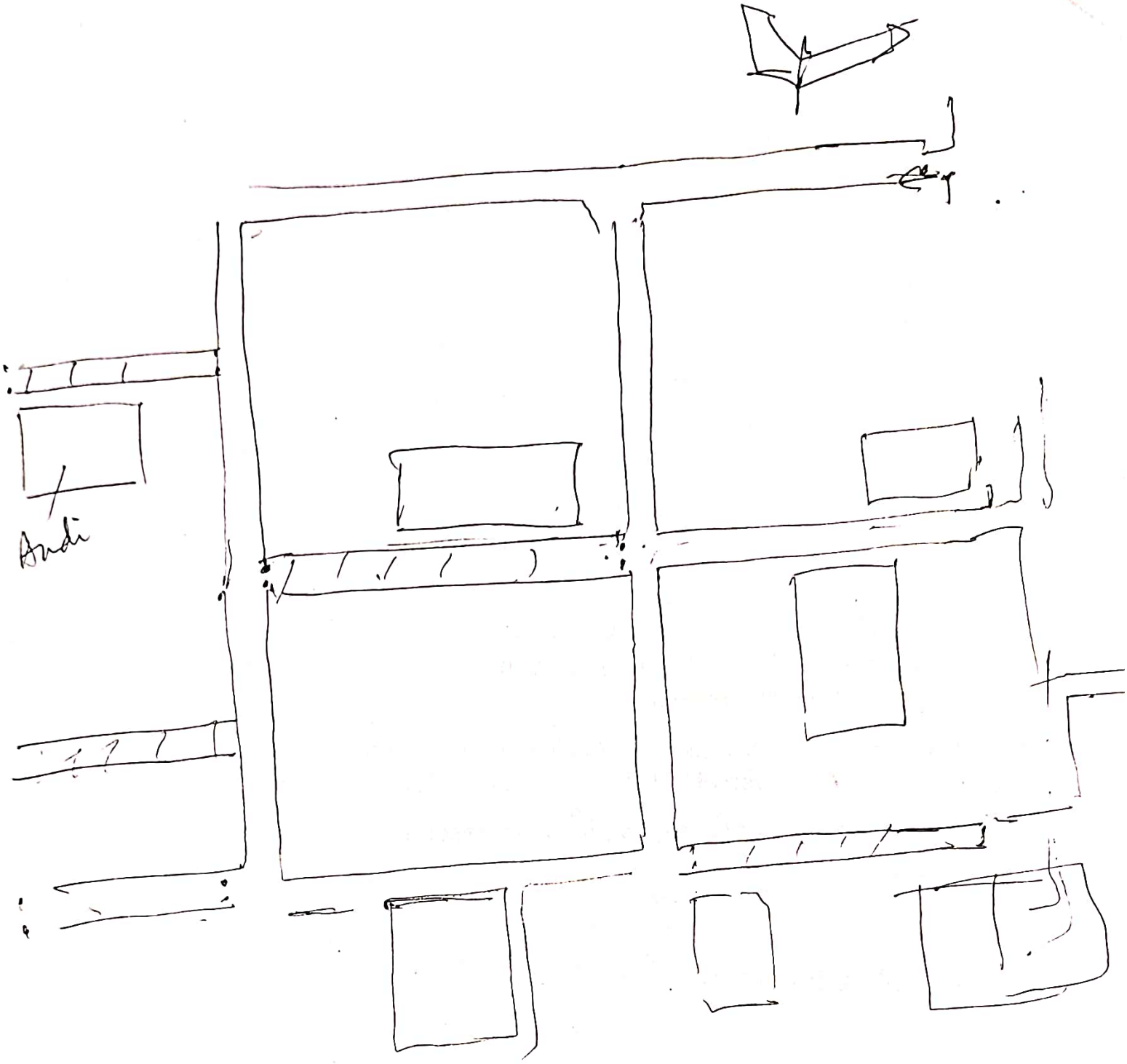
1. Ramps/Lifts

2. Disabled-friendly washrooms; Wheelchairs

1. Signage including tactile path, lights, display boards and signposts

2. Accessible website, screen-reading software, mechanised equipment

3. Human assistance, Reader, Scribe, Soft copies of reading materials, screen reading


Audi

Management of Biomedical and Chemical waste and monitoring of research work involving Biohazard issues is performed under the strict surveillance of the Institutional Biosafety Committee (IBSC, BU) chaired by Hon'ble Vice-Chancellor, The University of Burdwan. The committee consist of an external expert nominated by DBT, GOI along with other internal members.

Following guideline has been adopted for the waste management in the meeting of the IBSC, held on 02/04/2019 and is under practice.

Decontamination and Disposal

1. Segregation of different category of laboratory waste should be done at the point of laboratory waste generation. For details refer to "Bio-Medical Waste Management Rules, 2016", Ministry of Environment, Forest and Climate Change, Government of India.
2. Every Biological laboratory should keep two types of waste bin (i) Yellow Bin (ii) Red Bin with "Non-biodegradable recycle" label.
    a. Yellow Bin – This bin must be used for keeping the: (i) all types of biological waste after disinfection and sterilization and (ii) general categories of nontoxic chemicals waste as per "Bio-Medical Waste Management Rules, 2016"
    b. Red Bin – This bin must be used for keeping all types of non-degradable laboratory waste of plastic materials – like all types of culture dishes, disposable pipette, syringes and other recyclable materials after proper disinfection and decontamination. The segregation and disinfection of different type of laboratory waste must be done as per "Bio-Medical Waste Management Rules, 2016".
3. All the waste should be wrapped in non-chlorinated or autoclave safe /waste plastic bags of BIS standard and should be disposed regular basis to the designated waste bin of the building.
4. Every department /or building should designate area to keep three types of large waste Bin:
    a. Green Bin: For biological and other waste collected from the yellow bin of the different laboratories
    b. Red Bin: For plastic /recycled waste collected from the red bin of the different laboratories
    c. Blue Bin: For metallic and glass and other waste [Not for e- waste]
5. Any type of non-functional instruments or parts or junk materials should be disposed as per university junk disposal procedure. These items are strictly prohibited to dispose in any of these three bins.

DISPOSAL METHODS

1. ANIMAL CARCASSES AND BODY PARTS: incinerated or stored at -20 deep fridge and sent to a commercial rendering plant for disposal.
2. SOLID ANIMAL WASTE: All animal waste, including bedding, that is infectious or harmful to animals, humans, or the environment, should be appropriately treated prior to disposal, regardless of the origin of contamination. The following disposal methods are acceptable:
    a. Preferred Method: incineration followed by deposition of the residual ash in the Landfill.
    b. Thermal or chemical disinfection followed by deposition in the Landfill.

3. LIQUID WASTE Including bulk blood and blood products, cultures and stocks of etiologic agents, cell culture material and products of recombinant DNA technology should be disinfected by thermal or chemical treatment then discharged into the Sewer System.

Disposal of Hazards Chemical

1. The hazardous chemicals must be disposed to the specially designated shrink for hazardous chemical disposal as per availability of the respective departments.
2. Radioactive work: It is required to take necessary permission / necessary clearance for handling of Radioactive materials / isotope / materials suspected with radioactivity emission from the AERB. Such document needs to be submitted to IBSC for necessary purpose as per norms.

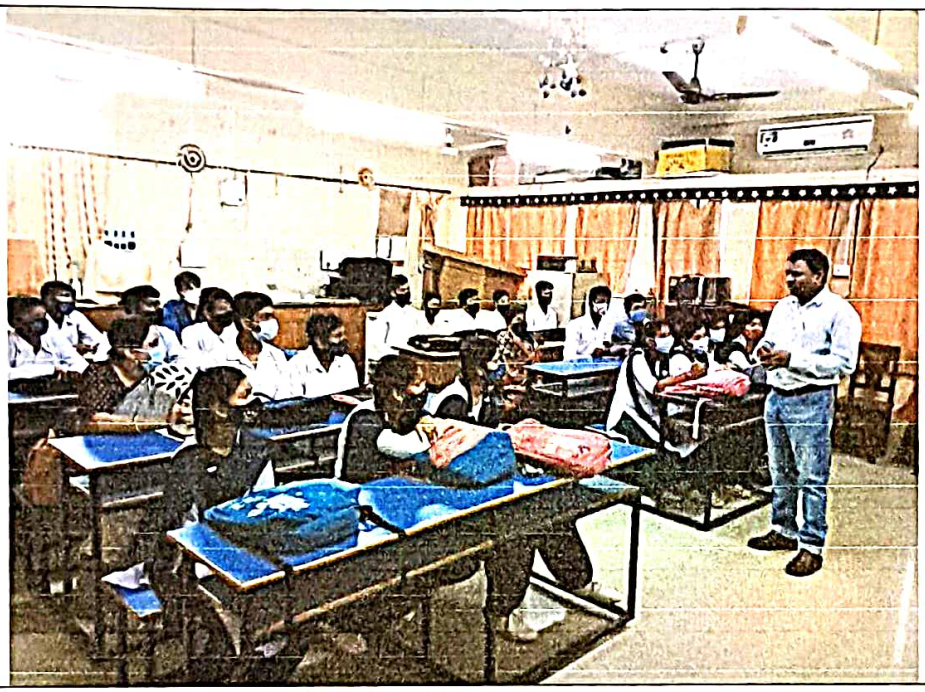
Annexure 1.14:

Workshop on Environmental awareness

Annexure: 1.14

Environmental awareness program:

Air pollution and its impact on human lung:

	
Demonstration by Prof. N. K. Mondal Topic: Impact of air pollution on human health Date: 04.02.2022; Total students: 22	

Annexure 1.15:

Environmental Studies Syllabus

THE UNIVERSITY OF BURDWAN

Annexure: 1.15

SYLLABUS for 3-Year Degree/4-Year Hons. in

ENVIRONMENTAL SCIENCE/EDUCATION
(Value Added Course)

Under

Curriculum and Credit Framework for

Undergraduate Program (CCFUP), as per N.E.P. 2020)

[w.e.f. 2023 – '24]

FINAL UG SYLLABUS FOR ENVIRONMENTAL SCIENCE [CODE: ENVSC]
UNDER THE UNIVERSITY OF BURDWAN, BURDWAN
[As per NEP 2020]
3-Year Degree/4-Year Hons. in Environmental Science

SEMESTER	Paper No	Code	Name of the Paper	Credits	L – T - P	Marks	Marks Dist. T – P - IA
I	Major/Core Course	ENVSC 1011	Environment & Ecology	4	3 – 1 - 0	75	60 – 00 - 15
	Minor Course [for other disciplines]	ENVSC 1021	Environment & Ecology	4	3 – 1 - 0	75	60 – 00 - 15
	Multi-disciplinary Course [from pool of courses]	ENVSC 1031	Natural resources & Sustainable Development	3	2 – 1 - 0	50	40 – 00 – 10
	Ability Enhancement Course (AEC)	AEC 1041	MIL (L_1- 1): (from Hindi /Bengali/ Sanskrit/ Santali /Arabic /Urdu) OR Eq. course from SWAYAM/other UGC recogn. platforms	2	2 – 0 - 0	50	40 – 00 - 10
	SEC [from Major]	ENVSC 1051	Environmental Monitoring Techniques	3	2 – 1 – 0	50	40 - 00 – 10
	Value Added Course (VAC)	CVA 1061	Environmental Science/ Education	4	3 – 0 - 1	100	60 – 20 - 20
	Total			20		400	

THE UNIVERSITY OF BURDWAN

5 - Year B.A. LL.B. (Hons.) Course

DETAILED SYLLABUS

(w.e.f. Academic Session 2020-2021 onwards)

5 yrs B.A. LL.B. (Hons) SYLLABUS (CBCS)

Credit Structure (Non Clinical papers)

L	P	T	TOTAL	ESC	IA	TOTAL
3	1	1	5	80	20	100

Credit Structure (Clinical papers)

Paper Code	L	P	T	ESE	IA/ Viva Voce/ Practical	Total
5.9.4	1	3	0	0	30+30+30+10	100
5.10.2	1	3	0	0	45+45+10	100
5.10.3	3	1	0	60	20+20	100
5.10.4	1	3	0	0	80+20	100

Question pattern

Non Clinical

i) 20 marks internal (to be decided and evaluated by the subject teacher)

ii) 80 marks external (hours: 3 hrs)

Q.1. Compulsory (2x5) 10 marks (5 questions of 2 marks each)
Q.2. 3 questions out of 4 (3x10) = 30 marks
Q.3. 2 questions out of 4 (2x20) = 40 marks

Clinical

Paper: 5.10.3

i) 20 marks internal (to be decided and evaluated by the subject teacher based on the report submitted)
20 marks viva voce

ii) 60 marks external (hours: 2.5hrs)
Q.1. Compulsory (2x5) 10 marks (5 questions of 2 marks each) (From Part A of the syllabus)
Q.2. 3 questions out of 4 (3x10) = 30 marks (From Part A of the syllabus)
Q.3. 1 questions out of 2 (1x20) = 20 marks (From Part B of the syllabus)

Papers 5.10.2, 5.10.4, 5.9.4 will be evaluated based on practical submissions and through viva voce.

LCC — Semester –I — 80+20
Compulsory Course

5.1.1 - English-I
5.1.2 - Political Science-I
5.1.3 - Sociology -I
5.1.4 - Economics -I
5.1.5 - Law of Torts including MV accident and CP Laws
5.1.6 - Contract-I (General Principles)

LCC — Semester –2 — 80+20
Compulsory Course

5.2.1 - English-II
5.2.2 - Political Science-II
5.2.3 - Sociology -II
5.2.4 - Economics -II
5.2.5 - Special Contract
5.2.6 - Environmental Law.

LCC — Semester – 3 — 80+20
Compulsory Course

5.3.1 - English-III
5.3.2 - Political Science-III

Annexure 1.16:

Community Service

Annexure: 1.16

Department of Environmental Science has organize health checkup of bus driver at Alisha bus stand, Burdwan with the help of specialize health professional. Few picture related to community services have been attached herewith.

Annexure 1.17a and b:

Awareness medicinal plants

Annexure: 1.17a and b

Department of Botany, B.U [session 2021-2022]

MSBO 307: - Workshop on awareness campaign on preservation of Biodiversity, Agro biodiversity, Medicinal plants etc.

(Social outreach/General awareness programme/project)

Programme name	Name of the course/ paper	Course Code	Name of students	Name of the Mentor/ Teacher	Title (s), place of work, duration relating to Outreach Program/Research Project (completion certificate) / Dissertation work (completion certificate) /Field survey (photographs & report)/Internship (completion certificate)/ Educational tour or visit (photographs & report) etc., as discussed	Permission letter from authority for Field survey/Internship /Educational visit or tour
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	307	Afiur RahamanChoudhury (BUR/ BOT/2020/001)	Prof. Jai Prakash Keshri	SOCIAL OUTREACH ON THERMAL ALGAE OF INDIA	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	Afrin Rahman (BUR/ BOT/2020/002)	Prof. Jai Prakash Keshri	ALGAL BLOOM	
M.Sc Botany	(Core course)	307	Anushka Ghosh (BUR/ BOT/2020/008)	Prof. Jai Prakash Keshri	ALGAL BIOFERTILIZER	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	Apurba Chandra (BUR/ BOT/2020/010)	Prof. Jai Prakash Keshri	CORTICOLOUS ALGAE	
M.Sc Botany	(Core course)	307	Arunima Haldar (BUR/ BOT/2020/01	Prof. Jai Prakash Keshri	BIO-DIESEL FROM ALGAE	

			3)			
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	Dibya Roy (BUR/ BOT/2020/020)	Prof. Jai Prakash Keshri	ALGAE IN MEDICINE	
M.Sc Botany	(Core course)	307	Jishan Mallick (BUR/ BOT/2020/024)	Prof. Jai Prakash Keshri	BIOREMEDIATION BY ALGAE	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	Kanika Malik (BUR/ BOT/2020/025)	Prof. Jai Prakash Keshri	TOXIC ALGAE	
M.Sc Botany	(Core course)	307	Mousumi Das (BUR/ BOT/2020/034)	Prof. Jai Prakash Keshri	ALGAE IN COSMETICS	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	Rita Saren (BUR/ BOT/2020/045)	Prof. Jai Prakash Keshri	ALGAE AS HEALTH FOOD	
M.Sc Botany	(Core course)	307	Sahil Ahmmed (BUR/ BOT/2020/084)	Prof. Jai Prakash Keshri	SOIL AND SUB-AERIAL ALGAE	

Programme name	Name of the course/ paper	Course Code	Name of students (With Roll Numbers)	Name of the Mentor/ Teacher	Title (s), place of work, duration relating to Outreach Program/Research Project (completion certificate) / Dissertation work (completion certificate) /Field survey (photographs & report)/Internship (completion certificate)/ Educational tour or visit (photographs & report) etc., as discussed	Permission letter from authority for Field survey/Internship /Educational visit or tour
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO-307	ANKITA SIKDER (BUR/BOT/2020/006)	Prof. RajibBandopadhyay	Social outreach programme on "A comprehensive study on fermented foods with special reference to cheese." (Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO-307	ARPITA KESH (BUR/BOT/2020/011)	Prof. RajibBandopadhyay	Social outreach programme on "Fundamentals and working principles of fermenter and Industrial and biological implementation" (Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach)	MSBO-307	PRAGATI KOLE (BUR/BOT/2020/038)	Prof. RajibBandopadhyay	Social outreach programme on "Bioinformatics: an overview" (Social outreach	

	(Core course)				project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO-307	SOUMYAJIT DAS (BUR/BOT/2020/055)	Prof. RajibBandopadhyay	Social outreach programme on "Applications of Microbes as Biofertilizer In Agricultural Purposes" (Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO-307	ANINDITA SAHA (BUR/BOT/2020/004)	Prof. RajibBandopadhyay	Social outreach programme on "Food Spoilage and Their Preservation Methods" (Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO-307	MONDIRA SARKAR (BUR/BOT/2020/033)	Prof. RajibBandopadhyay	Social outreach programme on "Biochemical tests for bacterial identification" (Social outreach project, six months)	

Program me name	Name of the course/ paper	Course Code	Name of students	Name of the Mentor/ Teacher	Title (s), place of work, duration relating to Outreach Program/Research Project (completion certificate) / Dissertation work (completion certificate) /Field survey (photographs & report)/Internship (completion certificate)/ Educational tour or visit (photographs & report) etc., as discussed	Permissio n letter from authority for Field survey/Int ernship /Education al visit or tour
M.Sc Botany	Dissertati on / Review (Including Social	307	KuntalinaMon dal Roll No.- BUR/BOT/202	Prof. SikhaDutta	Economic uses of fungi.	

	outreach) (Core course)		0/028			
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	ManabikaHaldar Roll no - BUR/BOT/2020/029	Prof. SikhaDutta	Economic uses of Lichen.	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	PritiJaiswal Roll No - BUR/BOT/2020/040	Prof. SikhaDutta	Applications of mycorrhiza as biofertilizers	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	RangitaHembrom Roll no- BUR/BOT/2020/042	Prof. SikhaDutta	Edible versus poisonous mushrooms.	
M.Sc Botany	(Core course)	307	Sampriti Bag Roll no- BUR/BOT/2020/049	Prof. SikhaDutta	Medicinal properties of mushrooms.	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	SilpiBiswas Roll No - BUR/BOT/2020/052	Prof. SikhaDutta	Diversity of Fungi and their distribution.	
M.Sc Botany	(Core course)	307	SoumyaGhosh Roll No- BUR/BOT/2020/054	Prof. SikhaDutta	Cultivation of edible mushrooms.	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	SubhamGhosh Roll No- BUR/BOT/2020/059	Prof. SikhaDutta	Mucormycosis- the causes, consequences and possible control measures.	
M.Sc Botany	(Core course)	307	Subhankarmitra	Prof. SikhaDutta	Usefulness Biofertilizers as alternative of Chemical fertilizers.	

			Roll - BUR/BOT/2020/060			
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	SuprityChatterjee Roll No- BUR/BOT/2020/062	Prof. SikhaDutta	Over applications of chemical fertilizers and pesticides in the agricultural fields and their adverse effects.	
M.Sc Botany	(Core course)	307	Pizushmondal Roll no - BUR/BOT/2020/082	Prof. SikhaDutta	Applications of yeasts as tool of genetic engineering.	

Programme name	Name of the course/ paper	Course Code	Name of students	Name of the Mentor/ Teacher	Title (s), place of work, duration relating to Outreach Program/Research Project (completion certificate) / Dissertation work (completion certificate) /Field survey (photographs & report)/Internship (completion certificate)/ Educational tour or visit (photographs & report) etc., as discussed	Permission letter from authority for Field survey/Internship /Educational visit or tour
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	307	BUR/BOT/2020/005	Dr. A. Ghosh Dr. S. Naskar	Role of Cryopreservation in conservation of Biodiversity.	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	BUR/BOT/2020/009	Dr. A. Ghosh Dr. S. Naskar	Habitat fragmentation and biodiversity.	
M.Sc Botany	(Core course)	307	BUR/BOT/20	Dr. A. Ghosh	Some poisonous plants of Singhee, Birbhum; their medicinal uses and	

			20/014	Dr. S. Naskar	management.	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	BUR/BOT/2020/016	Dr. A. Ghosh Dr. S. Naskar	Medicinal plants and its importance	
M.Sc Botany	(Core course)	307	BUR/BOT/2020/019	Dr. A. Ghosh Dr. S. Naskar	Agroforestry in India	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	BUR/BOT/2020/035	Dr. A. Ghosh Dr. S. Naskar	Use of some medicinal plants at my village Kaiti and their conservation method	
M.Sc Botany	(Core course)	307	BUR/BOT/2020/041	Dr. A. Ghosh Dr. S. Naskar	Conservation of medicinal plants	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	BUR/BOT/2020/044	Dr. A. Ghosh Dr. S. Naskar	Medicinal plants in our locality and their uses	
M.Sc Botany	(Core course)	307	BUR/BOT/2020/053	Dr. A. Ghosh Dr. S. Naskar	The impact of chemical fertilizers on Biodiversity	
M.Sc Botany	Dissertation / Review (Including Social outreach)	307	BUR/BOT/2020/058	Dr. A. Ghosh Dr. S. Naskar	Plants germplasm conservation	
M.Sc Botany	(Core course)	307	BUR/BOT/20	Dr. A. Ghosh	Introducing the hydroponics technology to the common people	

			20/064	Dr. S. Naskar	for biodiversity conservation.	

Programme name	Name of the course/ paper	Course Code	Name of students	Name of the Mentor/ Teacher	Title (s), place of work, duration relating to Outreach Program/Research Project (completion certificate) / Dissertation work (completion certificate) /Field survey (photographs & report)/Internship (completion certificate)/ Educational tour or visit (photographs & report) etc., as discussed	Permission letter from authority for Field survey/Internship /Educational visit or tour
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO307	Piyali Pal	Prof. T.K. Maiti	Microarray Technology and its Applications	
M.Sc Botany	Dissertation / Review (Including Social outreach)	MSBO307	Chaitali Mondal	Prof. T.K. Maiti	Microbes as Biofertilizer	
M.Sc Botany	(Core course)	MSBO307	Shrabni Rajak	Prof. T.K. Maiti	Microorganisms used in Food production	
M.Sc Botany	Dissertation / Review (Including Social outreach)	MSBO307	Prima Bagui	Prof. T.K. Maiti	Diversity of Actinobacteria and its importance	
M.Sc Botany	(Core course)	MSBO307	Shampa khatun	Prof. T.K. Maiti	The predator bacterial genus Bdellovibrio and	

					its application in various field	
M.Sc Botany	Dissertation / Review (Including Social outreach)	MSBO307	Koyel Mahapatra	Prof. T.K. Maiti	Antibiotic uses and Misuses	

Program me name	Name of the course/ paper	Course Code	Name of students	Name of the Mentor/ Teacher	Title (s), place of work, duration relating to Outreach Program/Research Project (completion certificate) / Dissertation work (completion certificate) /Field survey (photographs & report)/Internship (completion certificate)/ Educational tour or visit (photographs &report) etc., as discussed	Permission letter from authority for Field survey/Internship /Educational visit or tour
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO 307	Ananya Dey (BUR BOT 2020/003)	Prof. Abhijit Bandyopadhyay and Dr. Sujit Roy	Social outreach programme on "Impact of climate change and sustainable agriculture practices" (Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO 307	Arundhati Jash (BUR BOT 2020/012)	Prof. Abhijit Bandyopadhyay and Dr. Sujit Roy	Social outreach programme on "Practical implications and future aspects of sustainable agriculture under changing climate" (Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO 307	Manali Bhattacharya (BUR BOT 2020/030)	Prof. Abhijit Bandyopadhyay and Dr. Sujit Roy	Social outreach programme on "Millets as an alternative food crop (Agronomic importance of millets)" (Social outreach project, six months)	

M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO 307	Mihir Konai(BUR BOT 2020/031)	Prof. Abhijit Bandyopadhyay and Dr. Sujit Roy	Social outreach programme on "Millets as an alternative food crop (Nutritional importance of millets)"(Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO 307	Poulami Mal (BUR BOT 2020/037)	Prof. Abhijit Bandyopadhyay and Dr. Sujit Roy	Social outreach programme on "Health benefits of growing common medicinal plants at home (Medical aspect)"(Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO 307	Rimpa Paul (BUR BOT 2020/043)	Prof. Abhijit Bandyopadhyay and Dr. Sujit Roy	Social outreach programme on "Health benefits of growing common medicinal plants at home (Environmental aspect)"(Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO 307	Sayan Deep Bera (BUR BOT 2020/050)	Prof. Abhijit Bandyopadhyay and Dr. Sujit Roy	Social outreach programme on "Scientific basis of home remedies"(Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO 307	Sourav Das (BUR BOT 2020/ 056)	Prof. Abhijit Bandyopadhyay and Dr. Sujit Roy	Social outreach programme on "Scientific basis of home remedies" (Social outreach project, six months)	
M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO 307	Srijani Mandal (BUR BOT 2020/057)	Prof. Abhijit Bandyopadhyay and Dr. Sujit Roy	Social outreach programme on "Health benefits of Indian spices"(Social outreach project, six months)	

M.Sc Botany	Dissertation / Review (Including Social outreach) (Core course)	MSBO 307	TanisaBarui (BUR BOT 2020/085)	Prof. Abhijit Bandyopadhyay and Dr. Sujit Roy	Social outreach programme on "Health benefits of Indian spices" (Social outreach project, six months)	

CORE COURSE MSBO 307: Workshop on awareness campaign on preservation of Biodiversity, agrobiodiversity, medicinal plants etc.

2021-22 Batch(BOTANY; DE: TAXONOMY OF ANGIOSPERMS AND BIOSYSTEMATICS (Guided by Dr. Asok Ghosh & Dr. Saikat Naskar)

1. "Importance of Tulsi As a Medicinal Plant and Its Preservation"
   submitted by.....Roll No:- BUR/BOT/2021/033, Reg. No:- 201601000349 of 2016-17.

2. "Agrobiodiversity in India and it's significance in light of climate change, sustainable agriculture and poverty"
   submitted by..... Roll No:- BUR/BOT/2021/029, Reg.No:- 201801049643 of 2018-19.

3. "Impact of climate change on Biodiversity"
   submitted by.....Roll no:-BUR/BOT/2021/035, Reg. no:- 202103000520 of 2021-22.

4. "Workshop on awareness campaign on preservation of medicinal plant's diversity"
   submitted by.....Roll no:- BUR/BOT/2021/041, Reg. no:- 201801022766 of 2018-19.

5. "PRESERVATION OF MEDICINAL PLANTS DIVERSITY"
   submitted by.....Roll No:- BUR/BOT/2021/047, Reg.No:- 201801053318 of 2018-19.

6. "AGROBIODIVERSITY FOR FOOD SECURITY"
   Submitted by.....Roll no:- BUR/BOT/2021/054, Reg. no:- 201801043279 of 2018-19.

7. "Workshop on awareness campaign on BIODIVERSITY"
   submitted by.....Roll no:- BUR/BOT/2021/051, Reg.no:- 201801009246 of 2018-19.

Annexure 1.18.1:

Plantation Program

Plantation program

Annexure 1.18.1

Plantation program is a regular event in our University. Almost all Departmental program was initiated with the plantation. Few photographs are attached herewith:

লাট্টুচোখা খেয়ে সম্প্রী

বিয়ের প্রতিশ্রুতি দিয়ে সহবাস, যুবক গ্রেপ্তার

বর্ধমান বিশ্ববিদ্যালয়ের সমাবর্তনে গাছ দিয়ে আপ্যায়নের আজি গাছ প্রেমের।

বর্ধমান বিশ্ববিদ্যালয়ে বৃক্ষরোপণ ও কৃতী ছাত্রছাত্রীদের বই প্রদান

Annexure 1.18.1.1:

Plantation program

Annexure: 1.18.1.1

Tree Plantation Drive, 2022

Date: 20th June 2022
Time: 12 P.M. onwards
Venue: University Campus

Organizing Unit: NSS (National Service Scheme)

Brief Report: The Tree Plantation Drive on 20th June 2022, organized by the NSS (National Service Scheme) unit, marked a significant effort towards environmental conservation and sustainability. The event witnessed the participation of 56 students, along with the esteemed presence of the Hon'ble Vice Chancellor, Hon'ble Pro Vice Chancellor, Registrar, and several other dignitaries. The drive commenced at around 12 P.M. with the NSS volunteers and university officials gathering at the designated areas across the campus. Led by the dignitaries, the 56 volunteers embarked on a mission to enhance the green cover of the campus through tree plantation.

Upon reaching Bara Bazar, the NSS volunteers organized a street drama focusing on the theme of creating a Plastic-Free Society. Through creative storytelling and engaging performances, the volunteers conveyed the importance of reducing plastic usage and adopting sustainable alternatives. The street drama garnered significant attention from both locals and passersby, effectively conveying the message of environmental stewardship. Spectators were encouraged to reflect on their own consumption habits and pledge to take action towards building a more sustainable future. The World Environment Day celebration, spearheaded by the NSS unit, served as a reminder of the collective responsibility to protect and preserve our environment for future generations. Through innovative activities such as rallies and street dramas, the event successfully engaged the community in meaningful dialogue and action towards creating a more eco-conscious society.

In conclusion, the World Environment Day celebration organized by the NSS unit was a testament to the university's commitment to environmental sustainability. By mobilizing students and engaging the local community, the event contributed to raising awareness and fostering a sense of environmental responsibility among participants.

Annexure 1.18.4.1:

Project sponsored by national funding agency related to environmental issues

Annexure: 1.18.4.1

Year 1 Note : Repeat for 5 years or add one first column for year a

Name of the Scheme/Project/ Endowments/ Chairs	Name of the Principal Investigator/ Co Investigator (if applicable)	Name of the Funding agency	Type (Government/Non-Government)	Department	Year of Award	Funds provided (INR in lakhs)
Interference of vehicle noise in teaching-learning process and development of strategies for abatement of classroom noise	Prof. Naba Kumar Mondal	Indian Council of Social Science Research (ICSSR)	Government	Environmental Science	2021	Rs. 9,00,000/-
Vulnerability of tribal women affected from dual effects of biomass and tobacco smoke: A biomarker based cross-sectional study	Prof. Naba Kumar Mondal	Science & Engineering Research Board (SERB) (A statutory body of the Department of Science & Technology, Government of India)	Government	Environmental Science	2023	Rs. 30,26,120/-
Development of nano-weapons from waste plastics and its efficacy against mosquito vector	Prof. Naba Kumar Mondal	Science & Engineering Research Board (SERB) (A statutory body of the Department of Science & Technology, Government of India)	Government	Environmental Science		Rs. 35,44,332/-
Bioremediation of polycyclic aromatic hydrocarbons (PAHs)-contamination at Digha Coastal Water (West Bengal	Prof. ApurbaRatan Ghosh	GoWB DST & Biotechnology	Government	Department of Environmental Science	2023	916300/-
Evaluation of available trace elements and methane emission from OCP at RaniganjAsansol Coal field areas, PaschimBardhaman	Prof. ApurbaRatan Ghosh	UGC-DAE-CSR, Kolkata Centre	Government	Department of Environmental Science	2022	1080800/-
Qualitative estimation of subsurface water flow and identification of contaminant mobilization in mining areas using nanomaterials as tracers	SumantaNayak& Co-PI- Professor Srimanta Gupta	DST (GoI)	Government	Department of Environmental Science	2021	7,15,975/-
Environmental geochemistry and water water quality modeling of sahib Bandh lake, Purulia, West Bengal: An approach towards lake restoration	Professor Srimanta Gupta & Co-PI- Professor R. N. Saha(NIT Durgapur)	DHESTB (Govt. of WB)	Government	Department of Environmental Science	2018	5,98,500/-
R&D project entitled-safe disposal of fluoride rich sludge through encapsulation in cement stabilized blocks using the low cost geomaterials.	Dr A. K. Batbayal (CSIR-Central Mechanical Engineering Research Instituted) & Co-PI- Professor Srimanta Gupta	DHESTB (Govt. of WB)	Government	Department of Environmental Science	2018	19,43,600/-
Spatial distribution of uranium in three district (south 24 Parganas, PurbaMedinipur, and Paschim Medinipur) of West Bengal	Professor Srimanta Gupta & Co-PI- Professor R. N. Saha(NIT Durgapur)	BRNS-DAE	Government	Department of Environmental Science	2018	27,51,800/-
Modelling of greenhouse gas emissions from paddy fields through conventional, system of rice intensification and zero tillage practices in Burdwan district, West Bengal, India	Dr. SudiptoMandal	DST-SERB	Government	Department of Environmental Science	2017	38.1 lakhs
Structurally dynamic model of greenhouse gas emission and carbon sequestration in Sundarban mangrove ecosystem, India	Dr. SudiptoMandal	DST-SERB	Government	Department of Environmental Science	2019	37.6 lakhs

Annexure 1.18.6:

World Environment Day Celebration

Annexure: 1.18.6

World Environment Day Celebration, 2022

Date: 20th June 2022
Time: 8 A.M. to 10 A.M.
Venue: University Campus to Bara Bazar

Organizing Unit: NSS (National Service Scheme)
Collaborating Agency: None

Action Photos:




Brief Report: The World Environment Day celebration on 20th June 2022 was organized by the NSS (National Service Scheme) unit I, II, & III, in alignment with the global theme to raise awareness and take action on pressing environmental issues. The event saw active participation from 95 students, demonstrating their commitment to environmental conservation. The celebration commenced at 8:30 A.M. with a rally organized by the NSS unit, starting from the University campus and culminating at Bara Bazar, a bustling market area. The rally aimed to engage the local community and spread awareness about environmental conservation measures.

Celebration of 5th June, Ozone Day etc.

Annexure 1.18.6

Annexure 1.18.7:

Field visits and surveys

Annexure: 1.18.7

1.18.7 Number of field visit/Survey: Yes
1.18.7)

Students of Environmental Science are engaged with field visit, survey etc in regular interval. Few photographs are attached herewith related indoor air pollution in village areas and field visit to Bakreshwar Hot Spring.

Field visit:

Annexure 1.18.8:

Campus biodiversity register

Annexure: 1.18.8

Campus Biodiversity Register and Mapping of the Golapbag Campus:
FLORA (tree species included only):

The University is unique in its biodiversity since its inception in 1960s. The floristic diversity and its composition of the campus are reflected in different previous publications. Namhata and Mukherjee (1990) enumerated ca 300 species under ca 88 families of angiosperms. Subsequently, Ganguly *et al.* (2018) have reported ca 120 tree species from this region and some of the species are even absent in the revised list of the tree species. Several tree species like *Aleurites moluccanus* (L.) Willd, a tree member of Euphorbiaceae, *Erioglossum edule* Blume, *Naringi crenulata* (Roxb.) D.H. Nicolson, *Prosopis juliflora* (Sw.) DC, *Citharexylum subserratum* Sw., *Berrya cordifolia* (Willd.) Burret, *Brownea coccinea* Jacq., *Cassia fistula* Linn., *Corypha utan* Lam. (near relative of century palm, *Corypha taliera* Roxb.) were not recorded previously from the university campus and probably due to later plantation or invaders or were not diagnosed properly. But, in our very recent investigation (unpublished data and work in progress) we observed several individuals of some of the above mentioned species in naturalized condition which is the direct indication of changing floristic composition of the naturalized species. One of the most slow growing species, *Jacquinia ruscifolia* Jacq. of Primulaceae (previously in Theophrastaceae, named after Father of Botany-Theophrastus) represented by only two individuals along with glory of Burma, *Amherstia nobilis* Wall., which is represented by only one individual tree are under the very close observation of the experts, though they are not producing viable offspring due to unknown reason. Very recent survey revealed that in the campus, there are more than 1150 tree individuals representing more than 120 tree species of which some of the species are economically very important. In addition the campus harbours more than 350 herbs and under shrubs. Thus, it can be stated that Golapbag Campus of The University of Burdwan has very rich plant diversity including tree diversity and maintaining its plant diversity well without hampering other components of the institution. Table (Table 1) represents plant species (tree) which are present at Golapbag Campus, The University of Burdwan, which is partially reflected in the Figure 1 in the form of geo-tagging. Both the evaluation of the plant species and geo-tagging of the tree species are in progress.

Table 1. Details of the tree species with their numbers of individuals and systematic position (Family only; family names are arranged alphabetically).

Family	Name of the species	No. of Individuals	Sl. No.
Alangiaceae	*Alangium salviifolium* (L.f.) Wangerin syn. *Alangium lamarckii* Thwaites	1	1.
Anacardiaceae	*Mangifera indica* L.	21	2.
Anacardiaceae	*Spondias dulcis* L. syn. *Spondias cytherea*	2	3.

Anacardiaceae	***Spondias pinnata* (L. f.) Kurz**	**2**	**4.**
Annonaceae	*Polyalthia suberosa* (Roxburgh) Thwaites	1	5.
Annonaceae	***Polyalthia longifolia* (Sonn.) Thwaites**	**387**	**6.**
Annonaceae/ Phyllanthaceae	*Uvaria* **Sp. /** *Bridelia retusa*	**1**	**7.**
Apocynaceae	*Alstonia scholaris* (L.) **R. Br.**	1	8.
Apocynaceae on Ebanaceae/ Clusiaceae	*Amphineurion marginatum* (Roxb.) D.J.Middleton **syn. *Aganosma marginata* (Roxb.) G.Don on** *Diospyros* **sp. /*Garcinia* sp.**	********** *******	**9.**
Apocynaceae	*Holarrhena pubescens* **Wall. ex G.Don syn. *Holarrhena antidysenterica* (Roth) Wall. ex A.DC.**	6	10.
Apocynaceae	***Plumeria obtusa* L.**	**3**	**11.**
Apocynaceae	*Wrightia arborea* (Dennst.) **Mabb. Syn.** *Wrightia tomentosa* Roem. & Schult.	2	12.
Apocynaceae	***Wrightia coccinea* (Roxb. ex Hornem.) Sims/ *Wrightia tomentosa* Roem. & Schult. *Syn. Wrightia arborea* (Dennst.) Mabb.**	**1**	**13.**
Areceae	*Areca catechu* **L.**	**3**	**14.**
Arecaceae	***Borassus flabellifer* L.**	**2**	**15.**
Arecaceae	*Corypha utan* **Lam. Syn.** *Corypha elata* **Roxb.**	**4**	**16.**
Arecaceae/ **Palmae**	***Livistona chinensis* (Jacq.) R.Br. ex Mart.**	**Dead now**	**17.**
Arecaceae	*Phoenix rupicola* **T.Anderson**	**1**	**18.**
Arecaceae/ Palmae	***Roystonea regia* (Kunth) O.F.Cook**	**15**	**19.**
Bignoniaceae	*Dolichandrone stipulata* (Wall.) Benth. et Hook. f.	**32**	**20.**
Bignoniaceae	***Heterophragma* sp./ *H. adenophyllum***	1	21.
Bignoniaceae	***Parmentiera cereifera* Seem.**	1	22.
Bignoniaceae	*Roseodendron donnell-smithii* **(Rose) Miranda syn. *Tabebuia donnell-smithii* Rose Or *Tabebuia aurea* (Manso) Benth. & Hook. fil. ex S. Moore**	1	23.
Bignoniaceae	*Stereospermum* **sp.**	1	24.
Bignoniaceae	***Tabebuia heterophylla* (DC.) Britt. Syn. *Tabebuia pentaphylla* Hemsl.**	1	25.
Bixaceae	*Bixa orellana* L.	1	26.
Boraginaceae	***Cordia myxa* L. Syn.**	**3**	**27.**

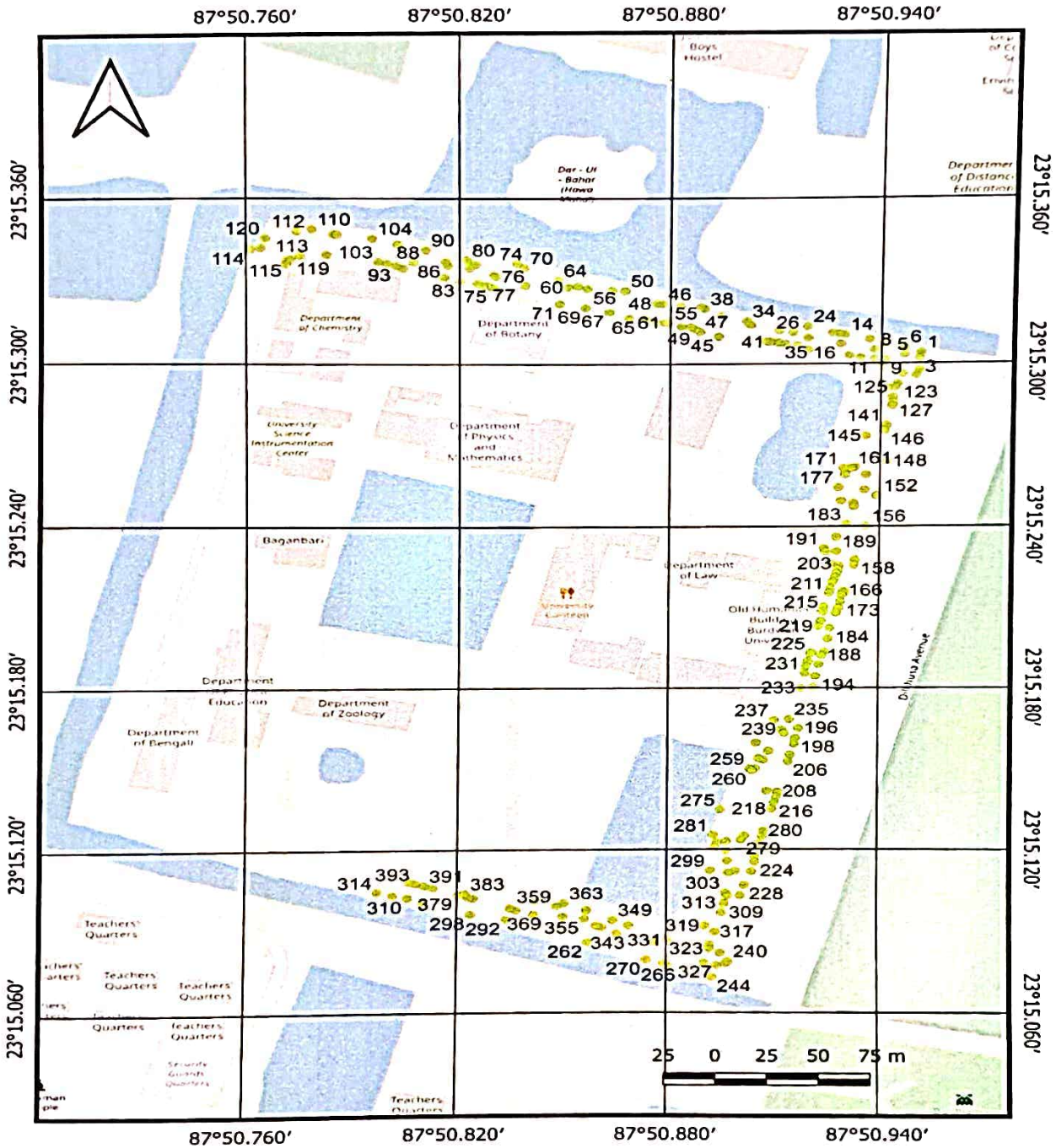
	***Ehretia glabra* Roth ex Roem. & Schult.**		
Boraginaceae	*Ehretia laevis* **Roxb.**	1	28.
Caesalpinioideae/ **Leguminosae**	*Amherstia nobilis* **Wall.**	1	29.
Caesalpinioideae/ Leguminosae	***Brownea coccinea* Jacq.**	1	30.
Caesalpinioideae/ Leguminosae	*Peltophorum pterocarpum* (DC.) K.Heyne	3	31.
Caesalpinioideae/ **Leguminosae**	***Senna multijuga* (Rich.) H.S.Irwin & Barneby syn. *Cassia multijuga* Rich.**	1	32.
Caesalpinioideae/ Leguminosae	*Senna siamea* **(Lam.) Irwin et Barneby syn. *Cassia siamea***	**21**	**33.**
Caesalpinioideae/ Leguminosae	***Senna spectabilis* (DC.) H.S.Irwin & Barneby syn. *Cassia spectabilis* DC./ Chamaecrista paniculata (Benth.) H.S.Irwin & Barneby *Syn.* Cassia paniculata Benth.**	**1**	**34.**
Calophyllaceae	*Mesua ferrea* L.	**1**	**35.**
Cannabaceae	*Trema orientalis* (L.) **Blume**	**1**	**36.**
Casuarinaceae and Moraceae	***Casuarina equisetifolia* L. + *Ficus benghalensis***	**3**	**37.**
Clusiaceae	*Garcinia* sp.	2	38.
Combretaceae	***Terminalia bellirica* (Gaertn.) Roxb. Syn. *Terminalia belirica* (Gaertn.) Wall.**	1	39.
Palmae	**DEAD a member of Arecaceae May be** *Livistonea* sp.	********** ******	40.
Ebenaceae	***Diospyros montana* Roxb./ *Diospyros chloroxylon* Roxb. Syn. *Diospyros tomentosa* Poir.**	***4***	***41.***
Ebenaceae	Dead *Diospyros* **sp.**	********** ********	**42.**
Ebenaceae	***Diospyros discolor* Willd. *male plant***	**1**	**43.**
Euphorbiaceae	***Aleurites sp./ Aleurites moluccanus* (L.) Willd.**	1	44.
Euphorbiaceae	***Mallotus nudiflorus* (L.) Kulju & Welzen Syn. *Trewia nudiflora* L. *Mallotus* sp.**	1	45.
Euphorbiaceae	*Putranjiva roxburghii* **Wall.**	**42**	**46.**
Euphorbiaceae	***Suregada multiflora* (A.Juss.) Baill.** Syn. **Gelonium**	2	47.

	multiflorum A. Juss. Suregada multiflora (A.Juss.) Baill. Male plant		
Fabaceae/Leguminosae	*Pterocarpus marsupium* Roxb. *Syn.* Pterocarpus marsupium subsp. acuminatus (Prain) Thoth.	1	48.
Lauraceae	*Litsea glutinosa* (Lour.) C. B. Rob.	8	49.
Lecythidaceae	*Barringtonia acutangula* (L.) Gaertn.	4	50.
Lecythidaceae	*Couroupita guianensis* Aubl.	1	51.
Leguminosae	*Acacia auriculiformis* Benth. Syn. *Racosperma auriculiforme* (Benth.) Pedley	7	52.
Leguminosae	*Butea monosperma* (Lam.) Taub.	1	53.
Leguminosae/ Fabaceae	*Cassia fistula* L.	11	54.
Leguminosae	*Dalbergia lanceolaria* L.f.	12	55.
Leguminosae	*Gliricidia maculata* (Humb., Bonpl. & Kunth) Steud. / *Gliricidia sepium* (Jacq.) Walp.	1	56.
Leguminosae	*Pongamia pinnata* (L.) Pierre	7	57.
Leguminosae	*Prosopis juliflora* (Sw.) DC.	16	58.
Leguminosae	*Saraca asoca* (Roxb.) Willd.	99	59.
Leguminosae	*Tamarindus indica* L.	1	60.
Lythraceae	*Lagerstroemia speciosa* (L.) Pers.	60	61.
Magnoliaceae	*Magnolia hodgsonii* (Hook.f. & Thomson) H.Keng syn. *Talauma hodgsonii* Hook.f. & Thomson	1	62.
Magnoliaceae	*Michelia champaca* L. syn. *Magnolia champaca* (L.) Baill. ex Pierre	1	63.
Malvaceae/ Tiliaceae	*Berrya cordifolia* (Willd.) Burret Syn. *Berrya ammonilla* Roxb.	1	64.
Malvaceae	*Grewia asiatica* L.	6	65.
Malvaceae/ Sterculiaceae	*Sterculia foetida* L.	2	66.
Melastomaceae	*Memecylon umbellatum* Brum. f.	1	67.
Meliaceae	*Aphanamixis polystachya* (Wall.) R.Parker	1	68.

Meliaceae	*Melia azedarach* L.	2	69.
Meliaceae	*Swietenia macrophylla* King.	2	70.
Meliaceae	*Swietenia mahagoni* (L.) Jacq.	79	71.
Mimosoideae/ Leguminosae	*Albizia lebbeck* (L.) Benth.	8	72.
Mimosoideae/ Leguminosae	*Albizia saman* (Jacq.) Merr. Syn. *Samanea saman* (Jacq.) Merr.	14	73.
Moraceae	*Artocarpus heterophyllus* Lam.	5	74.
Moraceae	*Artocarpus lacucha* Buchanan-Hamilton *ex* D. Don *Syn. Artocarpus lakoocha* Roxb.	3	75.
Moraceae	*Ficus benghalensis* L.	17	76.
Moraceae, Sapotaceae, Euphorbiaceae, Lauraceae, Euphorbiaceae	*Ficus benghalensis, Mimusops elengi, Gelonium Sp.,* and *Litsea Glutinosa, Putranjiva roxverjii* Wall.	********	77.
Moraceae	*Ficus racemosa* L. syn. *Ficus glomerata* Roxb.	5	78.
Moraceae	*Ficus religiosa/ F. benghalensis*	**********	79.
Moraceae	*Ficus* sp.	1	80.
Moraceae	*Streblus asper* Lour.	12	81.
Myrtaceae	*Eucalyptus globusus* Labill.	1	82.
Myrtaceae	*Syzygium aqueum* (Burm.f.) Alston	3	83.
Myrtaceae	*Syzygium cumini* (L.) Skeels.	2	84.
Myrtaceae	*Syzygium jambos* (L.) Alston	1	85.
Ochnaceae	*Ochna squarrosa* L./ *Ochna jabotapitta* Vell./ *Ochna jabotapita* L.	1	86.
Oxalidaceae	*Averrhoa carambola* L. Syn. *Averrhoa acutangula* Stokes	1	87.
Palmae	*Borassus flabellifer* L.	4	88.
Papilionoideae/ Leguminosae	Erythrina variegata L. syn. *Erythrina indica* Lam.	2	89.
Phyllanthaceae	*Bridelia retusa* (L.)A.Juss.	1	90.
Rhamnaceae	*Ziziphus jujuba* Mill. Syn. *Ziziphus mauritiana* Lam.	1	91.

Rhizophoraceae	*Carallia brachiata* (Lour.) Merr.	1	92.
Rubiaceae	***Ixora pavetta* Andr. Syn. *Ixora arborea* Roxb. ex Sm.**	**2**	**93.**
Rubiaceae	*Mitragyna parvifolia* (Roxb.) Korth.	1	94.
Rubiaceae	***Morinda tomentosa* B.Heyne ex Roth**	1	95.
Rubiaceae	***Neolamarckia cadamba* (Roxb.) Bosser**	2	96.
Rutaceae	*Aegle mermelos* (L.) Correa	10	97.
Rutaceae	***Citrus maxima* (Burm. f.) Osbeck**	1	98.
Rutaceae	***Murraya paniculata* (L.) Jacq. Syn. *Murayya exotica* L.**	**4**	**99.**
Sapindaceae	***Erioglossum edule* Blume syn. *Sapindus edulis* Aiton**	1	100.
Sapindaceae	*Filicium decipiens* (Wight & Arn.) Thwaites	1	101.
Sapindaceae	*Litchi chinensis* Sonn.	**2**	**102.**
Sapindaceae	*Schleichera oleosa* (Lour.)Merr.	1	103.
Sapotaceae	*Mimusops elengi* L.	**23**	**104.**
Sapotaceae	***Manilkara zapota* (L.) P.Royen syn. *Manilkara achras* (Mill.) Fosberg syn. *Sapota achras* Mill.**	**1**	**105.**
Sapotaceae	***Malinkara hexandra* (Roxb.) Dubard**	**1**	**106.**
Sapotaceae	***Madhuca longifolia* var. *latifolia* (Roxb.)A.Chev. Syn. *Madhuca indica* J.F.Gmel**	1	107.
Simaroubaceae	*Ailanthus excelsa* Roxb.	**1**	**108.**
Sterculiaceae/ Malvaceae	*Kleinhovia hospita* **L. *Syn. Cattimarus hospitus* (L.) Kuntze**	2	109.
Sterculiaceae	*Pterospermum acerifolium*(L.)Willd.	7	**110.**
Sterculiaceae, Moraceae, Lauraceae and Sapotaceae	*Pterospermum acerifolium*(L.)Willd., *Ficus bebghalensis* , *Litsea glutinosa* and *Mimusops elengi*	********** *	**111.**
Sterculiaceae, Moraceae and Sapotaceae	*Pterospermum acerifolium* (L.)Willd., *Ficus bebghalensis* and *Mimusops elengi*	**********	**112.**
Sterculiaceae	*Pterospermum* sp.	1	113.
Sterculiaceae	***Pterospermum xylocarpum* (Gaertn.) Oken syn. *Pterospermum xylocarpum* (Gaertn.) Santapau & Wagh**	**1**	**114.**
Sterculiaceae/ Malvaceae	***Pterygota alata* (Roxb.) R.Br. Syn. *Sterculia alata* Roxb.**	**2**	**115.**

Sterculiaceae/ **Malvaceae**	*Sterculia foetida* **L.**	4	116.
Symplocaceae **Elaeocarpaceae**	***Symplocos racemosa* Roxb./** ***Elaeocarpus floribundus* Blume**	**1**	**117.**
Ulmaceae/ **Cannabaceae**	BROKEN and log With *Trema orientalis* **(L.) Bl.**	********** *****	118.
Ulmaceae	***Holoptelea integrifolia* Planch. Syn. *Ulmus integrifolia* Roxb.**	**4**	**119.**
Ulmaceae/ Cannabaceae	*Trema orientalis* (L.) Bl.	**3**	**120.**
Verbanaceae	***Citharexylum spinosum* L. Syn. *Citharexylum subserratum* Sw.**	1	121.
Verbenaceae	***Tectona grandis* L.f.**	**5**	**122.**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Annexure: 1.18.8

FAUNA OF BURDWAN UNIVERSITY CAMPUS

Insecta: Lepidoptera

Sl. No.	Common name	Scientific Name	IUCN Red List category & Criteria (ver 3.1)
1.	Apefly	*Spalgis epius*	Not evaluated
2.	Blue Tiger	*Tirumala limniace*	Not Evaluated
3.	Chocolate Pansy	*Junonia iphita*	Least Concern
4.	Common Baron	*Euthalia aconthea*	Not Evaluated
5.	Castor	*Ricinus communis*	Not Evaluated
6.	Common crow	*Euploea core*	Least Concern
7.	Emigrants	*Catopsilia pomona*	Not Evaluated
8.	Evening brown	*Melanitis leda*	Not Evaluated
9.	Fire ring	*Ypthima huebneri*	Not Evaluated
10.	Grass yellow	*Eurema hecabe*	Least Concern
11.	Gull butterfly	*Cepora nadina nadina*	Not Evaluated
12.	Jezebel	*Delias eucharis*	Not Evaluated
13.	Leopard	*Phalanta phalantha phalantha*	Not Evaluated
14.	Mormon	*Papilio polytes*	Not Evaluated
15.	Palmfly	*Elymnias hypermnestra*	Not Evaluated
16.	Pierrot	*Talicada nyseus*	Not Evaluated
17.	Quaker	*Pithecops fulgens*	Not Evaluated
18.	Sailor	*Neptis hylas*	Not Evaluated
19.	Sun beam	*Curetis acuta*	Not Evaluated
20.	Tit	*Hypolycaena erylus*	Not Evaluated
21.	Wanderer male	*Danaus plexippus*	Not Evaluated
22.	Danid egg fly	*Hypolimnas misippus*	Least Concern

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23.	Great Egg fly	*Hypolimnas bolina*	Not Evaluated
24.	Grey Pansy	*Junonia atlites*	Not Evaluated
25.	Indian Skipper	*Spialia galba*	Not Evaluated
26.	Lemon Emigrant	*Catopsilia pomona pomona*	Not Evaluated
27.	Lemon pansy	*Junonia lemonias*	Not Evaluated
28.	Lime Blue	*Chilades lajus lajus*	Not Evaluated
29.	Lime	*Papilio demoleus*	Not Evaluated
30.	Molted emigrant	*Catopsilia pyranthe*	Not Evaluated
31.	Monkey puzzle	*Rathinda amor*	Not Evaluated
32.	Oak leaf	*Kallima inachus*	Not Evaluated
33.	Pea Blue	*Lampides boeticus*	Not Evaluated
34.	Peacock Pansy	*Junonia almana*	Not Evaluated
35.	Plains Cupid	*Chilades pandava*	Not Evaluated
36.	Plains tiger	*Danaus chrysippus*	Not Evaluated
37.	Psyche	*Leptosia nina*	Not Evaluated
38.	Rounded Pierrot	*Tarucus extricatus*	Not Evaluated
39.	Small branded swift	*Pelopidas mathias*	Not Evaluated
40.	Small Grass Yellow	*Eurema brigitta*	Not Evaluated
41.	Stripped Tiger	*Danus genutia*	Not Evaluated
42.	Sunbean	*Curetis thetis*	Not Evaluated
43.	Tailed jay	*Graphium agamemnon*	Not Evaluated
44.	Twany coster	*Acraea terpsicore*	Not Evaluated
45.	White Orange tip	*Ixias marianne*	Not Evaluated

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Entomona (Thysanura) Project
AICOPTAX
Min. of Envn. & Forest
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46.	Yellow pansy	*Junonia hierta hierta*	Not Evaluated

Aves (Birds):

Sl. No.	Common name	Scientific Name	IUCN Red List category& Criteria (ver 3.1)
1.	Alexanderine Parakeet	*Psittacula eupatria*	Near Threatened
2.	Asian Openbill Stork	*Anastomus oscitans*	Least Concern
3.	Asian Pied Starling	*Gracupica contra*	Least Concern
4.	Bengal Bush Lark	*Mirafra assamica*	Least Concern
5.	Black Kite	*Milvus migrans*	Least Concern
6.	Black Crowned night heron	*Nycticorax nycticorax*	Least Concern
7.	Black-hooded oriol	*Oriolus xanthornus*	Least Concern
8.	Black-napped oriol	*Oriolus chinensis*	Least Concern
9.	Blue-throated Barbet	*Megalaima asiatica*	Not Recognised
10.	Bronze-Winged Jacana	*Metopidius indicus*	Least Concern
11.	Brown-Shrike	*Lanius cristatus*	Least Concern
12.	Chest nut Tailed Starling	*Sturnia malabarica*	Least Concern
13.	Common Hawk Cuckoo	*Hierococcyx varius*	Least Concern
14.	Common Hoopoe	*Upupa epops*	Least Concern
15.	Common Iora	*Aegithina tiphia*	Least Concern
16.	Common Coot	*Fulica atra*	Least Concern
17.	Copper smith Barbet	*Megalaima haemacephala*	Least Concern
18.	Cotton Pigmy Goose	*Nettapus coromandelianus*	Least Concern
19.	Eurasian Golden Oriole	*Oriolus oriolus*	Least Concern
20.	Green bee-eater	*Merops orientalis*	Least Concern
21.	Grey Headed Lapwing	*Vanellus cinereus*	Least Concern
22.	Grey Tit	*Parus afer*	Least Concern
23.	Grey Wagtail	*Motacilla cinerea*	Least Concern
24.	House sparrow	*Passer domesticus*	Least Concern
25.	Indian Cuckoo	*Cuculus micropterus*	Least Concern
26.	Black-crowned Night heron	*Nycticorax nycticorax*	Least Concern
27.	Indian Roller	*Coracias benghalensis*	Least Concern
28.	Jungle Babbler	*Turdoides striata*	Least Concern
29.	Black Kite	*Milvus migrans*	Least Concern
30.	Lesser whistling Duck	*Dendrocygna javanica*	Least Concern
31.	Lesser Goldenback Woodpecker	*Dinopium benghalense*	Least Concern

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32.	Lineated Barbet	*Psilopogon lineatus*	Least Concern
33.	Little Cormorant	*Microcarbo niger*	Least Concern
34.	Little Egret	*Egretta garzetta*	Least Concern
35.	Little Grebe	*Tachybaptus ruficollis*	Least Concern
36.	Long-tailed Shrike	*Lanius schach*	Least Concern
37.	Common Moorhen	*Gallinula chloropus*	Least Concern
38.	Orange Headed Thrush	*Zoothera citrina*	Least Concern
39.	Oriental Honey-buzzard	*Pernis ptilorhynchus*	Least Concern
40.	Oriental magpie-robin	*Copsychus saularis*	Least Concern
41.	Paddy Field Pipit	*Anthus rufulus*	Least Concern
42.	Plain Prinia	*Prinia inornata*	Least Concern
43.	Indian Pond heron	*Ardeola grayii*	Least Concern
44.	Purple Sunbird	*Cinnyris asiaticus*	Least Concern
45.	Red-throated Flycatcher	*Ficedula albicilla*	Least Concern
46.	Red-whiskered bulbul	*Pycnonotus jocosus*	Least Concern
47.	Red-breasted-parakeet	*Psittacula alexandri*	Near Threatened
48.	Red-vented-bulbul	*Pycnonotus cafer*	Least Concern
49.	Red-wattled lapwing	*Vanellus indicus*	Least Concern
50.	Rose-ringed Parakeet	*Psittacula krameri*	Least Concern
51.	Rufous Treepie	*Dendrocitta vagabunda*	Least Concern
52.	Scaly-breasted Munia	*Lonchura punctulata*	Least Concern
53.	Shikra	*Accipiter badius*	Least Concern
54.	White-throated Munia, Indian Silverbill	*Lonchura malabarica*	Least Concern
55.	Common Kingfisher	*Alcedo atthis*	Least Concern
56.	Spotted Owl	*Strix occidentalis*	Near Threatened
57.	Storkbilled Kingfisher	*Pelargopsis capensis*	Least Concern
58.	Common tailor bird	*Orthotomus sutorius*	Least Concern
59.	Tricolored Munia, Black-headed Munia	*Lonchura malacca*	Least Concern
60.	White Wagtail	*Motacilla alba*	Least Concern
61.	White-throated Kingfisher	*Halcyon smyrnensis*	Least Concern
62.	Yellow-footed Green-pigeon	*Treron phoenicopterus*	Least Concern

Mammalia:

Sl. No.	Common name	Scientific Name	IUCN Red List category& Criteria (ver 3.1)

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1.	Wild Cat (Bham) (Carnivora)	*Felis silvestris*	Least Concern
2.	Indian Grey Mongoose, Common Mongoose, Grey Mongoose (Carnivora)	*Herpestes edwardsii*	Least Concern
3.	Common Jackal (Carnivora)	*Canis aureus indicus*	Least Concern
4.	Common Palm Civet (Carnivora)	*Paradoxurus hermaphroditus*	Least Concern
5.	Common Palm Squirrel, Indian Palm Squirrel, Three-striped Palm Squirrel (Rodentia)	*Funambulus palmarum*	Least Concern
6.	Capped Langur (Primates)	*Trachypithecus pileatus*	Vulnerable
7.	Indian flying fox (Megachiroptera)	*Pteropus giganteus*	Least Concern
8.	Greater False Vampire Bat (Microchiroptera)	*Megaderma lyra*	Least Concern
9.	House Shrew, Asian House Shrew (Insectivora)	*Suncus murinus*	Least Concern
10.	Greater Bandicoot Rat (Rodentia)	*Bandicota indica*	Least Concern
11.	Lesser Bandicoot Rat (Rodentia)	*Bandicota bengalensis*	Least Concern
12.	House Mouse(Rodentia)	*Mus musculus*	Least Concern

Reptilia:

Sl. No.	Common name	Scientific Name	IUCN Red List category & Criteria (ver 3.1)
1.	Indian Flapshell Turtle	*Lissemys punctata andersoni*	Lower Risk/Least concern
2.	Oriental garden lizard	*Calotes versicolor*	Endangered
3.	Asian Chameleon, Indian Chameleon	*Chamaeleo zeylanicus*	Least Concern
4.	House gecko	*Hemidactylus frenatus*	Least Concern
5.	Brahminy Skink, Keeled Indian Mabuya	*Mabuya carinata*	Least Concern
6.	Bengal Monitor Lizard, Clouded Monitor, Common Indian Monitor	*Varanus bengalensis*	Least Concern
7.	Buff-striped keelback	*Amphiesma stolatum*	Not Evaluated
8.	Chekered keelback water snake	*Xenochrophis piscator*	Least Concern
9.	Common Sand boa	*Gongylophis conicus*	Not Evaluated
10.	Oriental rat snake, Indian rat snake	*Ptyas mucosa*	
11.	Banded Krait	*Bungarus fasciatus*	Least Concern
12.	Common krait	*Bungarus caeruleus*	Least Concern

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AICOPTAX
Min. of Envn. & Forest
Govt. of India
Vidyasagar College, Kolkata

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Golapbag, Burdwan-713104, W.B. India

13.	Binocellate cobra, Spectacled cobra	*Naja naja naja*	Least Concern
14.	Monocellate cobra	*Naja naja kaouthia*	Least Concern
15.	Russell's viper	*Daboia russelii*	Least Concern

Amphibia:

Sl. No.	Common name	Scientific Name	IUCN Red List category & Criteria (ver 3.1)
1.	Indian skipper frog or skittering frog (Dicroglossidae)	*Euphlyctis cyanophlyctis*	Least Concern
2.	Indian cricket frog, Rice field frog (Dicroglossidae)	*Fejervaroya limocharis*	Least Concern
3.	Indian Bull Frog (Dicroglossidae)	*Hoplobatrachus tigerinus*	Least Concern
4.	Ant Frog, Ornate Narrow-mouthed Frog, Ornamented Pygmy Frog, Black-throated Frog, Ornate Narrowmouth Frog, Ornate Ricefrog, Ornate Rice Frog (Microhylidae)	*Microhyla ornata*	Least Concern
5.	Sri Lankan Bullfrog (Microhylidae)	*Kaloula taprobanica*	Least Concern
6.	Common Indian Tree frog (Rhacophoridae)	*Polypedates maculatus*	Least Concern
7.	Asian Common Toad, Asian Toad, Black-spectacled Toad, Common Sunda Toad, Javanese Toad (Bufonidae)	*Duttaphrynus melanostictus*	Least Concern

Osteichthyes (Bony Fish):

Sl. No.	Common name	Scientific Name	IUCN Red List category & Criteria (ver 3.1)
1.	Elongate Glass Perchlet, Kath Chanda	*Ambassis nama*	Least Concern
2.	Striped panchax, Golden Wonder Killifish Techokha	*Aplocheilus lineatus*	Least Concern
3.	Blue panchax, Techokha	*Aplocheilus panchax*	Least Concern
4.	Bot koi	*Badis badis*	Least Concern
5.	Latha	*Channa punctata*	Least Concern
6.	Snakehead Murrel, Common Snakehead, Chevron Snakehead,	*Channa striata*	Least Concern

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Zygenloma (Thysanura) Project
AICOPTAX
Min. of Envn. & Forest
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	Asian Snakehead, Striped Snakehead, Sol		
7.	Pata Kholse	*Trichogaster fasciata*	Least Concern
8.	Lal Kholse	*Trichogaster lalius*	Least Concern
9.	Grass carp	*Ctenopharyngodon idella*	Exotic species
10.	Flying barb, Ghora Danria	*Esomus danricus*	Least Concern
11.	Bele	*Glossogobius giuris*	Least Concern
12.	Stinging catfish, Singhi	*Heteropneustes fossilis*	Least Concern
13.	Peppered Loach, Guntea Loach, Scavenger Loach, Gunthe	*Lepidocephalus guntea*	Least Concern
14.	Jat Pancal	*Macrognathus aculeatus*	Least Concern
15.	Gaj Pancal	*Macrognathus pancalus*	Least Concern
16.	Tangra	*Mystus vittatus*	Least Concern
17.	Indian Glassy Fish, Gol Chanda	*Parambassis ranga*	Least Concern
18.	Spottedsail Barb, Pygmy Barb, PhutuniBbarb, Dwarf Barb	*Pethia phutunio*	Least Concern
19.	Spotfin Swamp Barb, Pool Barb, Stigma Barb	*Puntius sophore*	Least Concern
20.	Onespot Barb, Teri Barb	*Puntius teiro*	Least Concern
21.	Ticto Barb, Firefin Barb, Tic-tac-toe Barb, Two-spot Barb, Tit Punti	*Pethia ticto*	Least Concern

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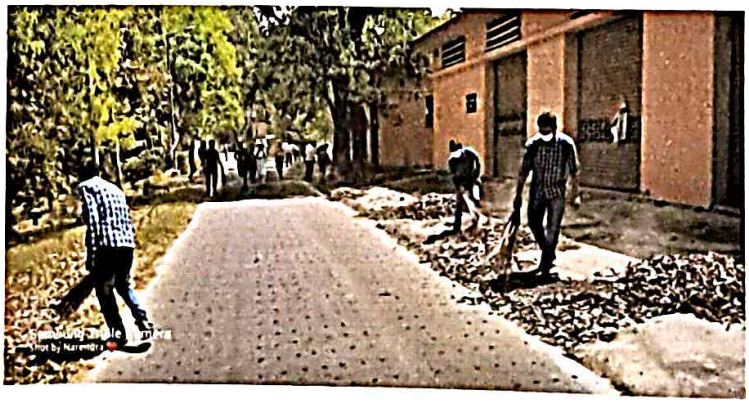
Zygentoma (Thysanura) Project
AICOPTAX
Min. of Envn. & Forest
Govt. of India
Vidyasagar College, Kolkata-6

Annexure 1.19.1:

NSS Campus Cleaning

Annexure: 1.19.1

NSS Campus Cleaning



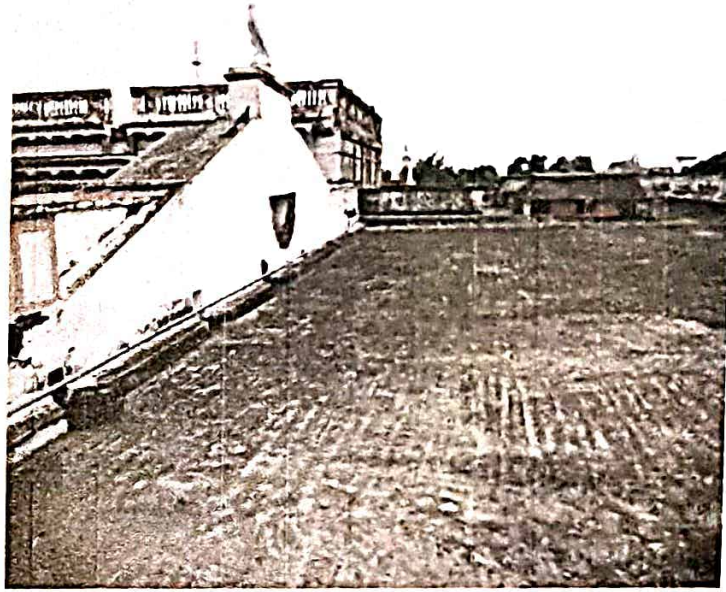
Annexure 1.19.2:

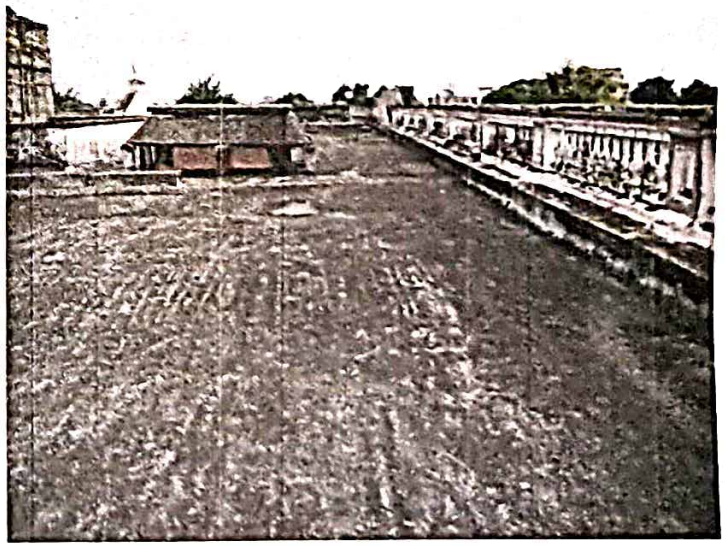
Rainwater harvesting

Annexure: 1.19.2

Rain water harvesting

At this age of time depletion of groundwater is a matter of great concern across the globe. In India, groundwater level is decreasing rapidly. The matter becomes worse in some parts. The University of Burdwan is very much conscious about this. Besides appropriate conservation of large number of water bodies in the campus, the University has also taken measures to use rainwater appropriately. In this connection, the University has implemented a plan by which the huge rain water of the roof of Mehtab Manjil (Administrative building of the University) is channelized to an underground tank and the excess of it is recharged to ground water through Rain Water Harvesting scheme.





Rain water harvesting

Apart from that Surface water drainage was recharged to ground water table through 450 mm dia recharge points after proper sieving and gravel screening at the exit points (7 nos in Golapbag and 6 nos in Tarabag)

Annexure 1.19.4:

Sustainable campus through carbon dioxide neutrality

Annexure: 1.19.4

SUSTAINABLE CAMPUS

The University of Burdwan

[through Carbon Neutrality]

Prepared by

ENVIRONMENTAL COMMITTEE

The University of Burdwan

Burdwn

Introduction

- **What is Carbon Neutrality?**

Carbon neutrality, also known as having a net-zero carbon footprint, refers to the state where the amount of carbon dioxide (CO_2) emissions released into the atmosphere is balanced by an equivalent amount of CO_2 removal or offset.

- **What is Carbon footprint?**

A carbon footprint is the total amount of greenhouse gases (GHGs), primarily carbon dioxide (CO_2), that are emitted directly or indirectly by human activities. These activities can range from driving a car, using electricity, manufacturing goods, to various aspects of daily life. The carbon footprint is usually measured in units of carbon dioxide equivalents (CO_2e) to account for the different global warming potentials of various GHGs.

- **Importance of Carbon Neutrality in combating Climate Change:**
- Mitigates global warming
- Meets international climate goals (Paris Agreement)
- Improves public health
- Enhances economic stability and energy security
- Creates green jobs
- Reduces campus carbon footprint
- Engages and attracts environmentally conscious students and staff
- Enhances university reputation
- Achieves long-term cost savings
- Demonstrates educational leadership
- Advances research and innovation

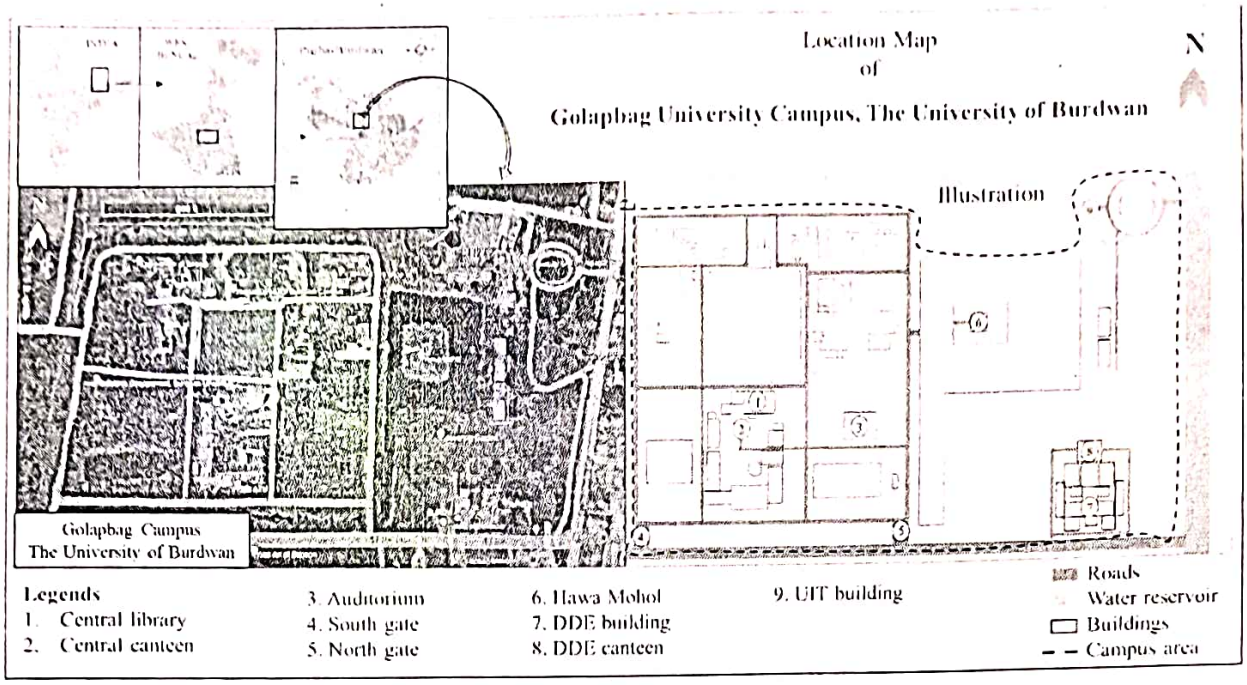


Fig. 1 The Study area

Calculation of CO_2 equivalent carbon sequestration by plants

Trees distribute its biomass in two primary compartments: Above-Ground Biomass (AGB) and Below-Ground Biomass (BGB).

***AGB* (lb) = $0.25 \times D^2 \times H$**

Where, D = tree diameter measured at 1.37 meters from the ground (inch). This measurement is globally used as a standard to get a better result. However, if your tree is below 1.37 meters, still the formula can be used, H = tree height (ft).

***BGB* (lb) = $0.2 \times AGB$**

From these formulas, we can calculate the total biomass from a tree:

***Total Biomass (TB)* (lb) = $AGB + BGB = AGB + 0.2 \times AGB = 1.2 \times AGB$**

On average, a tree consists of 72.5% dry matter and 27.5% moisture content. To calculate the tree's dry weight, we could multiply the total weight of the tree by 72.5%.

***Total Dry Weight (TDW)* (lb) = $TB \times 0.725$**

Carbon occupies 50% of the total dry weight. Therefore,

***Total Carbon (TC)* (lb) = $TDW \times 0.5$**

With the value of total carbon, we can calculate the value of CO_2 equivalent sequestered (CO_2 eq.seq) on a tree. CO_2 has one molecule of Carbon and two molecules of Oxygen. The atomic weight of Carbon is 12u, and the atomic weight of Oxygen is 16u. The weight of CO_2 in trees is determined by the ratio of CO_2 to C is 44/12 = 3.67. Therefore, to determine the weight of carbon dioxide sequestered in the tree, multiply the weight of carbon in the tree by 3.67.

CO_2 eq.seq (lb $year^{-1}$) = $TC \times 3.67$

CO_2 eq.seq (kg $year^{-1}$) = CO_2 eq.seq (lb $year^{-1}$) / 2.205

Calculation of CO_2 equivalent carbon emission

Emission through transportation:

✓ Surveys were done to estimate the percentage of mode of transport used wnon-teaching staff, respectively.

✓ To validate the survey, visual counting was done at two main gate of the campus, i.e., north gate and south gate at 10:00-11:00, 13:00-14:00 and 17:00-18:00 hours.

✓ Total number of vehicles with types were calculated. The distance of roads from north to south of the campus is 420m, east to west of the campus is 310m and the diagonal distance is 522m.

✓ So, 522m on average is covered by every person of any department per day to reach his/her respective department, and every person return back from the campus. So, total distance covered per person per day is 1.04km. Total emissions from transport is calculated within the campus for faculties, research scholars, students and. Total working day for one year is 220.

CO_2 equivalent carbon sequestration

Plant Name	Average diameter (D) (inch)	Average Height (H) (ft)	AGB (lb)	BGB (lb)	TB (lb)	TDW (lb)	TC (lb)	CO_2 eq.seq (lb $year^{-1}$)	CO_2 eq.seq (kg $year^{-1}$)
Polyalthia longifolia	29.184	42.049	8953.34	1790.67	10744.01	7789.41	3894.71	14293.59	6482.35
Lagestroemia speciosa	16.107	17.449	1131.72	226.34	1358.06	984.59	492.3	1806.74	819.38
Sarraca asoca	18.637	23.419	2033.58	406.72	2440.3	1769.22	884.61	3246.52	1472.34
Dolichandrone stipulata	14.303	32.537	1664.07	332.81	1996.88	1447.74	723.87	2656.6	1204.81
Swietenia mahagoni	55.993	76.096	59644.35	11928.87	71573.22	51890.58	25945.29	95219.21	43183.32
Mangifera indica	23.497	47.428	6546.36	1309.27	7855.63	5695.33	2847.67	10450.95	4739.66
Albizia saman	33.07	52.007	14219.04	2843.81	17062.85	12370.57	6185.29	22700.01	10294.79
Drypetes roxburghii	23.047	62.057	8240.61	1648.12	9888.73	7169.33	3584.67	13155.74	5966.32

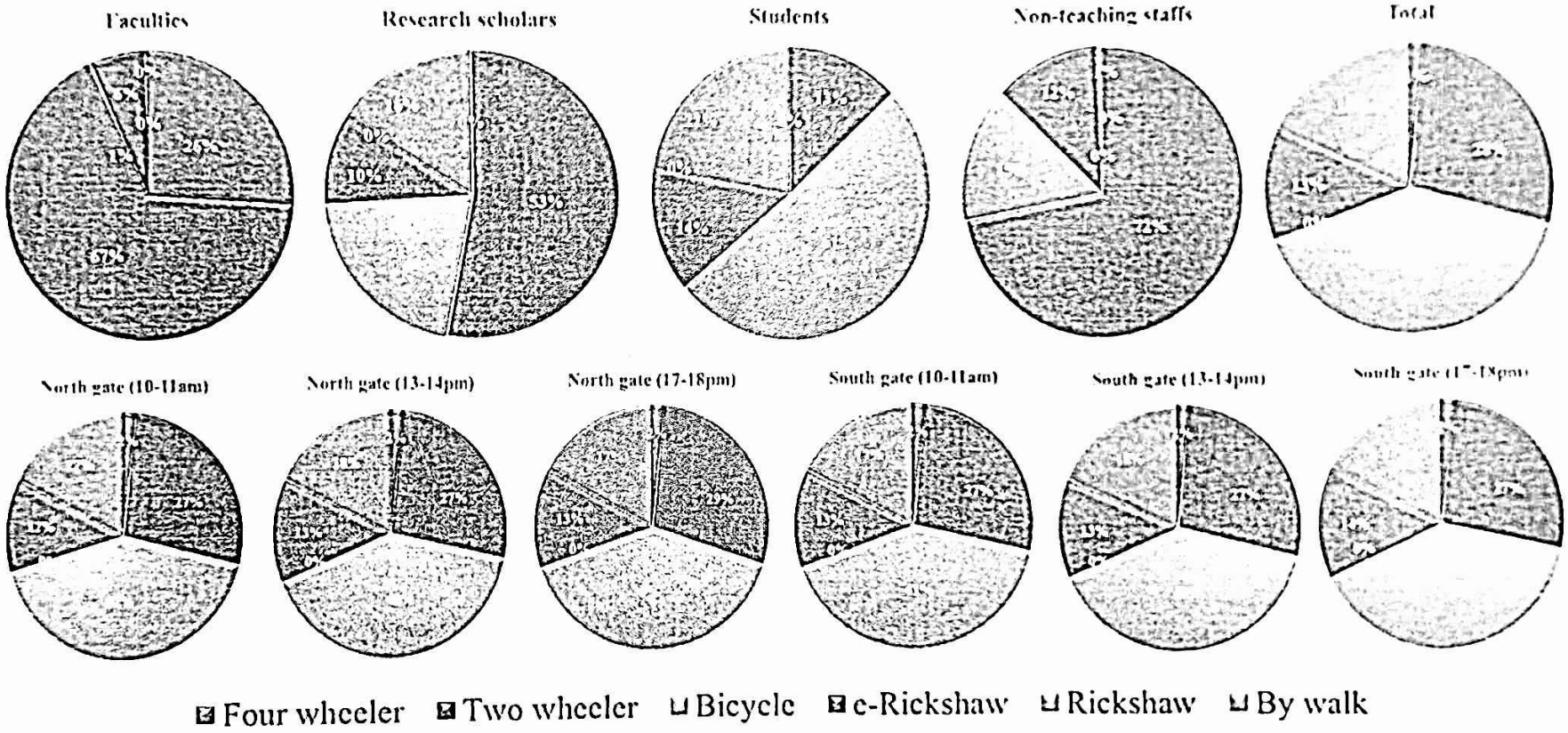
Average CO2 eq.seq (kg plant^{-1} year^{-1})	9270.37

Total No of plants in Golapbag campus = 1200

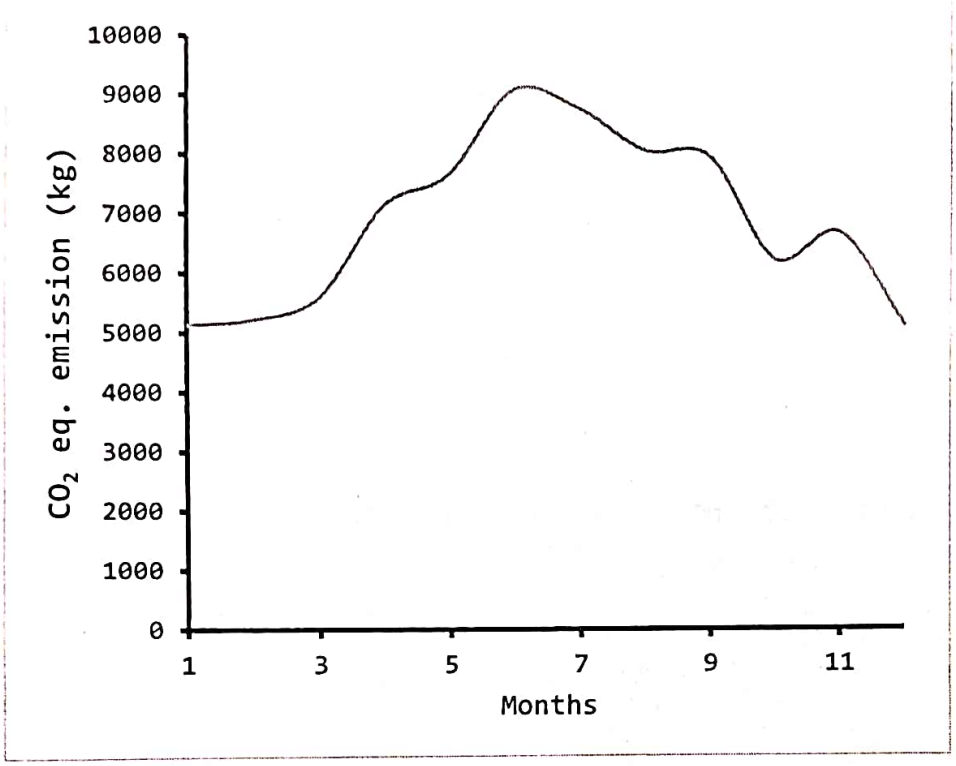
Total CO_2 eq.seq (kg year^{-1}) = 11124444

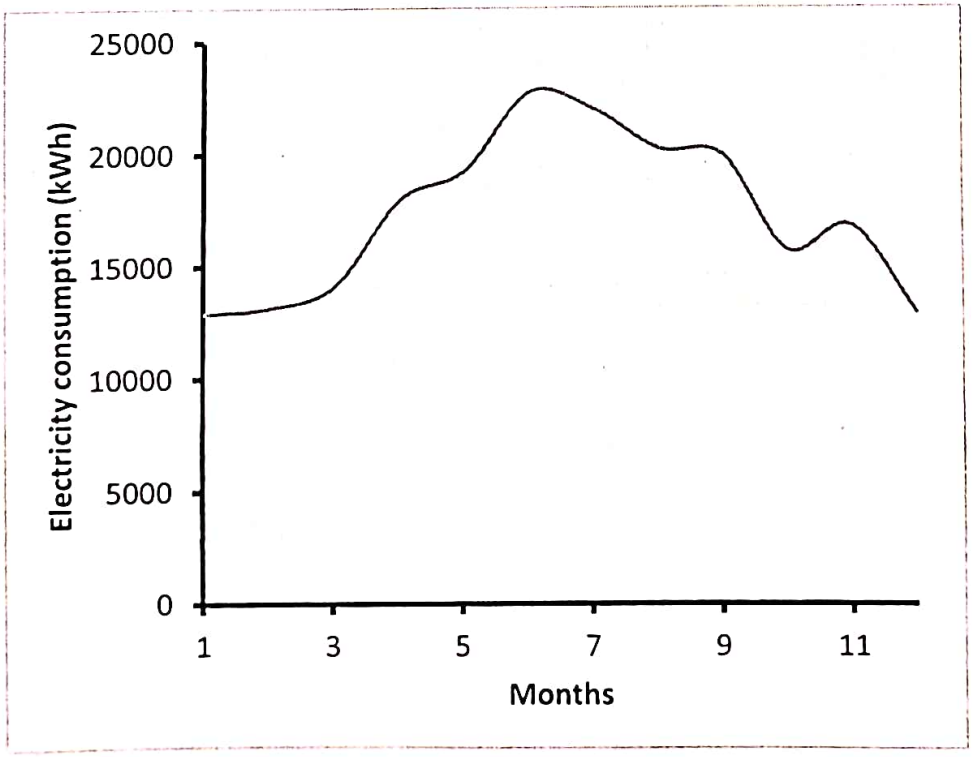
Total CO_2 eq.seq (tone year^{-1}) = 11124.444

Means of transportation used within campus



CO_2 equivalent carbon emission from electricity consumption





Total CO_2 eq. emission from electricity consumption = 82.52118 tone year^{-1}

CO_2 equivalent carbon emission from transportation

Means of transportation	Number (day-1)	CO_2 eq. emission (kg km^{-1})	CO_2 eq. emission (kg day^{-1})	CO_2 eq. emission (kg $year^{-1}$)	CO_2 eq. emission (tone $year^{-1}$)
Four wheeler	61	0.2	12.69	2791.8	2.7918
Two wheeler	1126	0.1	117.1	25762	25.762
Bicycle	1630	0	0	0	0
e-rickshaw	516	0.03	16.1	3542	3.542
rickshaw	1	0	0	0	0
By walk	735	0	0	0	0
Total CO_2 eq. emission from transport (tone $year^{-1}$)					32.0958

CO_2 equivalent carbon emission from food consumption

Item	CO_2 eq. emission (kg day^{-1})	CO_2 eq. emission (kg $year^{-1}$)	CO_2 eq. emission (tone $year^{-1}$)
Rice	3.51	772.2	0.7722
Flour	12.97	2853.4	2.8534
Potato	8.55	1881	1.881
Vegetables	10.68	2349.6	2.3496
Milk & milk products	11.85	2607	2.607
Chiken	11.67	2567.4	2.5674
LPG	38.41	8450.2	8.4502
Coals	30.72	6758.4	6.7584
Total CO_2 eq. emission from food consumption (tone $year^{-1}$)			**28.2392**

Carbon Balance Sheet of The University of Burdwan

		CO_2 eq. (tone $year^{-1}$)
Emission		
Electricity consumption		82.52118
Transportation		32.0958
Food consumption		28.2392
Total		**142.8562**
Sequestration		
Plant	11124.44	
Net sequestration	**10981.59**	

Conclusion

Hence, from the present study, it can be concluded that the present campus of the University of Burdwan has enough green space to combat the emissions it generates. Moreover, the activities and consumption (in terms of CO2 equivalent) within the campus are far below the sequestration level, achieving a positive figure for net sequestration.

[Sudipto Mandal]

Annexure 1.19.12:

Celebration of "No Vehicle Day"

Annexure: 1.19.12

THEUNIVERSITYOFBURDWAN
ViceChancellor'sSecretariat
Rajbati,Burdwan-713104
vc@buruniv.ac.in
Ph.:9474463541

No.V/M-2/90 Dated1st June, 2024

NOTIFICATION

The United Nations has declared 3rd June as World Bicycle Day and is celebrated every year globally with a view to reduce carbon footprints in our environment and to raise awareness on alternative environment friendly transport that is convenient to every level of Society and on importance of cycling for health.

All the Students, Research Scholars, Teachers, Officers, Non-Teaching employees and other stake holders of this University are requested to observe the 3rd June, 2024 as the World Bicycle Day and use Bicycle/Electronic Vehicle/Public Transport to reach University campus instead of personal motor vehicles, so that we can step forward to protect and save our mother Environment and Earth.

Vice Chancellor
The University of Burdwan

No.V/M-2/90/1(100) Dated1st June, 2024

Copyforwarded forinformationand necessaryactionto the: -

1. Dean, F.C. for P.G. Studies in Arts, Com., Law etc., B.U.
2. Dean, F.C. for P.G. Studies in Science, B.U.
3. Registrar, B.U.
4. Finance Officer, B.U.
5. Controller of Examinations, B.U.
6. All Officers, B.U.
7. Heads/TICs of all Academic Departments, B.U.
8. The President/General Secretary, BUTA/WBCUPA/BUOA/BUKS/BUKU/ABRSM/BVCS.
9. System Engineer & In-Charge, Computer Centre/Webmaster, B.U. with a request to place this notification on the University Website.
10. Officeofthe ViceChancellor/ProViceChancellor/Registrar,B.U.

Vice Chancellor
The University of Burdwan

Annexure 2.1:

Water storage

THE UNIVERSITY OF BURDWAN

Annexure: 2.1

Name of the Department	Capacity of Tank	Quantity
Humanities Building	2000 L	2
M.B.A.	2000 L	2
Central Library	2000 L	4
Central Library	1000 L	2
Physics	2000 L	1
Mathematics	2000 L	1
Physics Annex	1000 L	1
Botany	1500 L	2
Botany	1000 L	1
Chemistry	2000 L	2
Auditorium	1000 L	3
Nuclear Chemistry	2000 L	1
USIC	1000 L	1
Geography	1000 L	6
Bengali	1000 L	3
Composite Building	2000 L	6
Academic Staff College	2000 L	1
Statistics	1500 L	1
Hindi	1500 L	1
Old Canteen	1000 L	1
Zoology	1000 L	6
Computer Science	2000 L	1
Computer Science	1000 L	5
Microbiology	2000 L	2

Annexure 3.1.1:

Electric consumption amount

UNIVERSITY ELECTRIC CONSUMPTION IN kwh ANNUALLY

				Period			Amount paid (Rs)		
Sl No	No of Stations (Consumer ID)	Name of the station	Unit Consumed	Monthly	Quarterly	Yearly	Monthly	Quaterly	Yearly
1	950027706	Golapbagh Campus	97568	Monthly		1170816	901307		10,815,684.00
2	900003952	International Student Hostel	1593	Monthly		19116	55085		661,020.00
3	501745880	Health Center	9477		Quarterly	37908		83827	335,308.00
4	945128800	Computer Sc ,DDE & Others	7008	Monthly		84096	149230		1,790,760.00
5	945128700	Rajbati	8266	Monthly		99192	86634		1,039,608.00
6	950041503	Golden jubilee Building	6267.25	Monthly		75207	142658		1,711,896.00
7	122064080	Kolkata Camp Office	458		Quarterly	1832		5868	23,472.00
8	51200130	Registrar	1877	Monthly		22524	13585		163,020.00
9	512000140	V.C	214	Monthly		2568	5733		68,796.00
10	512006267	V.C Bunglow	1144		Quarterly	4576		10423	41,692.00
11	945100600	Tarabagh Campus	56425	Monthly		677100	588262		7,059,144.00
		Total				2194935			23,710,400.00

Annexure: 3.1.1

Annexure 3.1.15:

No. of computers and peripherals

Annexure: 3.1.15

The University of Burdwan, Registrar's Department, Central Store
Report of Computer, Laptop, Printer and Photocopy Machine purchased during 2022-2023 & 2023-2024

Department	Computer	Laptop	Printer	Photocopy Machine	Date
Geography	04Nos.				11.04.2022
Tourism Management	01 Nos.				
Economics	01 Nos.				
Physics	01 Nos.		01 Nos.		
Women's Studies	01 Nos.		01 Nos.		
Nutrition & Public Health	01 Nos.		01 Nos.		
Electronics & Communication	01 Nos.		01 Nos.		
Geospatial Science	01 Nos.		01 Nos.		
Psychology	01 Nos.		01 Nos.		
Physiology	01 Nos.		01 Nos.		
Molecular Biology & Human Genetics	01 Nos.		01 Nos.		
Chemistry	01 Nos.				19.04.2022
Placement and Students Welfare	01 Nos.				02.05.2022
Placement and Students Welfare			01 Nos.		30.05.2022
Estate			01 Nos.		28.09.2022
Secretary, Faculty Council (Science)				01 Nos.	18.11.2022
Controller of Examinations				02 Nos.	03.01.2023
Physics		01 Nos.			30.01.2023
Physics	02 Nos.	02 Nos.	03 Nos.		07.09.2023
Commerce		01 Nos.			11.12.2023
Pro-Vice-Chancellor			01 Nos.		
NAD Cell		01 Nos.			02.01.2024
CRSMF		01 Nos.			
Registrar Secretariat	01 Nos.				17.01.2024
Finance Secretariat	02 Nos.			01 Nos.	06.02.2024
Registrar Secretariat	01 Nos.				22.02.2024
Lifelong Learning			01 Nos.		
Election & Constitution Unit	01 Nos.				
Physics	01 Nos.				13.03.2024
Mathematics		01 Nos.			
Geospatial Science		01 Nos.			
Biotechnology	05 Nos.				28.03.2024
Microbiology	03 Nos.				
Economics	01 Nos.				
Zoology	05 Nos.				
Bengali	01 Nos.				
Environmental Science	04 Nos.				
Botany	04 Nos.				
Nutrition & Public Health	01 Nos.				

Tourism Management	01 Nos.				28.03.2024
Statistics	04 Nos.				
Sanskrit	01 Nos.				
History	03 Nos.				
Lifelong Learning	02 Nos.				
Finance Secretariat	01 Nos.				
Computer Science	15 Nos.				
Dean, Science Office	01 Nos.				

Submitted

Debaprasad Banerjee
Storekeeper
Central Store

Annexure 4.1.9:

Use of fertilizers and pesticides

Annexure: 4.1.9

Quantity of fertilizers and its application :

1. **Chemical Fertilizers :**

The following chemical fertilizers were used in the field of P.N. Bhaduri Crop Research and Seed Multiplication Farm during April, 2023 to March, 2024 for producing quality seed of Foundation and certified types of several crops like Paddy, Potato, Mustard, Sesame, Green gram etc. :

i. Urea – 142 kg per month
ii. 10:26:26 – 200 kg per month
iii. MOP – 42 kg per month

2. **Organic Fertilizers** : The given organic fertilizers were mainly used for Guarden maintenance

i. Mustard cake- 17 kg per month
ii. Bone dust- 9 kg per month
iii. Neem cake – 9 kg per month

Quantity of pesticides and its application :

Following pesticides were used in the field of P.N. Bhaduri Crop Research and Seed Multiplication Farm during April, 2023 to March, 2024 for controlling insect pest, disease pest , weeds in field and adjacent areas of several crops like Paddy, Potato, Mustard, Sesame, Green gram etc. :

a. **For insect pest**
Acephate 75 %, Fipronil , Dimethoate etc. -- **4.2 lit per month**
b. **For disease pest**
Mancozeb, Blitox, Other fungicides **etc. – 2.8 kg per month**
c. **For weed control**
Selective and non selective herbicide etc. **– 2 lit. Per month**

3. **Provide workshop/seminar/training /demonstration/Social outreach programme during 2023-24 :**

i. Following **Lectures were provided for farmers, students and agri-horti practitioners on Entrepreneurship and Farmers meet** on 24th March, 2024 under 2nd Botanical Congress (2023-24) organized by P.N. Bhaduri Crop Research and Seed Multiplication Farm, Department of Botany, The University of Burdwan & IIAB (ICAR) in collaboration with Botanical Society of Bengal

a. **Tissue culture and others** By Dr. B.K. Dutta, Director, Vivekananda Institute of Biotechnology, Nimpith, W.B
b. **Smart and Precision farming** by Dr. Anindya Bose, Senior Sc. Officer, Dept. of Physics, The university of Burdwan., Founder Director of Navitro Consultancy and services (OPC) Pvt. Ltd.
c. **Mushroom entrepreneurship** by Mr. Suranjan Barat, Purba Bardhaman
d. **Quality rice business for consumption**, Partha Nandi CEO Lalbaba Rice

ii. **Event/lecture on Entrepreneurship development** on 24th March, 2024 under 2nd Botanical Congress (2023-24) organized by P.N. Bhaduri Crop Research and Seed Multiplication Farm, Department of Botany, The University of Burdwan & IIAB (ICAR) in collaboration with Botanical Society of Bengal :

a. **Vermiculture** By Dr. Jagatpati Tah, Ex- Professor, Department of Botany, B.U
b. **Apiculture** by Mr. Swarnendu Sarkar
c. **Jute Enterprise** by Dr. Subhajit Dutta, CRIJAF (ICAR)

iii. One-day Social outreach programme on "Seed Treatment campaign " on **8th February, 2024** at the village of Saraitikar under the district of Purba Bardhaman was organized by P.N. Bhaduri Crop Research and Seed Multiplication Farm, B.U

Annexure 5.5:

E-waste management awareness programme

o/c

Annexure: 5.5

Department of Environmental Science
The University of Burdwan
Golapbag, Burdwan–713104, West Bengal, India
Dpt. Ph. No. : (0342)–2559431, Mob: +919434545694

Date: 28.12.2023

From: Prof. Koushik Ghosh & Prof. Naba Kumar Mondal

Joint Organizing Secretary, E-waste Management Committee,

The University of Burdwan

To

The Managing Director, West Bengal Electronic Industry,
Development Corporation Ltd. A government of
West Bengal undertaking Webel Bhavan
Block: EP & GP, Sector V, Bidhannagar, Salk Lake, Kolkata: 700091

Respected Sir,

We are happy to inform you that the University of Burdwan is going to organize a one day workshop on the entitled "**Management of solid waste and e-waste**" on 11th January, 2024 at 11.00 am through offline mode at Kadambini Hall, The University of Burdwan, Golapbag, Burdwan 713104.

In this programme, organizing committee wish to get proper guidance from Mr. Anindya Banerji, SPOC, E-Waste Management, WEBEL as a resource person from your good office.

Kindly extend your kind cooperation so that we can organize the said workshop.

Thanking you.

With Regards,

(Prof. K. Ghosh & Prof. N.K. Mondal)
Joint organizing secretary, E-waste Management Committee
The University of Burdwan

DIRECTOR (Actl. Charge)
Benoy Krishna Choudhury
Rural Technology Centre
THE UNIVERSITY OF BURDWAN

Professor
Dept. of Environmental Sc.
The University of Burdwan

The University of Burdwan
e-Waste management committee

December 26, 2023

This has a reference to the proposal received from the Centre for Innovation Entrepreneurship and Skill Development (CIESD) and Benoy Krishna Choudhury Rural Technology Centre (BKCRTC), The University of Burdwan regarding the awareness of solid waste and e-waste among our University community. The proposal was placed before the Hon'ble Vice Chancellor, The University of Burdwan (BU) for necessary approval and sanction of Rs 33000/-(Rupees Thirty three thousand only).

The tentative programme schedule and proposed budget of the above mentioned programme are detailed below:

Workshop on "Management of solid waste and e-waste"
Jointly organized by

Target Participants: Faculty member (HoD / their representative)
Venue: CIESD (Alumni Hall) ***OR***, Kadambini Hall, The University of Burdwan, Golapbag, Burdwan 713104
Tentative Schedule: January 11, 2024
Intake Capacity: 100 Participants

Tentative Course Schedule:

Date and Time	Session/theme
17th January 2024, Wednesday	
9.30 am-10.00 am	Registration
10.00 am-10.30 am	Inaugural Session/Introduction
11.00 am- 11.45 am	**Prof. Sadhan Kumer Ghosh** ***Director General, Sustainable Development & Circular Economy Research Centre, ISWMAW & Founder and President, International Society of Waste Management, Air and Water (ISWMAW); Founder Coordinator, Centre for Sustainable Development & Resource Efficiency Management, Jadavpur University, India*** ***Formerly: Dean, Faculty of Engineering & Technology, Professor & Head, Department of Mechanical Engineering, Jadavpur University, India;*** ***Chairman, IconSWM-CE and Founder & President, ISWMAW***
12.00 pm-12.30 pm	**Mr Anindya Banerjee**, SPOC, E-Waste Management, WBEIDC (WEBEL)
[illegible] 1.00 pm	Vote of thank

Cont. after Page 1

Proposed Budget:

Item(s)	Expenditure (Rs.)
1. Venue development (Publicity, photographs, banner etc.)	2,000.00
2. Honorarium & T.A. to the resource persons	15,000.00
3. Registration Kit (Rs. 50/ × 100)	5,000.00
4. Refreshment/Tea etc. (Rs. 50 × 100)	5,000.00
5. Decoration, Flower/Memento, Uttorio Misc.	5,000.00
6. Miscellaneous	1000.00
Total	**33,000/-**

A budgetary estimate of Rs. 33,000/- (Rupees Thirty three thousand only) has been prepared to organize one day workshop on **"Management of solid waste and e-waste"**. Thus, the entire matter is now placed before the Hon'ble Vice Chancellor for necessary approval and sanction of Rs 33,000/- (Rupees Thirty three thousand only) under the budget provision of the BKCRTC, BU to organize the Workshop on **"Management of solid waste and e-waste"**.

(PROF. KOUSHIK GHOSH AND PROF. NABA KUMAR MONDAL)

The University of Burdwan

January 19, 2024

Proposal for formulation of "e-Waste Disposal Committee"

A workshop on "***Management of Solid Waste & e-Waste***" was conducted by the *Binoy Krishna Choudhury Rural Technology Centre* (BKCRTC) and *Centre for Innovation Entrepreneurship & Skill Development* (CIESD) of The University of Burdwan on 11-01-2024 at the Kadambini Ganguli Hall, Golapbag. The workshop was attended by the faculty members, officers, staffs and research scholars of our university. Two eminent speakers, **Prof. Sadhan Kumar Ghosh**, Former Professor, Jadavpur University and **Mr. Anindya Banerji**, SPOC, e-Waste Management, WEBEL addressed the participants regarding the hazards associated with solid waste and e-waste along with their mitigation strategies. Leaching out of the toxic materials like lead, cadmium, or polychlorinated biphenyls (PCBs) from e-waste could be of serious health concerns, as warned by the World Health Organization (WHO). Thus, **Prof. Ghosh** emphasized the need for segregation of the solid wastes and e-wastes at source and their subsequent recycling. Unorganized collections by the wanderers and unmethodical metal extractions result in inhalation of the toxic fumes and accumulation of chemicals in soil, water or food chain causing environmental as well as human health hazards. In this backdrop, **Mr. Banerji** enlightened the participants about the methodologies to recycle the e-wastes.

It may be noted that our university is a huge user of computers and other electronic gadgets. Both the resource persons strongly recommended that the university must play a responsible role concerning disposal of wastes arising out from electronic appliances. Therefore, an ***"e-Waste Disposal Committee"*** should be formed keeping in view of the following objectives:

1. To coordinate the disposal of various e-waste generated from different academic as well as administrative departments of the university
2. To organize awareness meetings/workshops emphasizing 3 'R's, i.e., reduce, reuse and recycling of the e-waste
3. To minimize the generation of e-waste and to provide guidelines for e-waste management
4. To handle and treat e-waste in a safe and sustainable way maintaining safety of the human and environmental health
5. To keep records and data in order to disposal of e-waste effectively and efficiently

As recommended by the expert members, the e-waste disposal committee should consist of the following members (*not less than four in number*):

i) Chairperson: Hon'ble Vice Chancellor / Registrar
ii) Finance Officer or Nominee (*not below the rank of Accounts Officer*)
iii) Two faculty members from Computer / Electronics / Instrumentation departments
iv) Others

MANAGEMENT OF SOLID WASTE AND E-WASTE

THE UNIVERSITY OF BURDWAN

A list of organising committee (proposed) is placed before Hon'ble Vice Chancellor, The University of Burdwan for conducting a one day workshop on "*Management of solid and e-waste*". The said proposal was initiated by the Centre for Innovation Entrepreneurship and skill development (CIESD) and Benoy Krishna Choudhury Rural Technology Centre (BKCRTC), The University of Burdwan.

Organising committee:

1. Prof. Goutam Chandra, Hon'ble Vice Chancellor, BU (chief patron)
2. Prof. Ashis Kumar Panigrahi, Hon'ble Pro Vice Chancellor, BU
3. Dr. Sujit Kumar Choudhury, Registrar, BU
4. Prof. Apurba Ratan Ghosh, Dept. of Environmental Science, BU
5. Prof. Koushik Ghosh, Dept. of Zoology, BU
6. Prof. Sunil Karforma, Dean of Science, BU
7. Prof. Pradip Chattapadhyay, Dean of Arts, BU
8. Prof. Tanmoy Banarjee, Dept. of Physics, BU
9. Prof. Naba Kumar Mondal, Environmental Science, BU
10. Dr. A. Chatterjee, Librarian

This matter is placed before Hon'ble Vice Chancellor for necessary approval.

Hon'ble VC Sir
The whole proposal is very much needed for NAAC visit.
Kindly approve & sanction (3300/-) for conducting such workshop on Solid & E-waste

THE UNIVERSITY OF BURDWAN

January 19, 2024

18.06.24

Proposal for "Solid Waste Management Committee"

A workshop on *"Management of Solid Waste & e-Waste"* was conducted by the Binoy Krishna Choudhury Rural Technology Centre (BKCRTC) and *Centre for Innovation Entrepreneurship & Skill Development (CIESD)* of The University of Burdwan on 11-01-2024 at the Kadambini Ganguli Hall, Golapbag. The workshop was attended by the faculty members, officers, staffs and research scholars of our university. Two eminent speakers, **Prof. Sadhan Kumar Ghosh,** Former Professor, Jadavpur University and **Mr. Anindya Banerji,** SPOC, e-Waste Management, WEBEL. addressed the participants regarding the hazards associated with solid waste and e-waste along with their mitigation strategies.

From the discussions of the workshop it was realized that apart from the "e-Waste Disposal Committee", a "**Solid Waste Management Committee**" also needs to be formed to look after overall solid waste disposal of the university.

Thus, a ***"Solid Waste Management Committee"*** has been proposed here under:

1. Chairperson: Hon'ble Vice Chancellor/Registrar
2. Prof. Sunil Karforma, Dean (Sc), BU
3. Prof. Pradip Chottopadhyay, Dean (Arts, Commerce, Humanities etc.), BU
4. Dr. Sougata Chakrabarti, Finance Officer, BU/Nominee
5. Prof. Naba Kumar Mondal, Department of Environmental Science, BU (Jt Coordinator)
6. Dr. Arijit Chatterjee, Joint Director, LLL, BU (Jt Coordinator)
7. Dr. Dipendra Nath De, Estate Officer, BU
8. Mr. Nirmal Kumar Pal, Assistant Engineer (Civil), BU
9. Mr. Shyamapada Bannerjee, Superintendent, BU
10. Dr. Sumit Kr Hira, Dept. of Zoology, BU
11. Dr. Moni Baskey Sen, Dept. of Chemistry, BU
12. Prof. Abhigyan Dutta, Dept. of Physics, BU
13. Dr Sujit Roy, Dept. of Botany, BU
14. Dr. Somasri Dam, Dept. of Microbiology, BU
15. Dr. Indrani Chandra, Dept. of Biotechnology, BU
16. Mr. K. Sarkar, Dept. of Biotechnolay, BU
17. A PG Student Representative (Amarjit Ghosh)

In addition, a waste monitoring team with the representatives from faculty/staff/students may also be constructed to monitor/watch the waste disposal activities at the university campus.

The matter is hereby placed before the Hon'ble Vice Chancellor, The University of Burdwan for necessary approval and also to instruct future course of action.

Hon'ble VC Sir

may be approved

18/6/24

Meeting of NAAC sub-committee for Waste Disposal and management committee on 19.06.2024 at IQAC chamber.

Members present:

1. Prof. Apurba Ratan Ghosh, NAAC Coordinator, BU 19/6/24
2. Chairperson: Hon'ble Vice Chancellor/Registrar
3. Prof. Sunil Karforma, Dean (Sc), BU
4. Prof. Pradip Chottopadhyay, Dean (Arts, Commerce, Humanities etc.), BU
5. Dr. Sougata Chakrabarti, Finance Officer, BU/Nominee S. Chakrabarti 19/06/24
6. Prof. Naba Kumar Mondal, Department of Environmental Science, BU (Jt Coordinator) 19/06/24
7. Dr. Arijit Chatterjee, Joint Director, LLL, BU (Jt Coordinator) Chatterjee 19/6/2024
8. Dr. Dipendra Nath De, Estate Officer, BU
9. Mr. Nirmal Kumar Pal, Assistant Engineer (Civil), BU — 19/6/24
10. Mr. Shyamapada Bannerjee, Superintendent, BU
11. Dr. Sumit Kr Hira, Dept. of Zoology, BU — Sumit Kr Hira 19/6/24
12. Dr. Moni Baskey Sen, Dept. of Chemistry, BU Moni Baskey Sen 19/6/2
13. Prof. Abhigyan Dutta, Dept. of Physics, BU 19-06-2024
14. Dr Sujit Roy, Dept. of Botany, BU Sujit Roy 19.06.2024
15. Dr. Somasri Dam, Dept. of Microbiology, BU S Dam 19/06/2024
16. Dr. Indrani Chandra, Dept. of Biotechnology, BU 19/6/2024
17. Mr. K. Sarkar, Dept. of Biotechnolay, BU Kaushik Sarkar 19.06.2024
18. Amarjit Ghosh, PG Student Representative, BU Amarjit Ghosh 19.06.2024
19.

A NAAC Subcommittee (Solid Waste Disposal and Management (SWDM)) meeting was held at IQAC, B.U. on 19/06/2024 at 3.30 PM. The following items were discussed and resolutions were adopted:

Resolution:

1. At the outset Prof. A. R. Ghosh, NAAC Coordinator, BU discussed a few important issues related to solid waste generation and its current condition and disposal practices, *etc.*, and also addressed few important and valuable suggestions. All the suggestions were considered for future course of action.
2. A detailed discussion was held on biomedical wastes and their current disposal techniques. All the members unanimously accepted the seriousness and agreed to take special care on it. Finally, it was decided that every department should dispose their wastes in four distinct and specific vat *e.g.*, solid biodegradable, non-biodegradable, biomedical infectious and non-infectious, and chemical/hazardous wastes.
3. It was also resolved that three separate vats (two inside the Golapbag academic area and one at common accessible area nearer to Composite Building (Golapbag More) and Microbiology department.
4. Members also agreed to proceed with outsourcing for ~~the~~ collection and disposal of both solid and biomedical wastes.
5. A sensitization programme based on the segregation, collection, and storing of both solid and biomedical wastes will be organised very shortly.
6. A tender will be floated/called for solid and biomedical wastes collection and disposal.
7. Solid waste disposal and management committee will frame a standard operating procedure (SOP) related to SWDM.
8. Members also suggested for regular involvement ~~ization~~ of NSS Group of our University in this activity.
9. A few Flex containing mandates on handling and disposal of wastes like single use plastic bottles, tea cups, plastic packets, plates or cups of thermocols be installed.
10. A hoarding naming "Plastic-free Zone" will be installed in the Golapbag academic campus/Tarabag, *etc.*
11. The meeting ended with thanks.

19/06/24

বর্জ্য ব্যবস্থাপনায় কর্মশালা

সফিকুল ইসলাম (দুলাল), বর্ধমান: 'কঠিন বর্জ্য এবং ই-বর্জ্য ব্যবস্থাপনা' শীর্ষক একদিনের কর্মশালা অনুষ্ঠিত হল বর্ধমান বিশ্ববিদ্যালয়ে। বিশ্ববিদ্যালয়ের বিনয়কৃষ্ণ চৌধুরী গ্রামীণ প্রযুক্তি কেন্দ্র ও উদ্ভাবন, উদ্যোক্তা এবং দক্ষতা উন্নয়ন কেন্দ্র যৌথভাবে এই কর্মশালাটির আয়োজন করেছে। উপস্থিত ছিলেন অধ্যাপক অশিষ কুমার পানিগ্রাহী, অধ্যাপক সুনীল কুমার কারফর্মা, অধ্যাপক প্রদীপ কুমার চট্টোপাধ্যায়, অধ্যাপক কৌশিক ঘোষ, অধ্যাপক নবকুমার মণ্ডল, ড. অরিন্দিৎ চ্যাটার্জি।


Management of Solid Waste and e-

Annexure 6.3:

Monitoring of tree species

6.3 Biodiversity monitoring and fostering

Annexure: 6.3

The biodiversity of the Golapbag campus is carefully monitored and assessed by the university experts along with the experts from outside the university on regular basis. The revisions of the components are reflected in different previous publications. Namhata and Mukherjee (1990) enumerated ca 300 species under ca 88 families of angiosperms from the University Camus. Subsequently, Ganguly et al. (2018) have reported ca 120 tree species from this region and some of the species are even absent in the revised list of the tree species. *Carex indica* L. is one of such species under Cyperaceae, which was enumerated in 1990 from the campus now no longer exists when we enumerated in last few years indicates that some of the species are shifted its habitat from the Campus to other nearby places due to some unknown reasons. In contrary, species like *Aleurites moluccanus* (L.) Willd, a tree member of Euphorbiaceae, *Erioglossum edule* Blume, *Naringi crenulata* (Roxb.) D.H. Nicolson, *Prosopis juliflora* (Sw.) DC, *Citharexylum subserratum* Sw., *Berrya cordifolia* (Willd.) Burret, *Brownea coccinea* Jacq., *Cassia fistula* Linn., *Cyperus cyperoides* (L.) Kunze, *Corypha utan* Lam. (near relative of century palm, *Corypha taliera* Roxb.) were not recorded previously from the university campus and probably due to later plantation or invaders or were not diagnosed properly. But, in our very recent investigation (unpublished data) we have found several individuals of the species in naturalized condition which is the direct indication of changing floristic composition of the naturalized species. A group of faculty members of the department of Botany along with other experts are taking care of the floristic composition of the campus. Even, recently in searching of the reproductive morphological variation of *Markhamia stipulata* (Wall.) Seem. ex K.Schum., one of the associated halophytic species shows huge variation in terms of number of stamens in flowers even in single individual. On the other hand places opened due the fall down of the old tree individuals, new seedling and saplings are introduced as species turn over. In the last year several individuals of *Polyalthia longifolia* (Sonn.) Thwaites , *Brownea coccinea* etc. were planted, nurtured and monitored on regular basis. Couple of years back, one of the charismatic species *Victoria cruziana* A.D. Orb., Nymphaeaceae along with other important species was introduced in the Lahar/ Lake in front of the Department of Botany of the University along with other species like *Oroxylum indicum* (L.) Kurz,. One of the most slow growing species, *Jacquinia ruscifolia* Jacq. of Primulaceae (previously in Theophrastaceae, named after Father of Botany-Theophrastus) represented by only two individuals along with glory of Burma, Amherstia nobilis Wall., which is represented by only one individual tree are under the very close observation of the experts, though they are not producing viable offspring due to unknown reason. Thus, in depth research on the reproductive morphology and reproductive biology of the species is needed. Otherwise, most of the species are in good health and experts from the department of Botany and others are always monitoring both the health of the individual species as well as the green patches of the campus to make the

overall environment of the campus pollution free, ambient for study, health and research. Thus it will not be over stated to comment that The University of Burdwan is monitoring and maintaining its biodiversity well without hampering other components of the institution.

Annexure 6.5:

Biodiversity mapping (flora and fauna)

6.5 Biodiversity mapping:

Annexure: 6.5

Sl No.	Name of the place	Area	Type of plantation				Species name& quantity (Number of the individuals given in parenthesis)	Name of the Family	Total no. of species
			Indigenous plants	Medicinal plants	Ornamental plants	Exotic plants			
	GOLAP BAG CAMPUS						1. *Alangium salviifolium* (L.f.) Wangerin syn. *Alangium lamarckii* Thwaites (1)	Alangiaceae	
							2. *Mangifera indica* L. (22) 3. *Spondias dulcis* L. (2) 4. *Spondias pinnata* (L. f.) Kurz (1)	Anacardiaceae	
							5. *Polyalthia suberosa* (Roxburgh) Thwaites (1) 6. *Polyalthia longifolia* (Sonn.) Thwaites (387) 7. *Uvaria* sp. (1)	Annonaceae	
							8. *Alstonia scholaris* (L.) R. Br. (2) 9. *Amphineurion marginatum (Roxb.) D.J.Middleton* syn. *Aganosma marginata* (Roxb.) G.Don (many) 10. *Holarrhena pubescens* Wall. ex G.Don syn. *Holarrhena antidysenterica* (Roth) Wall. ex A.DC. (6) 11. *Plumeria obtusa* L. (3) 12. *Wrightia arborea* (Dennst.) Mabb. Syn. *Wrightia tomentosa* Roem. & Schult. (3)	Apocynaceae	

Sl No.	Name of the place	Area	Type of plantation				Species name& quantity (Number of the individuals given in parenthesis)	Name of the Family	Total no. of species
			Indigenous plants	Medicinal plants	Ornamental plants	Exotic plants			
							13. *Areca catechu* L. (3) 14. *Borassus flabellifer* L. (2) 15. *Corypha utan* Lam. Syn. *Corypha elata* Roxb. (4) 16. *Livistona chinensis* (Jacq.) R.Br. ex Mart. (1) 17. *Phoenix rupicola* T. Anderson(1) 18. *Phoenix sylvestris* (L.) Roxb. 19. *Roystonea regia* (Kunth) O.F.Cook (15)	Arecaceae/ Palmae	
							20. *Dolichandrone stipulata* (Wall.) Benth. et Hook. f. (32) 21. *Heterophragma* sp./ *H. adenophyllum* (1) 22. *Parmentiera cereifera* Seem. (1) 23. *Roseodendron donnell-smithii* (Rose) Miranda syn. *Tabebuia donnell-smithii* Rose Or *Tabebuia aurea* (Manso) Benth. & Hook. fil. ex S. Moore (1) 24. *Stereospermum* sp. (1) 25. *Tabebuia heterophylla* (DC.) Britt. Syn. *Tabebuia pentaphylla* Hemsl. (1)	Bignoniaceae	
							26. *Bixa orellana* L. (1)	Bixaceae	
							27. *Cordia myxa* L. Syn. *Ehretia glabra* Roth ex Roem. & Schult. (3) 28. *Ehretia laevis* Roxb. (1)	Boraginaceae	
							29. *Amherstia nobilis* Wall. (1) 30. *Brownea coccinea* Jacq. (1) 31. *Peltophorum pterocarpum* (DC.)	Leguminosae (Caesalpinioideae)	

Sl No.	Name of the place	Area	Type of plantation				Species name& quantity (Number of the individuals given in parenthesis)	Name of the Family	Total no. of species
			Indigenous plants	Medicinal plants	Ornamental plants	Exotic plants			
							K.Heyne (2) 32. *Senna multijuga* (Rich.) H.S.Irwin & Barneby syn. *Cassia multijuga* Rich. 33. *Senna siamea* (Lam.) Irwin et Barneby syn. *Cassia siamea* 34. *Senna spectabilis* (DC.) H.S.Irwin & Barneby syn. *Cassia spectabilis* DC./ Chamaecrista paniculata (Benth.) H.S.Irwin & Barneby *Syn.* Cassia paniculata Benth.		
							35. *Mesua ferrea* L.	Calophyllaceae	
							36. *Trema orientalis* (L.) Blume	Cannabaceae	
							37. *Casuarina equisetifolia* L.	Casuarinaceae	
							38. *Garcinia* sp.	Clusiaceae	
							39. *Terminalia bellirica* (Gaertn.) Roxb. Syn. *Terminalia belirica* (Gaertn.) Wall.	Combretaceae	
							40. *Mitragyna parvifolia* (Roxb.) Korth.	Rubiaceae	
							41. *Diospyros montana Roxb./ Diospyros chloroxylon* Roxb. Syn. *Diospyros tomentosa* Poir.	Ebenaceae	
							42. *Diospyros* sp.		
							43. *Diospyros discolor* Willd.		
							44. *Aleurites sp./ Aleurites moluccanus* (L.) Willd.	Euphorbiaceae	
							45. *Mallotus nudiflorus (L.)* Kulju &		

Sl No.	Name of the place	Area	Type of plantation				Species name& quantity (Number of the individuals given in parenthesis)	Name of the Family	Total no. of species
			Indigenous plants	Medicinal plants	Ornamental plants	Exotic plants			
							Welzen Syn. *Trewia nudiflora* L. *Mallotus* sp.		
							46. *Putranjiva roxburghii* Wall.		
							47. *Suregada multiflora* (A.Juss.) Baill. Syn. *Gelonium multiflorum* A. Juss. *Suregada multiflora* (A.Juss.) Baill. Male plant		
							48. *Pterocarpus marsupium* Roxb. *Syn. Pterocarpus marsupium* subsp. acuminatus (Prain) Thoth.	Fabaceae/Leguminosae	
							49. *Litsea glutinosa* (Lour.) C. B. Rob.	Lauraceae	
							50. *Barringtonia acutangula* (L.) Gaertn. 51. *Couroupita guianensis* Aubl.	Lecythidaceae	
							52. *Acacia auriculiformis* Benth. Syn. *Racosperma auriculiforme* (Benth.) Pedley 53. *Butea monosperma* (Lam.) Taub. 54. *Cassia fistula* L. 55. *Dalbergia lanceolaria* L.f. 56. *Gliricidia maculata* (Humb., Bonpl. & Kunth) Steud. / *Gliricidia sepium* (Jacq.) Walp. 57. *Pongamia pinnata*(L.) Pierre 58. *Prosopis juliflora* (Sw.) DC. 59. *Saraca asoca* (Roxb.) Willd. 60. *Tamarindus indica* L.	Leguminosae	

Sl No.	Name of the place	Area	Type of plantation				Species name& quantity (Number of the individuals given in parenthesis)	Name of the Family	Total no. of species
			Indigenous plants	Medicinal plants	Ornamental plants	Exotic plants			
							61. *Lagerstroemia speciosa* (L.) Pers.	Lythraceae	
							62. *Magnolia hodgsonii* (Hook.f. & Thomson) H.Keng syn. *Talauma hodgsonii* Hook.f. & Thomson 63. Michelia champaca L. syn. *Magnolia champaca* (L.) Baill. ex Pierre	Magnoliaceae	
							64. Berrya cordifolia (Willd.) Burret Syn. *Berrya ammonilla* Roxb.	Malvaceae/ Tiliaceae	
							65. *Grewia asiatica* L.	Malvaceae	
							66. *Sterculia foetida* L	Malvaceae/ Sterculiaceae	
							67. *Memecylon umbellatum* Brum. f.	Melastomaceae	
							68. *Aphanamixis polystachya* (Wall.) R.Parker 69. *Aphanamixis polystachya* (Wall.) R.Parker 70. *Melia azedarach* L. 71. *Swietenia macrophylla* King. 72. *Swietenia mahagoni* (L.) Jacq.	Meliaceae	
							73. *Albizia lebbeck* (L.) Benth. 74. *Albizia saman* (Jacq.) Merr. Syn. *Samanea saman* (Jacq.) Merr.	Mimosoideae/ Leguminosae	
							75. *Artocarpus heterophyllus* Lam. 76. *Artocarpus lacucha* Buchanan-Hamilton ex D. Don *Syn. Artocarpus lakoocha* Roxb. 77. *Ficus benghalensis* L. 78. *Ficus bengalensis, Mimusops elengi,*	Moraceae	

Sl No.	Name of the place	Area	Type of plantation				Species name& quantity (Number of the individuals given in parenthesis)	Name of the Family	Total no. of species
			Indigenous plants	Medicinal plants	Ornamental plants	Exotic plants			
							Gelonium Sp., and *Litsea Glutinosa, Putranjiva roxverjii* Wall. 79. *Ficus racemosa* L. syn. *Ficus glomerata* Roxb. 80. *Ficus religiosa/ F. benghalensis* 81. *Streblus asper* Lour.	(Moraceae, Sapotaceae, Euphorbiaceae, Lauraceae, Euphorbiaceae)	
							82. *Eucalyptus globusus* Labill. 83. Syzygium aqueum (Burm.f.) Alston 84. *Syzygium cumini* (L.) Skeels. 85. *Syzygium jambos* (L.) Alston	Myrtaceae	
							86. *Ochna squarrosa* L./ *Ochna jabotapitta* Vell./ *Ochna jabotapita* L.	Ochnaceae	
							87. *Averrhoa carambola* L. Syn. *Averrhoa acutangula* Stokes	Oxalidaceae	
							88. Erythrina variegata L. syn. *Erythrina indica* Lam.	Papilionoideae/ Leguminosae	
							89. *Bridelia retusa* (L.)A.Juss.	Phyllanthaceae	
							90. Ziziphus jujuba Mill. Syn. *Ziziphus mauritiama* Lam.	Rhamnaceae	
							91. *Carallia brachiata* (Lour.) Merr.	Rhizophoracea e	
							92. *Ixora pavetta* Andr. Syn. *Ixora arborea* Roxb. ex Sm. 93. *Mitragyna parvifolia* (Roxb.) Korth. 94. *Morinda tomentosa* B.Heyne ex Roth 95. *Neolamarckia cadamba* (Roxb.)	Rubiaceae	

Sl No.	Name of the place	Area	Type of plantation				Species name& quantity (Number of the individuals given in parenthesis)	Name of the Family	Total no. of species
			Indigenous plants	Medicinal plants	Ornamental plants	Exotic plants			
							Bosser		
							96. *Aegle mermelos* (L.) Correa 97. *Citrus maxima* (Burm. f.) Osbeck 98. *Murraya paniculata (L.)* Jacq. Syn. *Murayya exotica* L.	Rutaceae	
							99. *Erioglossum edule* Blume syn. *Sapindus edulis* Aiton *Erioglossum edule* Blume 100. *Filicium decipiens* (Wight & Arn.) Thwaites 101. *Litchi chinensis* Sonn. 102. *Schleichera oleosa* (lour.)Merr. 103. *Sapindus mukorossi* Gaertn.	Sapindaceae	
							104. *Mimusops elengi* L. 105. *Manilkara zapota* (L.) P.Royen syn. *Manilkara achras* (Mill.) Fosberg syn. *Sapota achras* Mill. 106. *Malinkara hexandra* (Roxb.) Dubard 107. *Madhuca longifolia* var. *latifolia* (Roxb.)A.Chev. Syn. *Madhuca indica* J.F.Gmel	Sapotaceae	
							108. *Ailanthus excelsa* Roxb.	Simaroubaceae	
							109. *Kleinhovia hospita* L. *Syn. Cattimarus hospitus* (L.) Kuntze 110. *Pterospermum acerifolium*(L.)Willd. 111. *Pterospermum acerifolium*(L.)Willd.,	Sterculiaceae	

Sl No.	Name of the place	Area	Type of plantation				Species name& quantity (Number of the individuals given in parenthesis)	Name of the Family	Total no. of species
			Indigenous plants	Medicinal plants	Ornamental plants	Exotic plants			
							112. *Pterospermum xylocarpum* (Gaertn.) Oken syn. *Pterospermum xylocarpum* (Gaertn.) Santapau & Wagh 113. *Pterygota alata* (Roxb.) R.Br. Syn. *Sterculia alata* Roxb. 114. *Sterculia foetida* L.		
							115. *Symplocos racemosa* Roxb./*Elaeocarpus floribundus* Blume	Symplococaceae Elaeocarpaceae	
							116. *Trema orientalis*(L.) Bl. 117. *Holoptelea integrifolia* Planch. Syn. *Ulmus integrifolia* Roxb.	Ulmaceae/ Cannabaceae Ulmaceae	
							118. *Citharexylum spinosum* L. Syn. *Citharexylum subserratum* Sw. 119. *Tectona grandis* L.f.	Verbanaceae	

6.6 Records of Plantation programmes (work in progress):

Sl No.	Programme conducted	Date of functioning	No. of tree planted	Present status of the species	Documentation (if any)	No. of beneficiaries
	One Student one Plant' Programme every year					

	Planted on Biodiversity day, 2016		1. *Couroupita guianensis* Aubl. 2. *Tabebuia heterophylla* (DC.) Britton 3. *Theobroma cacao* L. 4. *Syzygium aromaticum* (L.) Merrill & Perry 5. *Pimenta dioica* (L.) Meer. 6. *Mimusops elengi* L. 7. *Mesua ferrea* L. 8. *Aleurites moluccanus* (L.) Willd. 9. *Brownea coccinea* Jacq. 10. *Putranjiva roxburghii* Wall. 11. *Bentinckia nicobarica* (Kurz) Becc. 12. *Roystonea regia* (Kunth) O.F.Cook] 13. *Caryota urens* L. 14. *Ixora coccinea* L 15. *Cycas circinalis* L.			
		(Planted in 2017)	Lemon, Guava pear, jackfruits, jamun, coco, Kaju, Golapjam, Falsa, Safeda, Kamranga, Karamcha, Naspati, Bedana, Plum (Kul), Banana, Tamarind			Our students are getting the benefits of fruits trees
2019	Krishnasayar Eco-Garden	05.06.2019	1. *Citronella* 2. Palms [Foxtail palm (*Wodyetia bifurcata*), 3. Fishtail palm (*Caryota urens*) & 4. Royal palm (*Roystonea regia*)] were			

			planted in avenues of the park. 5. Flowering trees like *Spathodea campanulata*, 6. *Cassia nodosa*, 7. *Cassia javanica*, 8. *Cassia renigera*, 9. *Tabebuia chrysantha etc.*, 10. Betel nut (*Areca catechu*), 11. Coconut (*Cocos nucifera*), 12. Mango (*Mangifera indica*) (over varieties), 13. Amloki (*Phyllanthus emblica*), 14. Several timber plants like Mahogini (*Swietenia mahogany*), 15. West Indian mahogany (*Swietenia macrophylla*), 16. Gamar (*Gmelina arborea*), 17. Sal (*Shorea robusta*), 18. Siris (*Albizia lebbeck*), 19. Kalo Siris (*Albizia saman*) 20. Rudraksha (*Elaeocarpus ganitrus*), 21. Naglingam (*Couroupita* guianensis) 22. Nagkeshar (*Mesua ferrea*)			
	Golapbag Campus	05.06.2019	*1. Polyalthia longifolia* were newly planted in the main avenue of Golapbag. *2.* New *Swietenia mahogany* plants were planted in the gaps of Mahogany Avenue. 3. *3.* Flowering plants like *Spathodea campanulata*, *4. Jacaranda mimosifolia*, *5. Oroxylum indicum*, *6. Mesua ferrea*, *7. Couroupita guianensis*, *8. Nyctanthes arbour-tristis*, *9. Grevillea robusta*, *10. Cassia nodosa, etc.*, were planted for beautification and diversity as well. *11.* Fruit plants like *Psidium guajava*,			

			12. *Mangifera indica*, 13. *Syzygium jambos*, 14. The banks of moat were covered with patches of *Citronella* grass. 15. Inside avenues were redesigned with Foxtail palm (*Wodyetia bifurcata)*, 16. *Tabebuia argentea*, 17. Over 500 mango plants belonging to 50 varieties and 18. 120 timber plants like *Tectona grandis*, 19. *Shorea robusta*, 20. *Gmelina arborea*, 21. *Swietenea macrophylla* 22. , *Swietenia mahogany*, 23. *Jacaranda mimosifolia*, 24.			
	Tarabag Campus	05.06.2019	1. *Delonix regia*, 2. *Peltophorum* sp., 3. *Brownea coccinea*, 4. *Jacaranda mimosifolia*, 5. *Cassia javanica*, 6. *Cassia nodosa*, 7. *Cassia renigera*, 8. *Lagerstroemia flos-reginae*, 9. *Lagerstroemia speciosa*, 10. *Mimusops elengi*, 11. *Bauhinia variegata*, 12. *Plumeria* sp., 13. Different type of fruit plants like *Mangifera indica*, 14. *Psidium guajava*, 15. *Syzyzgium jambos*, 16. *Litchi chinensis*, 17. *Dillenia indica*			
	Anand bag	05.06.2019	1. *Cocos nucifera*, 2. *Areca* sp., 3. *Averrhoa carambola*, 4. *Musa* sp. (several varieties), 5. *Citrus* fruits (several varieties)			

			Including avenue trees.			
	Abhay Kanan	**05.06.2019**	**Besides avenue trees we have plants many fruit trees as mentioned above**			
	World Environment Day, 2020	05.06.2020	**1. Debdaru (*Polyalthia longifolia*) 2. Drooping Debdaru (*Polyalthia pedulifolia*), 3. Coconut (*Cocos nucifera*), 4. Mango (*Mangifera indica*), 5. Kathal (*Artocapus heterophyllus*), 6. Lichi (*Litchi chinensis*), 7. Amloki (*Phyllanthus emblica),* 8. Mahogini (*Swietenia mahogany*), 9. West Indian mahogany (*Swietenia macrophylla*), 10. Gamar (*Gmelina arborea*), *11.* Sal (*Shorea robusta*), *12.* Siris (*Albizia lebbeck*), 13. Kalo Siris (*Albizia saman*), 14. Naglingam (*Couroupita* guianensis)**	**1. Mango, moringa, papaya, and banana trees that are producing food and fruit within 8-10 months of planting. 2. Lemon, guava, pear, jackfruits, jamun, coco, Kaju, Golapjam, Falsa, Safeda, Kamranga, Karamcha, Naspati, Bedana, Plum (Kul), Banana, Tamarind (Planted in 20217)**		Our students are getting the benefits of fruits trees
	05.06.2021……					
	05.06.2022……					
	05.06.2023……					
	23.03.204 (On the eve of 2nd Botanical Congress and National Seminar in Botany		**1. Xylocarpus granatum.. 2. Xylocarpus mekongensis… 3. Heritiera fomes… 4. Bruguiera gymnorrhiza; 5.**			
	05.06.2024					
	Seed Research Farm [(CRSMF(2016-2021)]	Throughout the year	Other germplasm introduced and maintained in the Seed Research Farm (CRSMF), The University of Burdwan from 2016-2021			
			1. Paddy germplasm Varieties from different sources* A. Traditional Rice varieties: Adansilpa, Asinlaya, Badsha, Bahurupi, Banskati, Bharati, Bhimsal, Bhudeb, Black-rice,			Local people, farmers of Burdwan District and surrourding

			Champakhusi, Chandrakanta, Chandrakanti, Chatuimukhi, Dadkhani, Dadsal, Danaguri, Dangapatani, Dharansal, Dudhkalam, Dudheswar, Fulpagri, Gandheswari, Gangajali, Gokulsal, Jaladhi, Jhulur, Kabirajsal, Kartiksal, Kalma, Kalamkati, Kalobhat, Kalobora, Kalo Gandheswari, Kalobyar, Kalonunia, Kalma, Kanakchur, Katiksal, Kataribhog, Lal Dudheswar, Langalmuthi, Lal kauka, Lokdisal, Lakhindar, Mashuri, Medhi, Mugisal, Murkimala, Nikunja, Nugem, Nugenbaro, Nc-kalma, Pankhiraj, Panati, Patnai-23, Purnendu, Raghusal, Rupsal, Sabitri, Sankarsal, Satia, Sindurmukhi, Sitasal, Sonalu, Sorunagra, Sukhsal, Talmugur, Tusli mukul, Valki, and Vadisal etc. (71 varieties). **B. Traditional Aromatic Rice Varieties:** Badsabhog, Gandheswari, Gopalbhog, Gobindobhog, Jamainadu, Krishnabhog, Maliaphulo, Radhatilak, Randhunipagol, Sitabhog, Tulaipanji, and Tulsibhog etc. (12 varieties).			areas
			2. High Yielding Rice varieties: GB-1, GB-3, IET 4094 (Khitish) , IET 4786 (Satabdi), IET-9947 (Lalat), IET-22066 (Ajit), IR-36, MTU 1001(Vijeta), MTU 1010 (Kottondora Sannulu), MTU 1121 (Sri Dhruti), MTU- 1153 (Chandra), MTU-1194, MTU-1210, MTU-1229, MTU 7029 (Lal Swarna), Pratiksha, Rajendra Masuri, Rani, Sahabagi, and Swarna Sub-1, etc. (20varieties).			
			3. Pulses and oil seeds: Mustard : B-9 (Binoy), B-54 (Agrani) Lentil-Asha, Maitree Moong- Bireswar			
			4. Potato: Kufri Jyoti, Kufri Chandramukhi, Kufri Himalini			

			5. **Mango germplasm:** We have established a germplasm conservatory of "Mango". In the mango conservatory (Amra Kanan) we already have introduced following 60 varieties of Mango: Albina, Alfanso, Alfanso (Ratnagiri variety), Aman Dasehri, Amrapali, Anaras, Banana Mango, Blue mango, Bhastara, Bira, Baisakhi, Bimli, Biswanath, Black Mango, Bombai, Cartimon, Champa, Chandan Khosa, Chatterjee, Chausa, Dasehri, Dhubani, Fazli, Golapkhas, Hapus, Himsagar, Jambo, Jardalu, Jharjhari, Kalapahar, Katamisti, Kesar, Kg Mango, Kishenbhog, Kohitoor, Kuija, Langra, Madhugulguli, Maharaj, Mallika, Megh Lonthon, Michirdana, Mohanbhog, Molamjam, Motichur, Neelam, Palmar, Piyarafuli, Pusa-Surya, Pusa-Arunima, Rajbhog, Rani, Ratna, Red Mango, Sadulla, Safeda, Sarenga, Sarikhas, Sweet Mango, Thai-Dwarf, Thai-Long, and Subarnarehka, etc. Over 400 plants planted in CRSMF & different Locations of The University of Burdwan in last five years)			
			6. **Coconut germplasm:** Varieties: Chinnangi, West Indian Tall, Ganga Bandham, Hazari. Over 400 plants planted in different location of the university			
			7. **Banana Germplasm:** Varieties: Champa, Kathali, Singapuri, G-9, Red Banana (Two varieties). Maintained at CRSMF			
			8. **Other fruit plants:** Amloki, Haritoki, Bahera, Passion fruit, Pesta, Jackfruit, Sabeda, Mahua, Jamrul, Jam, Phalsa, Guava, Plum, Litchi (Five varieties), Golapjam, Dragon fruit, Ata, Nona, Apple, Musambi, Chalta, Bedana, Papaya, Kamranga, Jalpai, Ansphal, Karamcha, Cherry, Avocado, Pear;			

			5 varieties of lemon, Grape.			

Annexure 6.6:

Records of plantation programmes

6.6 Records of Plantation programmes

Annexure: 6.6

Sl No.	Programme conducted	Date of functioning	No. of tree planted	Present status of the species	Documentation (if any)	No. of beneficiaries
	One Student one Plant' Programme every year					
	Planted on Biodiversity day, 2016		1. *Couroupita guianensis* Aubl. 2. *Tabebuia heterophylla* (DC.) Britton 3. *Theobroma cacao* L. 4. *Syzygium aromaticum* (L.) Merrill & Perry 5. *Pimenta dioica* (L.) Meer. 6. *Mimusops elengi* L. 7. *Mesua ferrea* L. 8. *Aleurites moluccanus* (L.) Willd. 9. *Brownea coccinea* Jacq. 10. *Putranjiva roxburghii* Wall. 11. *Bentinckia nicobarica* (Kurz) Becc. 12. *Roystonea regia* (Kunth) O.F.Cook] 13. *Caryota urens* L. 14. *Ixora coccinea* L 15. *Cycas circinalis* L.			
		(Planted in 2017)	**Lemon, Guava pear, jackfruits, jamun, coco, Kaju, Golapjam, Falsa, Safeda, Kamranga,**			Our students are getting the benefits of fruits trees

			Karamcha, **Naspati,** **Bedana,** **Plum (Kul),** **Banana,** **Tamarind**			
2019	**Krishnasayar Eco-Garden**	**05.06.2019**	**1. *Citronella*** **2. Palms [Foxtail palm (*Wodyetia bifurcata*),** **3. Fishtail palm (*Caryota urens*) &** **4. Royal palm (*Roystonea regia*)] were planted in avenues of the park.** **5. Flowering trees like *Spathodea campanulata*,** **6. *Cassia nodosa*,** **7. *Cassia javanica*,** **8. *Cassia renigera*,** **9. *Tabebuia chrysantha etc.*,** **10. Betel nut (*Areca catechu*),** **11. Coconut (*Cocos nucifera*),** **12. Mango (*Mangifera indica*) (over varieties),** **13. Amloki (*Phyllanthus emblica*),** **14. Several timber plants like Mahogini (*Swietenia mahogany*),** **15. West Indian mahogany (*Swietenia macrophylla*),** **16. Gamar (*Gmelina arborea*),** **17. Sal (*Shorea robusta*),** **18. Siris (*Albizia lebbeck*),** **19. Kalo Siris (*Albizia saman*)** **20. Rudraksha (*Elaeocarpus ganitrus*),** **21. Naglingam (*Couroupita* guianensis)** **22. Nagkeshar (*Mesua ferrea*)**			
	Golapbag Campus	**05.06.2019**	***1. Polyalthia longifolia* were newly planted in the main avenue of Golapbag.**			

			2. New *Swietenia mahogany* plants were planted in the gaps of Mahogany Avenue. 3. 3. Flowering plants like *Spathodea campanulata*, 4. *Jacaranda mimosifolia*, 5. *Oroxylum indicum*, 6. *Mesua ferrea*, 7. *Couroupita guianensis*, 8. *Nyctanthes arbour-tristis*, 9. *Grevillea robusta*, 10. *Cassia nodosa*, *etc.*, were planted for beautification and diversity as well. 11. Fruit plants like *Psidium guajava*, 12. *Mangifera indica*, 13. *Syzygium jambos*, 14. The banks of moat were covered with patches of *Citronella* grass. 15. Inside avenues were redesigned with Foxtail palm (*Wodyetia bifurcata)*, 16. *Tabebuia argentea*, 17. Over 500 mango plants belonging to 50 varieties and 18. 120 timber plants like *Tectona grandis*, 19. *Shorea robusta*, 20. *Gmelina arborea*, 21. *Swietenea macrophylla* 22. , *Swietenia mahogany*, 23. *Jacaranda mimosifolia*, 24.			
	Tarabag Campus	**05.06.2019**	1. *Delonix regia*, 2. *Peltophorum* sp., 3. *Brownea coccinea*, 4. *Jacaranda mimosifolia*, 5. *Cassia javanica*, 6. *Cassia nodosa*, 7. *Cassia renigera*, 8. *Lagerstroemia flos-reginae*,			

			9. *Lagerstroemia speciosa*, 10. *Mimusops elengi*, 11. *Bauhinia variegata*, 12. *Plumeria* sp., 13. Different type of fruit plants like *Mangifera indica*, 14. *Psidium guajava*, 15. *Syzyzgium jambos*, 16. *Litchi chinensis*, 17. *Dillenia indica*			
	Anand bag	**05.06.2019**	1. *Cocos nucifera*, 2. *Areca* sp., 3. *Averrhoa carambola*, 4. *Musa* sp. (several varieties), 5. *Citrus* fruits (several varieties) Including avenue trees.			
	Abhay Kanan	**05.06.2019**	Besides avenue trees we have plants many fruit trees as mentioned above			
	World Environment Day, 2020	05.06.2020	1. Debdaru (*Polyalthia longifolia*) 2. Drooping Debdaru (*Polyalthia pedulifolia*), 3. Coconut (*Cocos nucifera*), 4. Mango (*Mangifera indica*), 5. Kathal (*Artocapus heterophyllus*), 6. Lichi (*Litchi chinensis*), 7. Amloki (*Phyllanthus emblica*), 8. Mahogini (*Swietenia mahogany*), 9. West Indian mahogany (*Swietenia macrophylla*), 10. Gamar (*Gmelina arborea*), 11. Sal (*Shorea robusta*), 12. Siris (*Albizia lebbeck*), 13. Kalo Siris (*Albizia saman*), 14. Naglingam (*Couroupita* guianensis)	1. Mango, moringa, papaya, and banana trees that are producing food and fruit within 8-10 months of planting. 2. Lemon, guava, pear, jackfruits, jamun, coco, Kaju, Golapjam, Falsa, Safeda, Kamranga, Karamcha, Naspati, Bedana, Plum (Kul), Banana, Tamarind (Planted in 20217)		Our students are getting the benefits of fruits trees
	05.06.2021……					
	05.06.2022……					

	05.06.2023…… .					
	23.03.204 (On the eve of 2nd Botanical Congress and National Seminar in Botany		**1. Xylocarpus granatum..** **2. Xylocarpus mekongensis…** **3. Heritiera fomes…** **4. Bruguiera gymnorrhiza;** **5.**			
	05.06.2024					
	Seed Research Farm [(CRSMF(2016-2021)]	Throughou t the year	Other germplasm introduced and maintained in the Seed Research Farm (CRSMF), The University of Burdwan from 2016-2021			
			1. Paddy germplasm Varieties from different sources* **A. Traditional Rice varieties**: Adansilpa, Asinlaya, Badsha, Bahurupi, Banskati, Bharati, Bhimsal, Bhudeb, Black-rice, Champakhusi, Chandrakanta, Chandrakanti, Chatuimukhi, Dadkhani, Dadsal, Danaguri, Dangapatani, Dharansal, Dudhkalam, Dudheswar, Fulpagri, Gandheswari, Gangajali, Gokulsal, Jaladhi, Jhulur, Kabirajsal, Kartiksal, Kalma, Kalamkati, Kalobhat, Kalobora, Kalo Gandheswari, Kalobyar, Kalonunia, Kalma, Kanakchur, Katiksal, Kataribhog, Lal Dudheswar, Langalmuthi, Lal kauka, Lokdisal, Lakhindar, Mashuri, Medhi, Mugisal, Murkimala, Nikunja, Nugem, Nugenbaro, Nc-kalma, Pankhiraj, Panati, Patnai-23, Purnendu, Raghusal, Rupsal, Sabitri, Sankarsal, Satia, Sindurmukhi, Sitasal, Sonalu, Sorunagra, Sukhsal, Talmugur, Tusli mukul, Valki, and Vadisal etc. (71 varieties). **B. Traditional Aromatic Rice Varieties:**			Local people, farmers of Burdwan District and surrourding areas

			Badsabhog, Gandheswari, Gopalbhog, Gobindobhog, Jamainadu, Krishnabhog, Maliaphulo, Radhatilak, Randhunipagol, Sitabhog, Tulaipanji, and Tulsibhog etc. (12 varieties).			
			2. High Yielding Rice varieties: GB-1, GB-3, IET 4094 (Khitish) , IET 4786 (Satabdi), IET-9947 (Lalat), IET-22066 (Ajit), IR-36, MTU 1001(Vijeta), MTU 1010 (Kottondora Sannulu), MTU 1121 (Sri Dhruti), MTU- 1153 (Chandra), MTU-1194, MTU-1210, MTU-1229, MTU 7029 (Lal Swarna), Pratiksha, Rajendra Masuri, Rani, Sahabagi, and Swarna Sub-1, etc. (20varieties).			
			3. Pulses and oil seeds: Mustard : B-9 (Binoy), B-54 (Agrani) Lentil-Asha, Maitree Moong- Bireswar			
			4. Potato: Kufri Jyoti, Kufri Chandramukhi, Kufri Himalini			
			5. Mango germplasm: We have established a germplasm conservatory of "Mango". In the mango conservatory (Amra Kanan) we already have introduced following 60 varieties of Mango: Albina, Alfanso, Alfanso (Ratnagiri variety), Aman Dasehri, Amrapali, Anaras, Banana Mango, Blue mango, Bhastara, Bira, Baisakhi, Bimli, Biswanath, Black Mango, Bombai, Cartimon, Champa, Chandan Khosa, Chatterjee, Chausa, Dasehri, Dhubani, Fazli, Golapkhas, Hapus, Himsagar, Jambo, Jardalu, Jharjhari, Kalapahar, Katamisti, Kesar, Kg Mango, Kishenbhog, Kohitoor, Kuija, Langra, Madhugulguli, Maharaj, Mallika, Megh Lonthon, Michirdana, Mohanbhog, Molamjam, Motichur, Neelam, Palmar, Piyarafuli, Pusa-Surya,			

			Pusa-Arunima, Rajbhog, Rani, Ratna, Red Mango, Sadulla, Safeda, Sarenga, Sarikhas, Sweet Mango, Thai-Dwarf, Thai-Long, and Subarnarekha, etc. Over 400 plants planted in CRSMF & different Locations of The University of Burdwan in last five years)			
			6. **Coconut germplasm:** Varieties: Chinnangi, West Indian Tall, Ganga Bandham, Hazari. Over 400 plants planted in different location of the university			
			7. **Banana Germplasm:** Varieties: Champa, Kathali, Singapuri, G-9, Red Banana (Two varieties). Maintained at CRSMF			
			8. **Other fruit plants:** Amloki, Haritoki, Bahera, Passion fruit, Pesta, Jackfruit, Sabeda, Mahua, Jamrul, Jam, Phalsa, Guava, Plum, Litchi (Five varieties), Golapjam, Dragon fruit, Ata, Nona, Apple, Musambi, Chalta, Bedana, Papaya, Kamranga, Jalpai, Ansphal, Karamcha, Cherry, Avocado, Pear; 5 varieties of lemon, Grape.			


Swami Vivekananda