

BEST PRACTICES

Two best practices which have contributed to better academic and administrative functioning of the university

Best Practice 1: Fostering Inclusive Participation and Empowering Communities

The university, through three of its units, the P.N. Bhaduri Crop Research and Seed Multiplication Farm (PNBCRSMF), Lifelong Learning Centre, and the Binoy Krishna Choudhury Rural Technology Centre (BKCRTC) aims to foster and promote the participation of university staff and people from outside the university. This serves to strengthen the university community and the communities living nearby.

Objectives of Best Practice 1:

- a. To encourage field-based research related to these projects
- b. To continue to run successful seed programmes for paddy, mustard, gram, lentil, and moong at the PNBCRSMF
- c. To improve the quality of life through enhancement of education, knowledge, and life skill development
- d. To organize workshops that provide hands-on training in areas such as agriculture, aquaculture, and management of solid waste and e-waste

The Context for Best Practice 1:

The CRSMF of Burdwan University, a crop research farm with an area of 10.5 hectares of cultivated land, is situated on the Tarabag Campus. The famous geneticist and plant breeder, Professor Param Nath Bhaduri, FNA, established the farm in 1965.

The Department of Lifelong Learning, earlier known as the Department of Adult Continuing Education and Extension (ACE & E), started functioning in 1980. Initially, it received total financial assistance and staff support from the UGC, New Delhi. The Population Education Resource Centre (PERC) was added to this department in 1986, with financial aid from UGC-UNFPA. The Yoga Centre of the University was incorporated in this department in 2001. In 2010, the ACE & E and PERC were jointly renamed the Department of Lifelong Learning.

The Binoy Krishna Choudhury Rural Technology Centre (RTC) seeks to provide hands-on training in agriculture, aquaculture, and solid waste and e-waste management.

The Practice (Best Practice 1):

From the beginning, the CRSMF of Burdwan University has been a site for research involving various university departments, and different organizations have funded it. It is significant that from 2002, in collaboration with the Department of Agriculture, Govt. of West Bengal, 'Foundation & Certified' seed programmes for paddy, mustard, gram, lentil,

and moong have been run successfully. The CRSMF seeks to conserve the germplasm of traditional rice cultivars and mangoes and promote research activities related to cereals, oils, seeds, pulses, and horticultural plants. Producing foundation and certified cereals, oil seeds, pulses and vegetables is another essential practice. The CRSMF organizes regular seminars and workshops to provide technical assistance, guidance, and advice to the local farmers regarding the scientific management of cereal, pulse, oils, and vegetable seed production in light of current developments in the agricultural scenario. The CRSMF also promotes using organic fertilizers such as vermicompost, biocompost, *Azolla*, blue-green algae, and eco-friendly fertilizers and encourages using bio-pesticides and eco-friendly pesticides. It is worth mentioning that the CRSMF provides organic vegetables to different communities and attempts to maintain the university's biodiversity resources through the planting of rare varieties of plants. This helps to support the fauna and microbial resources and rejuvenate the biodiversity of the campus.

The Department of Lifelong Learning conducts different need-based, job-oriented, independent, and collaborative teaching programmes for various categories of students irrespective of their sex, age, and academic qualification. Since its inception, this department has been functioning to extend the scope of lifelong learning, continuing education, and extension through the university system. The department's academic program is very flexible and specially designed for persons engaged in certain professions, in need of specialized training, and who are not usually entertained by the traditional academic programmes of the university.

The workshops organized by the Binoy Krishna Choudhury Rural Technology Centre (BKRTC) to provide hands-on training in agriculture, aquaculture, and management of solid waste and e-waste include lectures by eminent scientists and interactive sessions. Successful entrepreneurs also share their experiences and views on entrepreneurship development. Student participants are encouraged to utilize the opportunities for entrepreneurship development. Discussions are held on the basic concepts of entrepreneurship, the importance of professional education for entrepreneurship development, and the scope for entrepreneurship in organic agriculture and aquaculture.

Evidence of Success (Best Practice 1):

Four research projects on Crop Physiology & Phytochemistry, one on Greenhouse Gas Emissions and Carbon Sequestration, and three on plant-insect interaction were undertaken at CRSMF from 2018-2019 to 2023-2024. Fifty-six research papers/review articles were published. Seventeen Research Fellows from India and abroad obtained Ph.D degrees. Experimental outcomes at CRSMF produced forty-eight publications. Currently, the farm produces over 100 traditional rice cultivars. The average annual production of paddy seed between 2019-20 and 2023-24 has been 615.48 quintals, that of mustard seed has been 2.24 quintals, and that of potato seed has been 86.83 quintals. Several varieties of vegetables have been introduced.

Students, including retired persons, who had enrolled at the Centre for Lifelong Learning have submitted their feedback, saying that they have benefitted enormously from the classes.

The workshops and hands-on training organized by the Binoy Krishna Choudhury Rural Technology Centre (BKCRTC) have produced successful mushroom cultivation and fish farming entrepreneurs.

Best Practice 2: Preservation of Ecosystems and Sustainable Resource Management

The university attempts to preserve the ecosystem of the campus and its neighbouring areas and engages in sustainable resource management that benefits both the ecosystem and the university stakeholders. Serious efforts are made to preserve the Krishnasayar Eco garden and the *floor* or moat around the Golapbag campus and to ensure carbon neutrality and effective water resource management. Measuring the green cover on the campus with the aid of the Normalized Difference Vegetation Index (NDVI) is also among the university's significant priorities.

Objectives of Best Practice 2:

- a. To conserve the diversity of flora and fauna on the university campuses
- b. To ensure carbon neutrality / balance through carbon sequestration
- c. To promote and ensure the preservation of effective use of water bodies such as the one in Krishnasayar and the *lahar* or moat surrounding the Golapbag campus
- d. To propagate the cultivation of medicinal plants

The Context for Best Practice 2:

The sites such as Rajbati (Mehtab Manzil), Udaykanan, Krishnasayer, and Tarabag boast of some very old trees, large water bodies, lush greenery, and an abundance of flora and fauna preserve the ecosystem of the campus. The water bodies host several species of migratory birds in winter. The establishment in 1960 was converted into the University of Burdwan by legislation, courtesy of Dr. Bidhan Chandra Roy, former West Bengal Chief Minister. Of a total of 356 acres of campus area, there are 166.91 acres (46.82%) of open space. The green area on the campus is 103.06 acres (28.91%), and the total area comprising water bodies is 66.12 acres (18.55%). Twenty species of Bryophytes, twenty species of Pteridophytes, twenty species of Gymnosperms, and over four hundred species of Angiosperms are carefully preserved. The Institutional Biosafety Committee, formed in 2018, and the Institutional Green Committee (IGC), constituted in 2021, have conducted four and three meetings, respectively.

The Practice (Best Practice 2):

The university conducts awareness programmes for its staff regarding the preservation of the ecosystem on the campuses and sustainable management of natural resources. The Institutional Biosafety Committee has prepared and posted a Biosafety and Laboratory Disposal Guideline on the university website. The committee members have discussed the biosafety guidelines with faculty members, emphasizing the need to obey biosafety norms. In consultation with the local municipality and other stakeholders, this committee is planning different forms of waste disposal. The committee conducts awareness programs for faculty members and research scholars and involves students as volunteers in its “greening” programmes.

Lectures, seminars, and conferences constantly sensitize students to the use of medicinal plants. Plantation programmes are undertaken. Substantial efforts are made to manage natural resources and conserve animal and plant species. The university maintains a campus biodiversity register. The Estate Department looks after the cleanliness of the campus.

The university has a rainwater harvesting unit. Projects related to environmental issues, sponsored by national funding agencies and NGOs, have been undertaken. The university has a mechanism for disposing of plastic. The university has also been recognized as a “no-plastic zone.”

Developing greenery on the campus maintains carbon dioxide neutrality. The Department of Environmental Science has undertaken a carbon footprint analysis of the Golapbag campus. The carbon sequestration rate against emission on the Golapbag campus from using electricity, computers, and vehicles is 15,233.03 kg CO₂ per day. The University of Burdwan can boast of being the first in West Bengal and the fifth in India to initiate such a study. The various species of plants on the campus contribute significantly to maintaining carbon neutrality.

The university has an efficient hygiene water storage mechanism to minimize water loss during storage. It also has a mechanism for repairing water leakage. The drainage system is adequate. The university has a provision/ option for renewable and carbon-neutral electricity. Solar panels of 100 KVA installed in 2014-15 have been functioning.

The university has a biodegradable solid waste management system located in the Crop Research and Seed Multiplication Farm, which facilitates the segregation of waste materials. The university also organizes workshops, seminars, and conferences about handling recyclable waste. There is also a provision for liquid waste management, and the Department of Chemistry has installed a “hazardous liquid chemical waste management” facility.

Evidence of Success (Best Practice 2):

The plantation programmes on the campus have been successfully carried out. The university has undertaken programmes to plant fruit trees that attract birds, bees, etc. The university has a mechanism for reviewing periodical monitoring of tree species.

Management of biomedical and chemical waste and monitoring of research work involving biohazard issues are performed under the strict surveillance of the Institutional Biosafety Committee (IBSC, BU) chaired by the Hon'ble Vice-Chancellor. The IBSC has been entrusted with the task of monitoring the following: (i) decontamination and disposal, (ii) disposal methods, and (iii) disposal of hazardous chemicals.

Quantity of e-waste generated: 100 tonnes of e-waste are generated annually. On average, eighty-five cartridges are disposed of every year. Unused computers, printers, and electronic wastes are disposed of through authorized agents.

The University has successfully published the first Sustainability Report for the Financial Year 2023-2024. The carbon balance sheet in this report reveals that the institute's total carbon sequestration from plants is 11124.44 tonnes CO₂ eq. year⁻¹ and positive net sequestration is 10981.59 tonnes CO₂ eq. year⁻¹.