BATANGAS STATE UNIVERSITY
THE NATIONAL ENGINEERING UNIVERSITY

SUSTAINABILITY REPORT FY 2022

Magnifying blueprint for sustainability.

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Contents

About the University

Batangas State University is the Philippines' National Engineering University, by virtue of R.A. 11694, and is a Level IV State University. Regarded as the country's largest engineering university, BatStateU-The NEU is the first and thus far the only state university in the Philippines with engineering, IT, and computer science programs accredited by the Accreditation Board for Engineering and Technology (ABET) – Engineering Accreditation Commission and Computing Accreditation Commission.

Vision

A premier national university that develops leaders in the global knowledge economy.

Mission

A university committed to producing leaders by providing a 21st century learning environment through innovations in education, multidisciplinary research, and community and industry partnerships in order to nurture the spirit of nationhood, propel the national economy, and engage the world for sustainable development.

CORE VALUES

- Patriotism
- Service
- Integrity
- Resilience
- Excellence
- Faith

Profile

11

campuses

BatStateU-The NEU is composed of 11 campuses strategically located in the Province of Batangas.

156

programs offered

As the country's largest engineering in terms of enrollment and program offerings, BatStateU-The NEU provides quality education to students from 17 regions across the country.

2,596

faculty and staff

BatStateU-The NEU nurtures a thriving academic community, fostering excellence among its diverse faculty and staff. Emphasizing research, innovation, and collaboration, the university prioritizes continuous professional growth, creating a dynamic and enriching environment for all.

54,932

students

As a diverse and inclusive institution, BatStateU-The NEU offers a wide range of programs to students from various backgrounds, fostering quality education and meaningful learning experiences for all.

Batangas State University declared as the Philippines' National Engineering University

The Batangas State University has been declared as "The National Engineering University" by virtue of Republic Act No. 11694 enacted on April 11, 2022.

As the National Engineering University, Batangas State University is poised to provide a leadership role in shaping a new vision for engineering education in the country. Fortifying its service motto: "Leading Innovations, Transforming Lives", it will further strengthen and expand its already robust 46 degree programs to include an even wider range of fields in engineering at both the graduate and undergraduate levels. It will intensify efforts on producing the corps of advanced trained engineers and other professionals who can create leading edge solutions to the country's challenges through pioneering engineering programs such as aerospace engineering, biomedical engineering, transportation engineering, geological engineering, geodetic engineering, naval architecture and marine engineering, ceramics engineering, metallurgical engineering, materials engineering, earthquake engineering, energy engineering, engineering management, engineering education, and highly specialized fields in artificial intelligence, advance manufacturing, construction management, and data science and analytics. It will lead in creating the environment that engender the Filipino engineering experts and professionals of tomorrow with both local and global impacts.

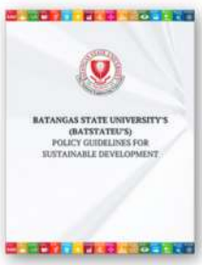
Since its founding 119 years ago, Batangas State University has preeminently led in producing the country's engineers both in quality and in providing access to engineering education to over 55,000 students from more than 40 provinces all over the country.

The University consistently ranks as the top-performing school in the mechanical engineering licensure examination and has, thus far, produced over 165 top notchers across the engineering disciplines. It has the highest number of ASEAN Engineers in the faculty roster among HEIs in the country. For quality and faculty diversity, it has engaged foreign academics and researchers in its roster of faculty. All of these have propelled the University's rise to national service, prominence, and recognition.

Sustainability Journey

2022

Ranked 4th (Philippines) and 351st (World) in the UI GreenMetric World University Rankings.



The Board of Regents approved on December 7, 2022 the BatStateU's Policy Guidelines for Sustainable Development.

2021

Creation and approval of Sustainability Plan 2022-2029.

The Board of Regents approved the establishment of the Center for Sustainable Development as well the BatStateU's Policy Guidelines for Sustainable Development.

2020

BANGON BATANGAS

With the eruption of the Taal Volcano, the Batangueño's resilience was tested that led to the mobilization of the University's ACTION Center and the Extension Service Office that supported displaced families through the Bangon Batangas Project.

2019

The 10 Year Strategic Plan was laid out with its pillars branded as BASICS - Brand of Excellence, Access, Social Relevance, Inclusive Innovation, Capacity, Sustainability.

2018

CORALS

Established the Verde Island Passage Center for Oceanographic Research and Aquatic Life (VIP Corals) which focuses on proactive research for the center of the center of marine biodiversity Aquatic Life Sciences (VIP Corals)

2017

ACTION CENTER

BatStateU established the Action Center which is focused on Disaster Risk Reduction and Management

World Ranking

4th in the Philippines and 351st most sustainable university in the world

Among the 1,050 participating universities around the globe, Batangas State University, The National Engineering University ranked 4th in the Philippines and 351st in the UI GreenMetric World University Ranking 2022, released December 12, 2022

First time to participate in the said ranking, BatStateU-The NEU triumphantly carried out all the 39 indicators in six different criteria namely: energy and climate change, waste, water, transportation, and education and research through the university's environmental commitment and initiatives.

Focusing on "Collective Actions for Transforming Sustainable Universities in the Post-Pandemic Time," this UI GreenMetric World University Rankings 2022 promotes green campus and environmental sustainability.

SDGs in the Governance

To solidify the university's commitment to the UN SDGs, the Central Administration, led by the University President, brought together key experts to started the development of comprehensive policies focusing on environmental sustainability, sustainable support for communities, and inclusive academic and workplace environment. This initiative started in November 2022 and will continue until 2023.

LIST OF POLICIES AND GUIDELINES

Environmental Sustainability

- Policy for Sustainable Land Resources Management
- Policy on Water Usage and Care
- Policy for Wildlife Protection and Conservation
- Policy for Green Building Design and Infrastructure of the University
- Policy for Energy Conservation, Tracking, and Efficiency Measures
- Policy for Green Procurement
- Policy on Minimization of the Use of Plastic and Disposable Items
- Policy on Waste Tracking and Management
- University Climate Change Action Plan

Sustainable Support to Communities

- Policy on the Access to University Facilities of External Agencies and Local Communities
- Policy for the Provision of Seed Capital Fund for Sustainable Livelihood of Communities
- Policy on the Procurement from Local Producers

Inclusive Academic Environment and Workplace

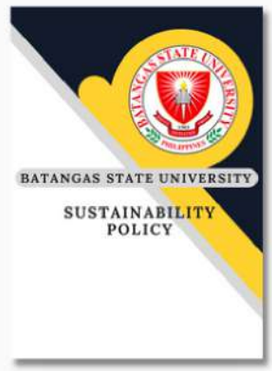
- Policy on Student Application and Admission Tracking
- Policy on Academic Advising
- Policy and Procedures on Student Financial Aid
- Policy on Food Security and Nutrition
- Policy and Programs on Mental Health for Students
- Policy on Disability Support Services
- Mental Health Policy and Programs in the Workplace
- Anti-Discrimination Policy (Both Students and Employees)
- Policy for Gender-Responsive Spaces and Services

SUSTAINABILITY POLICIES

10-YEAR STRATEGIC PLAN

The Batangas State University Strategic Plan 2019-2029 was developed based on key internal and external factors that influence and motivate the University to create transformative solutions that would address the needs of the academic community and pressing concerns of society. The goals and strategies of the ten-year plan are anchored on major drivers of development in the local, regional, national and global scales, including individuals, partners, organizations, standards and polices among others. The strategic drivers serve as University's motivating forces in helping transform the Philippines into a competitive nation that promotes sustainable development.

SUSTAINABILITY POLICY

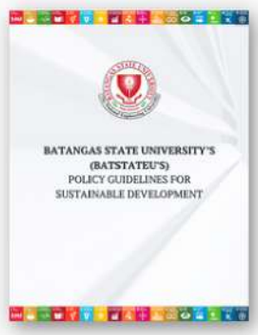


The Sustainability Policy underpins the University's commitment to sustainability in human, financial, and environmental context, and is integral to the Sustainability Plan. The policy focuses on environmental sustainability, especially on operational practices, but acknowledges that sustainability encompasses social and economic dimensions, which are the foci of other University policies. The policy includes prudent management of resources through an appropriate balance of resources and activity when setting goals and targets, considering its impact on our human, financial, and environmental resources.

SUSTAINABILITY PLAN

The Sustainability Plan is a strategic framework to guide and support delivery of the University's sustainability agenda. It covers the period 2022-2029 and is aligned with the University's Strategic Plan to ensure integration across the University. The University's Sustainability Plan is rooted in a vision that champions sustainability through active support for research, teaching, and practical initiatives in this domain. It seeks to attract faculty and students drawn to sustainability-focused education and research, while ensuring a secure and healthy environment in line with institutional policies. Embracing collaboration, the plan advocates sustainable management of university resources and aims to foster the growth of sustainable ideas not only within the university but also throughout the wider community.

POLICY GUIDELINES FOR SUSTAINABLE DEVELOPMENT



This policy guidelines is designed to aid University offices and operating units in formulating specific rules, regulations, policies, programs, projects, and activities that are consistent with and supportive of the Sustainable Development Goals (SDGs). The objectives of these guidelines include providing direction for creating policies in line with the SDGs, ensuring alignment of actions with global goals for implementers of plans, reaffirming the University's dedication and role in achieving the SDGs, and complementing existing policies and practices related to the SDGs, including those outlined in Republic Act (RA) No. 11694, the 10-year Strategic Plan, Sustainability Plan, and Sustainability Policy

CENTER FOR SUSTAINABLE DEVELOPMENT

The Batangas State University-The National Engineering University as a Higher Education Institution recognizes the importance of sustainable development practices through education, governance and management, collaboration and innovation. It emanates from programs, projects, and processes of the University.

Hence to continuously champion such fundamental actions, BatStateU-The NEU established the Center for Sustainable Development (CSD) in 2022 with the goal of supporting regional and global initiatives aimed at meeting the United Nations' 17 Sustainable Development Goals.

The primary responsibility of CSD is to ensure that sustainability is an essential component of university's core duties of instruction, research, innovation and extension services, as well as its general administrative and general support services functions.

Sustainability Centers

VIP CORALS

The Verde Island Passage Center for Oceanographic Research and Aquatic Life Sciences (VIP CORALS) was established in February 2018, following the approval of the University's Board of Regents Resolution No. 004, Series of 2018. It operates under the umbrella of Batangas State University – The National Engineering University. With a resolute vision, VIP CORALS aims to be at the forefront of understanding, conserving, and sustainably developing the rich marine resources within the Verde Island Passage.

EMU

The Environmental Management Unit (EMU) is in charged with the implementation of programs and activities to maintain a sustainable and eco-friendly campus. It is composed of the following: Materials Recovery Facility, Sewage Treatment Facility and Pollution Control Office.

In line with one of the University Strategic Plan 2019-2029's thematic areas, Sustainability, EMU ensures compliance of the University to all legal environmental requirements as prescribed by RA 9275, RA 8749, RA 9003, RA 6969, and PD 1586. More so, clients are provided with assistance on environmental issues and concerns to mitigate and control any potential risk to environment, health and safety, and public health.

ACTION CENTER

The BatStateU ACTION Center serves as a vital hub for various stakeholders, including community members, barangay leaders, local officials, disaster management professionals, researchers, and civil society organizations seeking assistance and knowledge to enhance their disaster preparedness and response capabilities. The center's primary objectives encompass safeguarding economic achievements through education and research, actively promoting community safety and resilience through education, training, and innovative research, raising awareness among local leaders and communities about natural hazards, and disseminating information regarding potential hazards, warning signs and recommended actions during such events.

GADA

The Gender and Development Agenda (GAD) supports Batangas State University's vision, mission and strategic goals, as embodied in its Strategic Plan. The GAD Agenda recognizes the various GAD commitments of the University under various gender-related laws and policies, which include, but not limited to, the Philippine Plan for Gender-Responsive Development Plan (1995-2025), Women in Development and Nation Building Act (Republic Act No. 7192), Anti Sexual Harassment Act of 1995 (Republic Act No. 7877), Anti-Violence Against Women and their Children Act of 2004 (Republic Act No. 9262) and the Magna Carta of Women (Republic Act No. 9710), Gender and Development Accord of Philippine Higher Education Institutions, CHED Memorandum Order No. 1, Series of 2015 (Establishing the Policies and Guidelines on Gender and Development in the Commission on Higher Education and Higher Education Institutions).

CTI

The Center for Technopreneurship and Innovation is a technology business incubator established in Batangas State University – The National Engineering University. Established last September 2014 through BOR Resolution No. 937, Series 2014 with the goal of bringing R&D results of the university to real world and building a sustainable entrepreneurial ecosystem among faculty members, staff, and students that will add fresh impetus to the innovation ecosystem by delivering a support system to local entrepreneurs who bear great ideas that exhibit potential as a solid investment and foundation for nation-building. CTI offers resources and support services to startup technology companies, including workspace, mentorship, funding, and networking opportunities. It serves startups located in the provinces of Cavite, Laguna, Batangas, Rizal, and Quezon (collectively known as CALABARZON) in the Philippines.

BatStateU empowers GFPS members through comprehensive Gender Mainstreaming session

Spearheaded by the Gender and Development Advocacies (GAD) Central, the Gender and Development Focal Point System (GFPS) members of the five constituent campuses were reoriented on gender mainstreaming. The activity is an annual event of the GAD Office to ensure the GFPS functionality in gender policy making, planning, programming, budgeting, implementation, and monitoring and evaluation process of GAD programs, projects, and activities (PPAs).

The five-day training centered on the theme "ENGAGE: Enhancing GAD Capacities towards Gender Equality" was attended by 81 GFPS Members across the campuses. Over the training course, the participants analyzed the concept of sex and gender, SOGIESC, sex, and gender roles, gender stereotyping, and the current gender mainstreaming approaches that were being practiced the in University. They also evaluated the GAD PPAs of their respective campuses.

Assoc. Prof. Maria Theresa A. Hernandez, Assistant Director of GAD Central guiding the GFPS members in utilization of the GFPS Functionality Assessment Tool.

GAD Focal Point System of Pablo Borbon Campus

Each constituent campus have established GFPS composed with Executive Committee (Chancellor, Vice Chancellor, Campus Director of Extension Campuses), Technical Working Group Chair (Chancellor), Technical Working Group (College Deans, Student Organization, Guidance and Counselling, Human Resource Management, Budget, Accounting, Research, Extension Services, Planning and Development, Academic Affairs, Administrative Services, Presidents of Faculty Association, Supreme Student Council, and Non-teaching Staff) and a Head Secretariat (GAD Head/Coordinator).

Student Services

21,463 low-income students receiving financial aid

Out of 24,878 students who received financial assistance from the government, external partners and university scholarship, 86.27% are from low income families.

SCHOLARSHIP PROGRAM	FUNDING	NUMBER OF BENIFICIARIES
(Elementary & High School)		
Entrance Salutatorian -IS	Internal	6
Entrance Valedictorian -IS	Internal	4
Enhanced Benefit for Qualified Dependent of BSU Faculty and Personnel	Internal	84
BatStateU Scholarship Program for Graduate School		
Government Officials and Employee of other Government Institutions / Agencies other than Batangas State University	Internal	232
BatStateU Alumni	Internal	105
Government Officials and Employee of other Government Institutions - College of Law	Internal	8
CNA Scholarship	Internal	11
National Government Scholarship		
Tertiary Education Subsidy	External	1,631
DOST Scholarship	External	966
CHED Tulong Dunong Program	External	4,050
CHED Full State Scholarship Program	External	6
CHED Half State Scholarship Program	External	18
CHED Tulong Agri Program	External	38
Agricultural Competitiveness Enhancement Fund Grants-in-Aid for Higher Education Program (ACEF-GIAHEP)	External	23
Sugarcane Industry Development Act (SIDA) Scholarship Program	External	21
Local Government Scholarship		
Batangas Provincial Scholarship Program	External	13,833
Batangas City Government Scholarship Program	External	3,633
Private Sector Scholarship		
Batanguenos USA, Inc.	External	10
First Gen Corporation	External	4
Gokongwei Brothers Foundation, Inc.	External	23
IBIDEN Philippines Inc.	External	10
ICTSI Foundation, Inc.	External	6
KEPCO Ilijan Corporation	External	41
Luis Co Chi Kiat Foundation, Inc.	External	20
Modair Manila Co. Ltd. Inc.	External	6
Philippine S&T Development Foundation-Manila Inc.	External	29
PLDT-SMART Foundation Inc.	External	20
Ginebra San Miguel, Inc. & San Miguel Foundation, Inc.	External	2
Sakamoto Yakuhin Cogyo Co. Ltd	External	7
SEM-CAlaca Power Corporation	External	26
UAM Philippines, Inc.	External	5

Low-income Student Support

861 students receive load cards through student assistance program

A total of 861 low-income students were given load cards through the university student assistance program. Each student received Php 600.00 worth of load cards to ensure that they can participate in online classes, access learning materials, submit assignments, and engage with instructors.

71 low-income students hired as student assistants

As part of the university's support to students from low-income families, the Office of Student Organizations prioritized hiring them. For the FY 2022, a total of Php 111,280.50 was allocated for the salary of the student assistants.

16 students assisted by the Legal Office

During the course of student's deployment for their On-the-Job training, a total of 16 students were assisted by the Legal Office for the completion of their Memorandum of Agreement with the companies where they will be deployed. This assistance is offered by the On-the-Job Training Office to ensure that all students will be able to comply with the requirements needed for OJT deployment.

228 students given vehicle's support

Across the five constituent campuses, a total of 228 students were able to utilized the university vehicles for the conduct of students activities.

7 proposed housing projects for students

In the approved BatStateU's Land Use Development and Infrastructure Plan (LUDIP), there are 7 proposed student dormitories across the university campuses. As of writing, the Pablo Borbon campus has ongoing development for a ten-storey dormitory building.

47

foreign students from low to lower middle income countries assisted

Foreign students from Nigeria, Congo, Iran, Papua New Guinea, Angola, Rwanda and Somalia were assisted by the University in their visa application to stay and study in the country.

Student-led Support

The University Student Council and the Supreme Student Council of each campus supported fellow students particularly those who needs financial assistance. Demonstrating unwavering solidarity, they collectively disbursed a commendable sum of Php 683,810.60, catering to the diverse needs of their peers through both monetary grants and essential provisions. This act of benevolence marked a significant milestone in fostering a supportive and inclusive academic community, underscoring the profound impact of empathy and collaboration within the student body.

Php 94,810.60

worth of store starter packs for additional livelihood

Php 165,000.00

4 desktop computers (4 beneficiaries)

Php 50,000.00

10 cellphone units (10 beneficiaries)

Php 10,000.00

20 WiFi units (20 beneficiaries)

Php 50,000.00

5 financial assistance (5 beneficiaries)

Php 300,000.00

worth of grocery packages

Php 8,000.00

10 scientific calculator (10 beneficiaries)

Php 6,000.00

30 load assistance (30 beneficiaries)

Php 683,810.60

Employee Support

LEAVE PRIVILEGES

Type of Leave	No. of Availed Privilege	Equivalent Amount
Maternity Leave	10	Php 1,031,332.76
Paternity Leave	6	Php 33,935.93
Solo Parent Leave	2	Php 16,151.89
Special Leave Benefits for Women	6	Php 256,632.76

Total equivalent amount to availed leave privileges: **1,338,053.34**

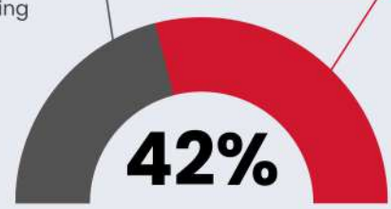
UNIVERSITY EXPENDITURE

Php 854,352,087.71

University Expenditure for staff costs and other operating expenses

Php 2,035,597,931.61

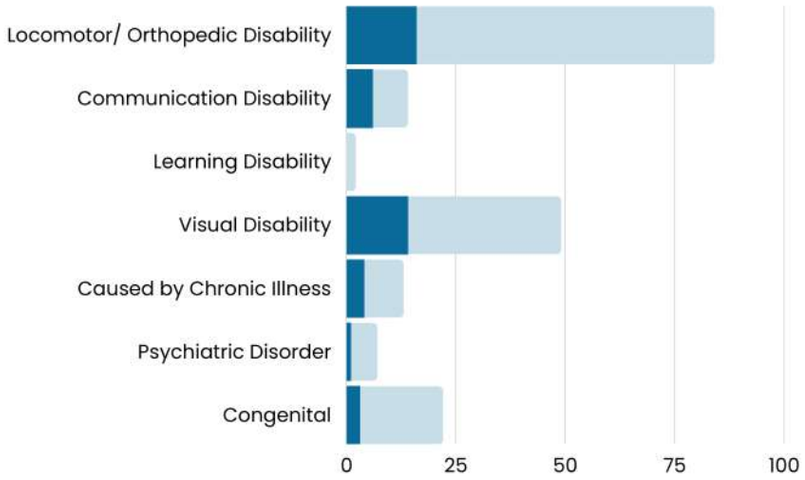
Total University Expenditure



During the fiscal year (FY) 2022, BatStateU-The NEU allotted 42% of the university expenditure to staffing costs (salaries, bonuses, clothing and uniform allowance, cash gifts, incentives, statutory benefits and others), other professional services, janitorial services, security services, other general services, training and scholarship expenses.

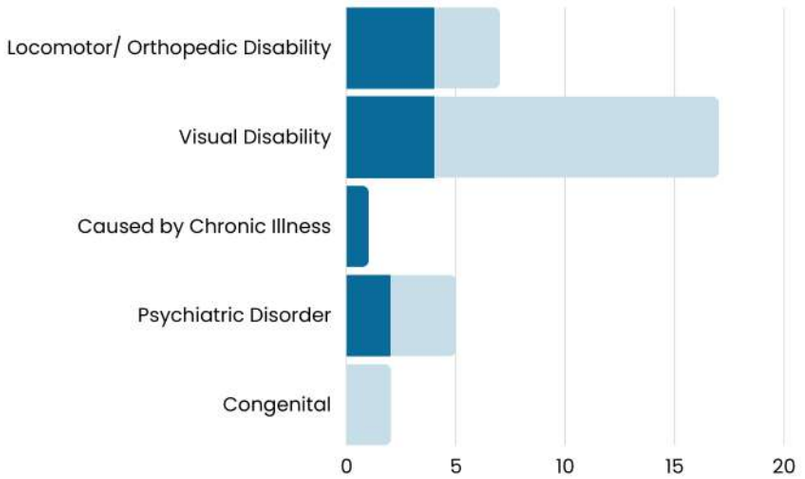
Inclusive Access

Upholding inclusivity as a cornerstone of its mission, BatStateU-THE NEU through the Office of Services for Students with Special Needs and Persons with Disabilities (SSSN and PWD), was established to provide programs and activities designed to offer equal opportunities to PWDs, indigenous people, solo parents, etc. This dedicated office works in tandem with the university's accessibility initiatives, ensuring comprehensive support ranging from academic accommodations to specialized resources, fostering an environment that not only promotes inclusivity but celebrates the unique contributions and diversity of its entire community



Distribution of Student as to Type of Disability

Across the 11 campuses of the university, there are a total of 191 PWD students comprising less than 1% of the total student population. Almost 44% of the PWD population or 85 students have orthopedic disability. This was followed by visual disability (26%), Congenital cases (11%), communication disability and disability caused by chronic illness (both 7%), psychiatric disorder (4%) and lastly, learning disability (1%).



Distribution of Employee as to Type of Disability

Across the 11 campuses of the university, there are a total of 32 PWD employees comprising less than 1% of the total employee population. Fifty-three percent (53%) of the PWD population or 17 employees have visual disability. This was followed by orthopedic disability (22%), psychiatric disorder (16%), congenital disability (6%) and lastly, disability caused by chronic illness (3%).

SDGs in the Instruction

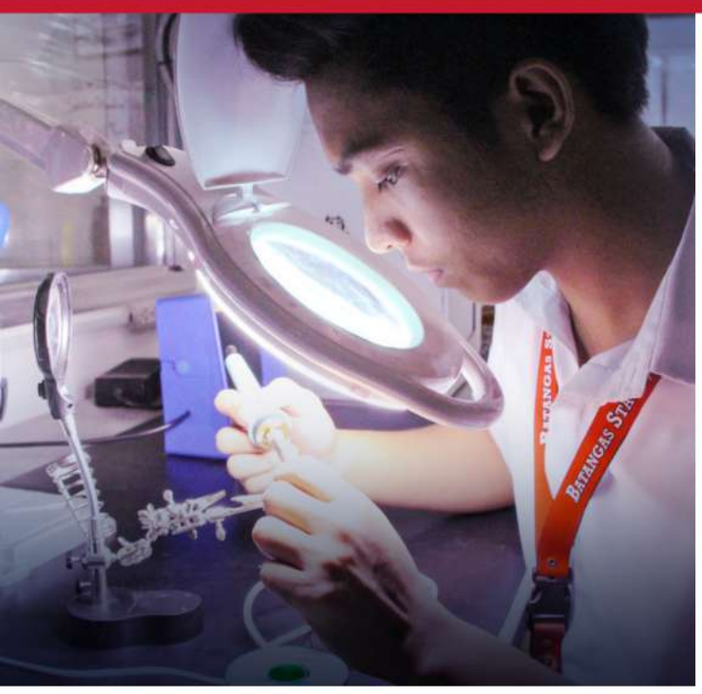
Students discussing the assigned SDGs to their group as part of their semestral output.

DevCom, CSD collab for SDG Exhibit

BS Development Communication students in collaboration with the Center for Sustainable Development staged a one-day exhibit that highlighted the University's sustainable initiatives in the achievement of the 17 UN SDGs. DevCom students featured various sustainability efforts through a wide array of Information, Education and Communication (IEC) materials such as pamphlets, brochures, dioramas, charts, and diagrams as well as videos and photographs.

BatStateU faculty, employees, and students visited the exhibit on the Ground Floor of STEAM Library, BatStateU Pablo Borbon last December 12, 2022. The said exhibit centered on the theme "The Growing BatStateU through SDGs".

In BatStateU-The NEU, SDGs are integrated in the educational framework, permeating subject content, teaching methodologies, and assessment strategies. This holistic approach ensures that our students not only learn about the SDGs but also actively engage with them in their academic journey, fostering a deeper understanding and commitment to creating a sustainable future.



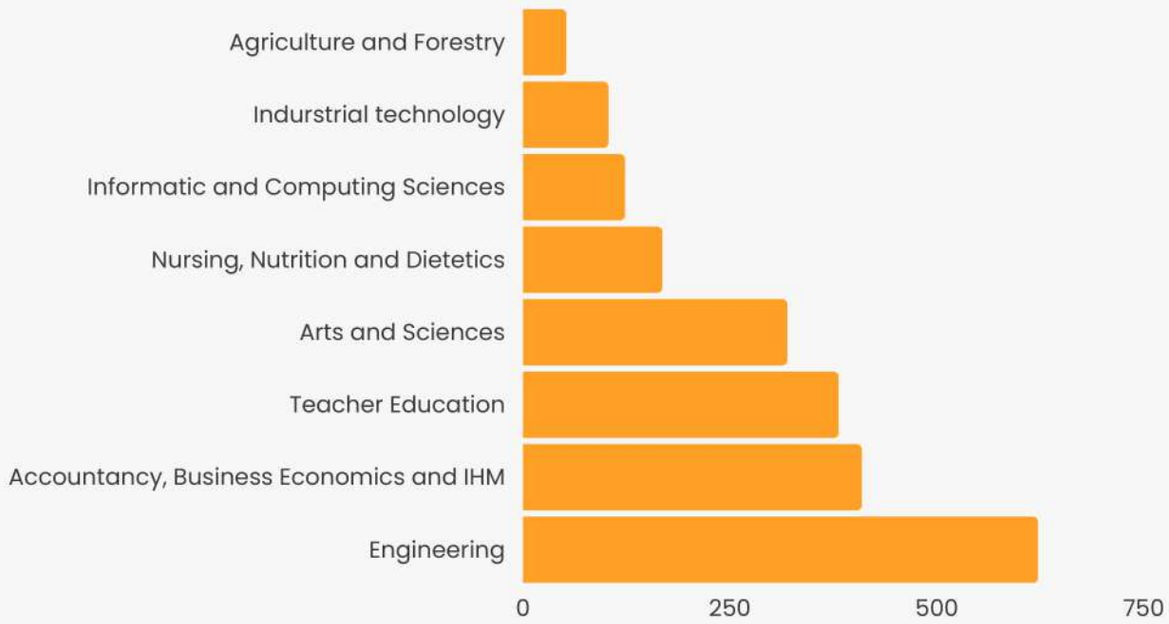
HEIs unite for a Sustainable Future of Engineering with Smart Engineering Consortium MoU Signing

Led by the Commission on Higher Education (CHED) and Batangas State University (BatStateU) various higher education institutions (HEIs) gathered virtually for the Memorandum of Understanding (MoU) signing ceremony last March 31, 2022.

The Smart Engineering Consortium aims to bring together a range of academic and research institutions to work on projects that will propel engineering and contribute building sustainable future. The MoU signing signifies commitment from all parties to work together towards this goal and to share their expertise and resources in order to drive innovation and progress in the field.

The signing ceremony was attended by 19 member institutions from all over the country.

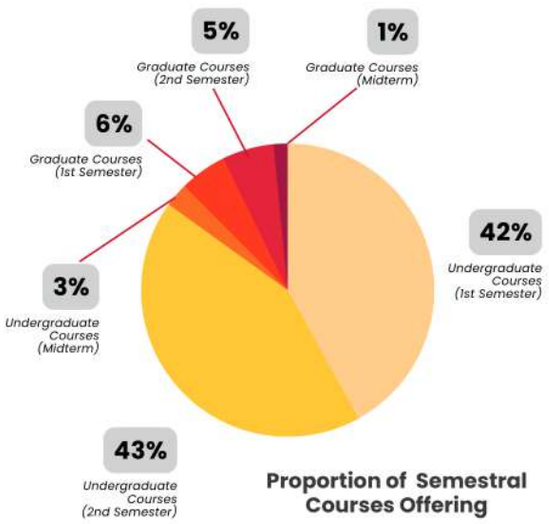
Distribution of Sustainability-related Courses in BatStateU-The NEU Colleges



Within the University, there exists an extensive and diverse selection of courses spanning across the 156 program offerings. This comprehensive academic landscape is facilitated by 8 colleges collectively encompassing 5,540 subjects. Notably, a substantial 40.06% of these subjects are sustainability-related. The College of Engineering (CoE) has the most sustainability-related courses with 622 in total. As the National Engineering University, BatStateU offers a large number of engineering programs compared to other colleges. In contrast, the College of Agriculture and Forestry, while maintaining an essential role, currently hosts the fewest sustainability-related courses, totaling only 52. These courses are distributed across two program offerings only within the college, highlighting the potential for growth and expansion in this crucial field.

Sustainability Courses 40.06%

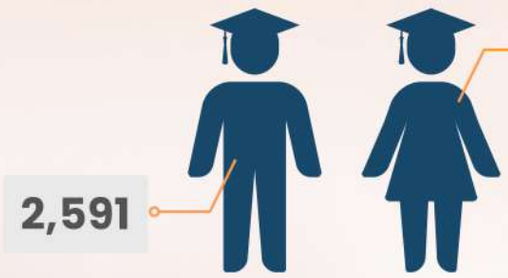
2,177 out of 5,540 courses have started mainstreaming sustainable development in the curriculum



Proportion of Semestral Courses Offering

6,679 graduates

The data reveals that more females have graduated in 2022 with 22.42 percent higher rate than male graduates.



Of the total 6,937 applicants for graduation, 96.28% (6,679) qualifies for graduation.

No. of male applicants and graduates

The data shows that 95% percent (2,591) of male applicants successfully graduated.

No. of female applicants and graduates

The data shows that 97% percent (4,088) of female applicants successfully graduated.

Leading Sustainable Innovations

Team Wonderpets emerges victoriously in International WED Hackathon

On March 4, 2022, Team WONDERPETS (Water remediatiON using metal-organic framework DERived from PET bottles) from Batangas State University made the Philippines proud by winning the first-ever World Engineering Day (WED) Hackathon, an International competition that drew entries from 125 student teams from 23 countries around the world.

The challenge of the WED Hackathon was to demonstrate a sustainable engineering solution addressing a global real-world problem. Tackling "Water Accessibility in a Changing Climate", Team WONDERPETS devised a water pollutant adsorbent based on a metal-organic framework, chemically recycling terephthalic acid extracted from PET bottles. The resulting material is extremely porous, cost-efficient, and reusable; thus, making it a sustainable means of removing pollutants from water.

The solution offered not only supports the 2030 UN Sustainable Goal (SDG) 6: "Clean Water and Sanitation for All," but also SDG 12: "Responsible Consumption and Production" for its plastic recycling feature.

BatStateU Team Ai-quaponics hails Champion in the EIC '22

A team of BS Electronics Engineering students from BatStateU-The NEU victoriously emerged as "CHAMPION University Category" in the Engineering Innovation Challenge (EIC) 2022 in Singapore. It was organized by the Institution of Engineers Singapore (IES) and Science Centre Singapore with the support of the Ministry of Education.

The team used the Internet of Things (IoT) and Artificial Intelligence (AI) to create the AI-quaponics-360. It is an intelligent small-scale aquaponics system, for the monitoring and control of aquaponics parameters, as well as its botanical and zoological components, innovatively designed for food sustainability and security through home urban farming.

University Passing Rate

ON PROGRAMS WITH LICENSURE EXAMINATION

PROGRAM	PASSING RATE
Bachelor of Elementary Education	**100%**
Bachelor of Secondary Education	**71.29%**
Bachelor of Science Accountancy	**41.07%**
BS Custom Administration	**90.32%**
BS Criminology	**61.29%**
BS Chemistry	**61.11%**
BS Psychology	**33.98%**
BS Nutrition and Dietetics	**58.29%**
BS Nursing	**78.99%**
BS Chemical Engineering	**53.60%**
BS Sanitary Engineering	**49.33%**
BS Mechanical Engineering	**92.49%**
BS Electrical Engineering	**69.50%**
BS Electronics Engineering	**64.29%**
BS Civil Engineering	**66.90%**
BS Agriculture	**31.57%**
BS Forestry	**100%**
BS Architecture	**62.50%**
BS Interior Design	**72.00%**

No. of Takers: 2,049
No. of Passers: 1,460

71.25%
Overall Passing Rate

BatStateU-The NEU holds First-Ever Graduate Research Forum for Technology, Engineering and Computing

Advancing research culture in the graduate school, the Research Office-Alangilan in collaboration with the Center for Innovation in Engineering Education held the first Graduate Research Forum for Technology, Engineering and Computing (GRaF-TEC '22) last December 3, 2022.

With the theme "Collective Growth towards Sustainable Research Culture", the virtual forum aimed to empower the University's graduate students and faculty in the planning and implementation of their research projects, while also providing guidance and advice on the skills and strategies needed to bring their work to fruition, dissemination, and real-world service and application. The six thematic areas of the forum include AI, ICT, Data Science and Analytics, Energy and Environment, Biochemistry and Material Science, Urban Science and Engineering, Industry Projects and Innovation, and Emerging Technologies. Each theme was designated to address pressing issues in the respective fields and to showcase the latest advancements and innovations.

SDG in Research

BatStateU-The NEU successfully hosts the 1st ASCENT

Under the theme "Promoting a Sustainable Culture of Research and Collaboration, the Center for Innovation in Engineering Education (CIEE) of BatStateU-The NEU successfully held its first Annual Student Conference for Engineering and Technology (ASCENT '22) on June 9-10, 2022.

The virtual event brought together 88 entries from undergraduate programs of the university. The thematic areas of the conference were structured into groups following the "The Five Key Elements (5Ps) of the UN Sustainable Development Goals: People (SDGs 1, 2, 3, 4, 5), Planet (SDGs 6, 12, 13, 14, 15), Prosperity ((SDGs 7, 8, 9, 10 and 11), Peace (SDG 16) and Partnership (SDG 17).

Aside from paper presentations, the two-day conference featured a plenary session lecture-discussions under the themes "Engineering a Sustainable Future" and "Engineering towards SDG Attainment."

BUILDING TECHNOLOGY COMMERCIALIZATION:

University and Industry Collaboration

The Research Management Services, through the Knowledge and Technology Transfer Management (KTTM), spearheaded a 3-day seminar on the topic of Building Technology Commercialization: University-Industry Collaboration on September 21-23, 2022.

Mr. Cris Edwin Bonalos from the University of the Philippines, Los Baños, served as the guest speaker for the event wherein he talked about the art of pitching. Following his talk was a pitching activity by selected faculty researchers of the University with the following technologies: Beyond Vision, B.R.Y.C.E., Bagoong Powder, and Tulingan Nuggets. After the exercise, Mr. Bonales gave his comments and advice to further improve the pitching delivery of the participants.

Through the seminar, participants gained insights into effective technology transfer and commercialization strategies, which are essential for fostering sustainable industrialization. By encouraging the exchange of experiences and promoting potential collaborations with industry partners, the event lays the groundwork for establishing robust infrastructure and fostering an environment conducive to innovation and sustainable industrial development.

Promoting Sustainable Farming of Kapeng Barako

Kapeng Barako is a coffee varietal grown predominantly in the Batangas provinces of the Philippines. It is one of the known local product of Batangas alongside balisong.

Supporting local farmers and the province's position as the center of Kapeng Barako production in the region, BatStateU-The NEU launched the BARAKO project. Through the initiative of College of Agriculture, the project has distributed 15,000 Kapeng Barako seedlings to 65 qualified farmer-beneficiaries in seven coffee-producing municipalities of Batangas after field assessment and farmers' validation.

Beneficiaries also received training seminars to ensure the successful management of the seedlings. The project, funded by Department of Agriculture - Bureau of Agricultural Research (Philippines) and implemented in partnership with private institutions and local government units, aims to increase the hectarage of kapeng barako in Batangas province and develop a signature brand for local and international markets.

Proportion of Research Fund for Sustainability Research

82.97%

of total university research fund is dedicated to researches addressing sustainability

Php 84,841,547.19

Total Research Fund for Sustainability Research

Php 102,261,277.19

Total University Research Fund (FY 2022)

The University demonstrates its dedication to addressing challenges and discovering innovative solutions through its robust research efforts. This dedication to progress is further exemplified by its emphasis on sustainability, reflected in the allocation of funds for the facilitation of its research unit, aimed at pioneering sustainable solutions for the future.

Research Highlights

Research Programs and Projects Implemented
87

Research Presentations
48

Level:
14 - International
3 - National
21 - Regional

Research Published
35

in WoS or Scopus-indexed journals

IPs Filed and Registered
474

461 - Copyrights
7 - Inventions
4 - Industrial Designs
2 - Trademarks

Startups/ Incubatees Graduated
6

Partnerships
20

Products Developed
15

Research Output Completed
27

23 out of 27 were utilized by the industry/ beneficiaries in the last three years

Technopreneurship
1,486

Research Collaborations
44

Faculty engaged in Research
205

13 Research Grants worth
₱13.58M

received from different external funding agencies

SDG-Related Publications

As a research-driven institution, BATSTATEU-The NEU continuously strives to carry out high-impact research initiatives that directly address and align with the SDGs. These research efforts are geared towards solving real-world problems and advancing sustainable development in various sectors such as environmental conservation, quality education, social equity, and economic growth.

RESEARCH TITLE	JOURNAL TITLE	SDG
Fusing compressed deep ConNets with a self-normalizing residual block and alpha dropouts for a cost-efficient classification and diagnosis of gastrointestinal tract diseases	MethodsX	SDGs 9,13,14,and 15
A comparative performance of breast cancer classification using hyper-parameterized machine learning models	International Journal of Advance Technology and Engineering Exploration (IJATEE)	SDG 3
Community stakeholders\knowledge and awareness of the ecological and socio-economic uses of mangroves in Calatagan, Batangas, Philippines	International Journal of Conservation Science	SDG 8
On some properties of non-traceable cubic bridge graph	European Journal of Pure and Applied Mathematics	SDG 4
A 2.71 fJ/conversion-step 10-bit 50 MSPS split-capacitor array SAR ADC for FOG systems	International Journal of Electronics Letters	SDG 14
Teaching English online in higher education: understanding the social climate of online academic English courses	Australasian Journal of Educational Technology	SDG 4
ASEAN identity in education through literary pedagogy perceived by teaching personnel at universities in Southern Tagalog Region, the Philippines	Humanities, Arts and Social Sciences Studies (HASSS)	SDG 4 and 17
Development of a TPACK-based professional development framework for the new normal in education	International Journal of Information and Education Technology (IJIET)	SDG 4
Optimization of microwave-assisted extraction of phenolic compounds from Eleusine indica using response surface methodology	Malaysian Journal of Analytical Sciences	SDG 3
An overview of remote monitoring methods in biodiversity conservation	Environmental Science and Pollution Research	SDG 9, 14 and 15

RESEARCH TITLE	JOURNAL TITLE	SDG
Hybrid lighting system for indoor crop production	Mindanao Journal of Science and Technology	SDG 2
Various transmission codes for the control of bit error rate in both optical wired and wireless communication channels	Journal of Optical Communications	SDG 9 and 11
Non return to zero line coding with suppressed carrier in FSO transceiver systems under light rain conditions	Journal of Optical Communications	SDG 9 and 11
BatStateU intergrated response drone: A hybrid unmanned vehicle for disaster response	International Journal of Computing and Digital Systems	SDG 13
Nanotechnology for clean and safe water: A review	Oriental Journal of Chemistry	SDGs 3,6,14, and 15
Synthesis of hybrid carbon quantum dots from tamarindus indica and mangifera indica leaves for the detection of mercury (Hg2+) Ion in purified water and simulated seawater	Malaysian Analytical Sciences Society	SDG 6 and 12
Modelling and optimization of microwave assisted extraction of total phenolics in kakawate (Gliricidia sepium) as pesticide against black bean aphids (Aphis fabae)	Malaysian Analytical Sciences Society	SDG 1,2, and 11
Classification and percent severity of pechay damage caused by cutworm (Spodotera litura)	Philippine Journal of Science	SDG 2
Single-chip DC-DC buck converter design based on PWM with high-effeciency in light load	International Journal of Electronics Letters	SDG 7 and 9
A novel screening tools system for depressive disorders using social media and artificial neural network	International Journal of Intelligent Systems and Applications in Engineering	SDG 3 and 8
On the use of metal-organic framework-based adsorbent from recycled PET bottles for eriochrome black T removal	Materials Today: Proceedings	SDG 6 and 12
A participatory action research (PAR)-influenced mentoring program for graduate students	The Palawan Scientist	SDG 4
Diagnosing gastrointestinal diseases from endoscopy images through a multi-fused CNN with auxiliary layers, alpha dropouts, and a fusion residual block	Biomedical Signal Processing and Control	SDG 3 and 9
Modelling the toughness of nanostructured polyhedral oligomeric silsesquioxane composites fabricated by stereolithography 3D printing: A response surface methodology and artificial neural network approach	ACS Applied Polymer Materials	SDG 6

RESEARCH TITLE	JOURNAL TITLE	SDG
Embracing diversity: empowerment of filipino pre-service teachers for inclusive education	Humanities, Arts and Social	SDG 4 and 5
Career track prediction using deep learning model based on discrete series of quantitative classification	Applied Computer Science Journal	SDG 4 and 8
Truncating fined-tuned vision-based models to lightweight deployable diagnostic tools for SARS-CoV-2 infected chest X-Rays and CT-scans	Multimedia Tools and Applications	SDG 3 and 9
Automated diagnosis of diverse coffee leaf images through a stage-wise aggregated triple deep convolutional neural network	Machine Vision and Applications	SDG 15
Concentration robustness in LP kinetic systems	MATCH: Communications in Mathematical and in Computer Chemistry	SDG 4
An overview of remote monitoring methods in biodiversity conservation	Environmental Science and Pollution Research	SDG 9, 14 and 15
A 16-nm FinFET 28.8mW 800-MHz 8-bit All-N-transistor logic carry look-Ahead (CLA) adder	Circuits, Systems and Signal Processing	SDG 14
Exploring the concept of pedagogical resilience during the COVID-19 pandemic: Teachers' perspectives from Thailand and the Philippines	Frontiers in Education	SDG 4
The effects of drying methods on the physico-chemical properties and antioxidant activity of bilimbi(Averrhoa bilimbi)	Research Journal of Chemistry and Environment	SDG 2, 9 and 12
Some parameters of the central graphs of the identity graphs of finite cyclic groups	European Journal of Pure and Applied Mathematics	SDG 4
Design of a control architecture for an underwater remotely operated vehicle (ROV) used for search and resource operations	Kybernetika	SDG 14

SDGs in the Extension

One of the core functions of Batangas State University-The National Engineering University is the Extension Services. By actively engaging in community outreach programs, knowledge transfer initiatives, and capacity-building workshops, the Extension Services aim to address various SDGs. Through these efforts, the university seeks to foster sustainable development, promote technological innovation, and empower local communities, contributing to the global efforts towards achieving the 2030 Agenda for Sustainable Development.

Extension Services 12 Point Agenda

1. BatStateU Inclusive Social Innovation for Regional Growth (BISIG)
2. Livelihood and other Entrepreneurship related on Agri-Fisheries (LEAF)
3. Environment and Natural Resources Conservation, Protection and Rehabilitation
4. Smart Analytics and Engineering Innovation
5. Adopt-a-Municipality / Adopt-a-Municipality / Social Development thru BIDANI Implementation
6. Community Outreach
7. Technical-Vocational Education and Training (TVET)
8. Technology Transfer, and Adoption/Utilization
9. Technical Assistance and Advisory Services
10. Parents' Empowerment thru Social Development (PESODEV)
11. Gender and Development
12. Disaster Risk Reduction and Management and Disaster Preparedness and Response / Climate Change Adoption (DRRM and DPR / CCA

122

Active Partnerships

LGUs, industries, NGOs, NGAs, SMEs, and other stakeholders

10,756

Personnel Trained

weighted by the length of training

412

Extension Programs, Projects, and Activities (PPAs)

17,398

Beneficiaries

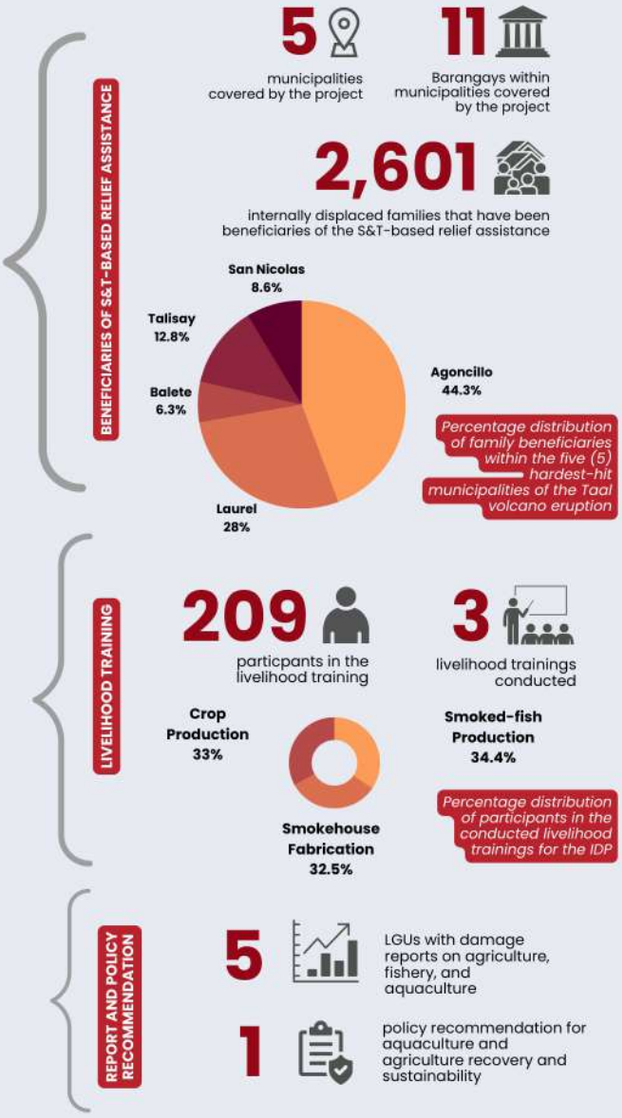
Batangas State University bags Gawad Serbisyo National Award

Batangas State University was recognized as the national awardee for the Gawad Serbisyo Award during the 2021 PaNata ko sa Bayan Awards held at the DSWD Malasakit Auditorium in Batasan Pambansa Complex, Quezon City on February 28. This award is given to institutions that provide humanitarian assistance, timely services, and logistical support during relief services, emergency assistance, and disaster operations.

Batangas State University stands as the sole state university in the Philippines to attain this prestigious recognition. This achievement is attributed to the university's remarkable contributions in both research and extension services. Notably, BatStateU-The NEU excelled in pioneering technology innovations that have been instrumental in disaster risk reduction and management. Moreover, through the initiative of Extension Services Office, the university made substantial impacts in areas such as humanitarian assistance, livelihood training for Internally Displaced Populations (IDPs) following the Taal Volcano eruption through the Bangon Batangas Project, and effective information dissemination through their Ugnayan: Pamantasan at Pamayanan Radio program.

BANGON BATANGAS

In the aftermath of the 2020 Taal Volcano eruption, Batangas State University through its Extension Services Office, initiated the "Bangon Batangas Project," a noble endeavor that continues to make a meaningful impact to this day. Below are the breakthroughs of the said project:



Dr. Armando Mendoza Jr. and Assistant Professor Kristia Lei Reyes engage in an insightful exchange during the regular radio session on "Ugnayan: Pamantasan at Pamayanan."

SDGs in the Wider Community

BatStateU-ESO launches NUTRInteraksyon Radio Program

To address the current health and nutrition challenges, BatStateU Extension Service Office-Central in partnership with the Nutritionist-Dietitians' Association of the Philippines (NDAP) Batangas Chapter developed a nutrition-related radio program that will serve as a school-on-air radio program. The radio program entitled NUTRInteraksyon sa Radyo aims to address malnutrition problems in Batangas and nearby provinces which will offer to listeners information about nutrition-related activities that are beneficial to their health and well-being.

Modifications to Design

Part of the continuous development of the technology is the modification of its design to enhance its performance further. This version utilizes the same pump and power circuit as the prototype. However, a battery had been included in the new setup to allow for irrigation even during the dark.

The entire solar panel deployment mechanism was also changed; in the prototype, easel-like panel stands had to be manually unfolded one by one by the user. On the contrary, this version employs two hand-operated winches and pulley mechanisms to easily unfold and fold the panels.

ESRC deploys solar mobile irrigation system in Lobo, Batangas

On July 26, a solar-powered irrigation system was provided to beneficiaries in Brgy. Olo-olo, Lobo, Batangas as a result of a partnership between the Lobo Municipal Agriculture Office, the Lobo Irrigation Services Association, and BatStateU. The Electronic Systems Research Center (ESRC) developed and transferred the system in response to the severe damage caused by Typhoon Salome in 2017, which resulted in a lack of irrigation facilities in the area. The prototype is capable of producing 4.5 cubic meters of water per hour.

Funded by the Department of Science and Technology, the PHP 810,350.40 project, the system is made with stainless steel submersible pump powered by six 100W solar panels, and a linear current booster circuit that allowed the system to function without batteries, making it lighter and more mobile. Additionally, the circuit components, including six easel-like mechanisms that served as panel stands, could be carried in a customized cart.

BatStateU launches Food Innovation Center as a shared facility to boost MSMEs productivity

The Batangas State University-Food Innovation Center has officially launched and become one of the Shared Service Facilities for Micro, Small, and Medium Enterprises (MSMEs) in Batangas, providing a hub for food solutions in the CALABARZON region. The launch event, officiated by FIC and DTI personnel, was a huge success, with the attendance of Ms. Leila M. Cabreros, the Provincial Director of DTI Batangas, and Assoc. Prof. Albertson D. Amante, the Vice President for Research, Development, and Extension Services.

The center's acquisition of equipment, including an oven, vacuum fryer, walk-in chiller, and freezer, will help to provide essential services for the preparation and processing of food products, improving MSMEs' productivity and efficiency through better access to technology. The MOA and UA signing, followed by the ribbon cutting, marked a significant milestone for the FIC, which will provide the community with the services necessary to innovate and develop their food products. The launch event was a testament to the continued collaboration between the FIC and DTI in supporting MSMEs' growth and sustainability in the region.

FIC Facilities:


Vacuum Fryer


Oven


Walk-in Chiller/ Freezer

Supporting Local MSMEs

BatStateU-The NEU initiates Kaagapay Pilot Project to reduce HIV/STI testing hesitancy

The Batangas State University's Social Innovation Research Center (SIRC) and Extension Services Office conducted a design-thinking workshop on October 13, 2022, to address HIV/STI testing hesitancy in Batangas Province. The pilot project, KAAGAPAY, aims to involve universities and stakeholders in gathering information and developing action plans. The workshop involved faculty members, students, and members of a coalition. After the workshop, the outputs were presented and evaluated by a group of assessors, and the results will be used to strengthen the current policy recommendation before presenting it to the Provincial Board of Batangas.

Bridging Research and Policy Making:

BatStateU-The NEU hosts Policy Workshop

The Batangas State University's Social Innovation Research Center (SIRC) hosted a four-day policy workshop titled "Transforming Research and Evidence to Policy Impact" to teach evidence-based and futures-oriented policymaking to participants. The workshop aimed to develop research and policy agendas while preparing policy pitches. During the pitching session on the last day, six policy outputs based on the research projects of the participants were presented and evaluated by various personalities from NEDA, DICT, DILG, DOST, private sector, and academic institutions. The event was held in partnership with the University of the Philippines (UP) and the Development Academy of the Philippines (DAP).

Tracking our Consumption

At BatStateU, a profound emphasis is placed on environmental sustainability, underpinned by a resolute commitment to safeguarding our planet. Integral to this mission, we diligently monitor our energy and water consumption, solid waste generation and GHG emissions exemplifying our dedication to responsible resource management.

Monthly Average Electricity Consumption

1,102.55 GJ

Average Consumption per capita/month

0.0192 GJ

Monthly Average Food Waste/ Constituent Campus

0.0297 mt

Average Food Waste per capita/month

0.0000005 mt

Monthly Average Water Consumption

4,305 m^3

Average Consumption per capita/month

0.07 m^3 or 70 L

Monthly Average Solid Waste/ Constituent Campus

5.38 mt

Average Solid Waste per capita/month

0.00009 mt

Monthly Average Fuel Consumption of University Vehicle

2,369.62 L

Estimated GHG Emission per Capita/Month

0.0 tCO2-e

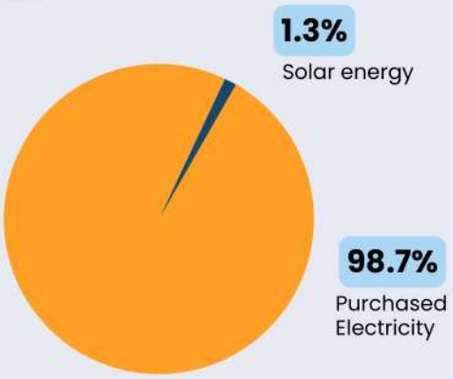
Electricity Consumption

13,230.63 GJ

TOTAL ELECTRICITY CONSUMPTION
(purchased electricity)

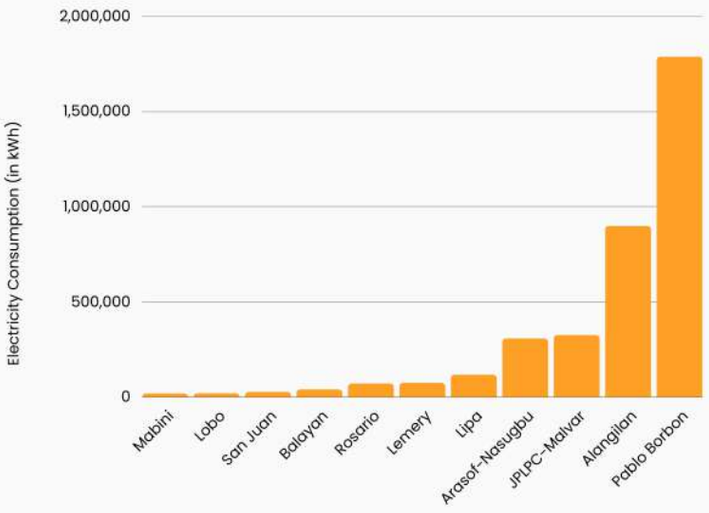
171.82 GJ

TOTAL ELECTRICITY CONSUMPTION
(from solar energy)



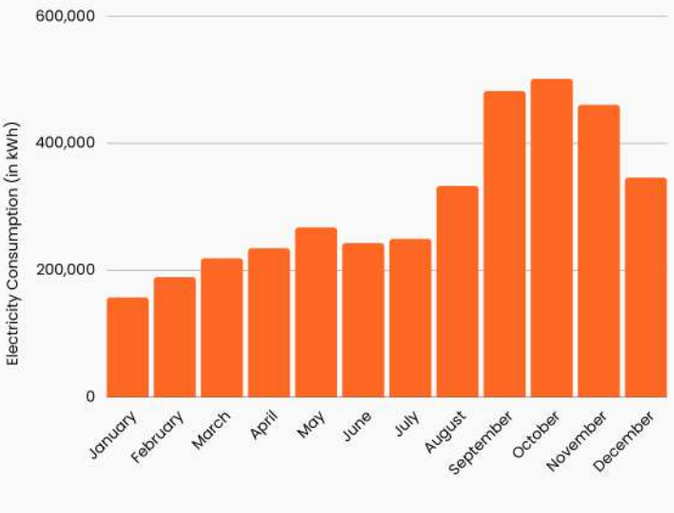
Proportion of Consumption from Purchased Electricity vs. Solar Energy

Consumption from solar energy is currently at 1.3% as three campuses only of the university has solar panels. The University plans to increase low carbon sources by 25% in the next years.



Electricity Consumption per BatStateU Campus

The graph shows the distribution of electricity consumption across various campuses of the University. Pablo Borbon campus has the highest consumption, accounting for a substantial 48.6% of the overall electricity consumption reflecting its significant size and extensive operations. This was followed by the Alangilan (24.4%), ARASOF-Nasugbu and JPLPC-Malvar (8%), Lipa (3%), Rosario and Lemery (2%), Balayan (1%), Mabini, Lobo and Balayan (less than 1%).



Electricity Consumption per Month

The graph represents the progressive surge in electricity consumption, starting from August, coinciding with the initiation of the First Semester of the academic year. This upward trend continues until October, subsequently tapering off in November and December, mirroring the arrival of the northeast monsoon and its accompanying cold wind thereby reducing electricity consumption of air conditioning units,

Fuel Consumption

929.30 GJ

TOTAL FUEL CONSUMPTION

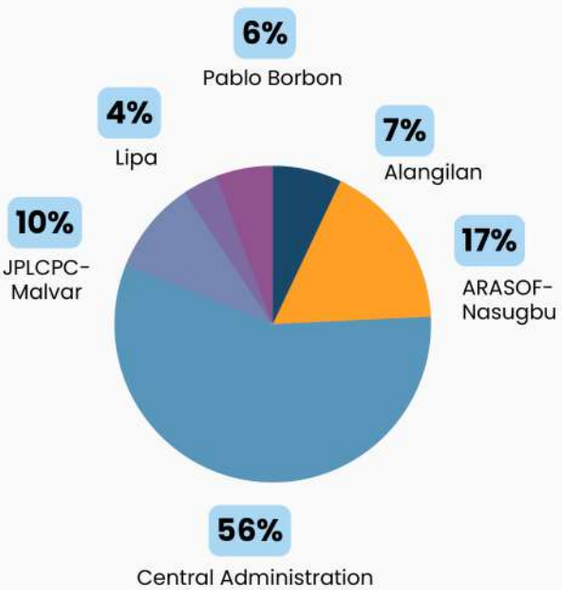
929.22 GJ

Diesel Consumption

0.08 GJ

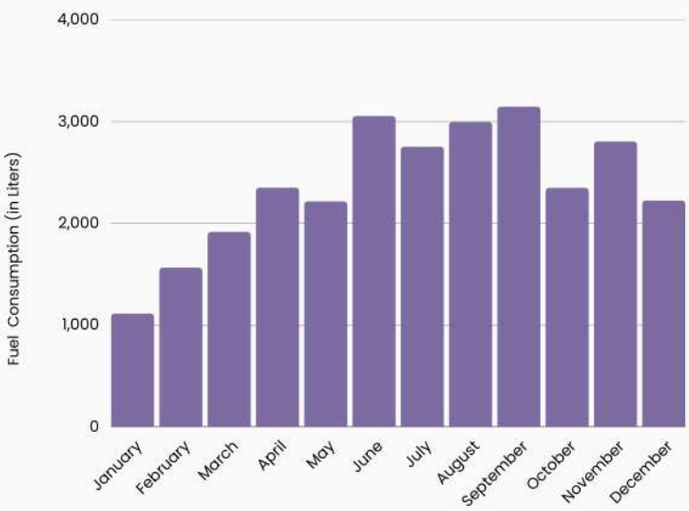
Gasoline Consumption

The university owned a total of 22 vehicles across it campuses. Twenty (20) use diesel as fuel and only 2 vehicles use gasoline.



Proportion of Fuel Consumption in BatStateU Campuses

The graph shows the proportion of fuel consumption across the University. Notably, the Central Administration dominates the chart, reflecting a substantial proportion of 56% of the overall consumption. This can be attributed to the official travels undertaken by the University's senior officials. ARASOF-Nasugbu closely trails behind, comprising 17% of the total, owing to its distance from the main campus, making it the farthest among the University's campuses. This was followed by JPLPC-Malvar with 10% and Lipa, Alangilan and Pablo with only less than 10%.



Fuel Consumption per Month in Liters

The graph illustrates the monthly fuel consumption for the university owned vehicles over the course of a year. Each bar represents the amount of fuel consumed in liters during a specific month. The months of June, August and September exhibit the highest fuel consumption, likely due to increased official travels as the academic year began.

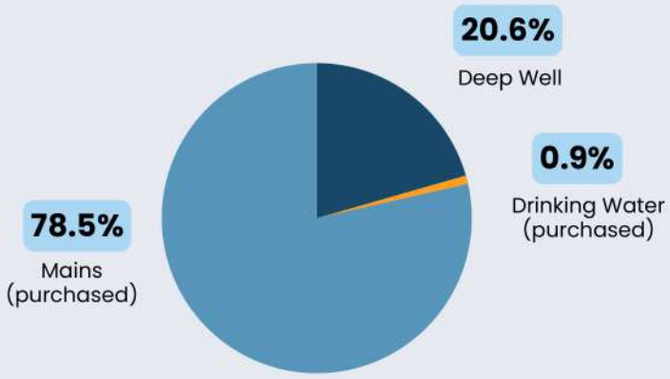
Water Consumption

51,668.41 m³

TOTAL WATER CONSUMPTION

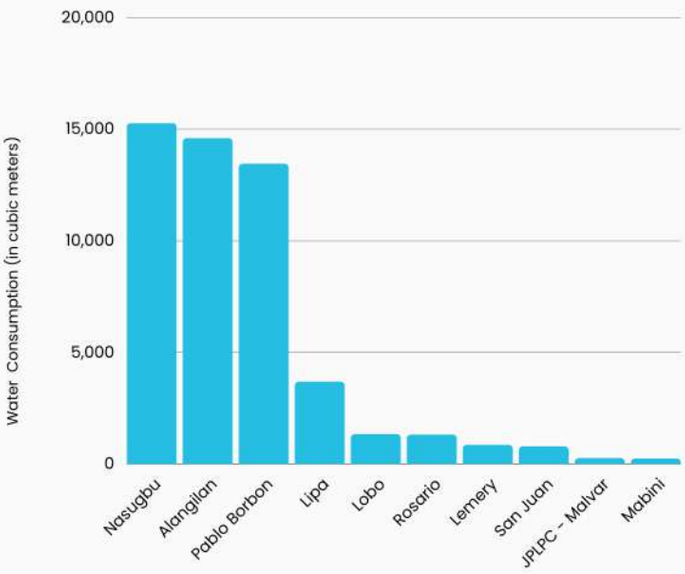
9,603 m³

TOTAL TREATED WASTEWATER



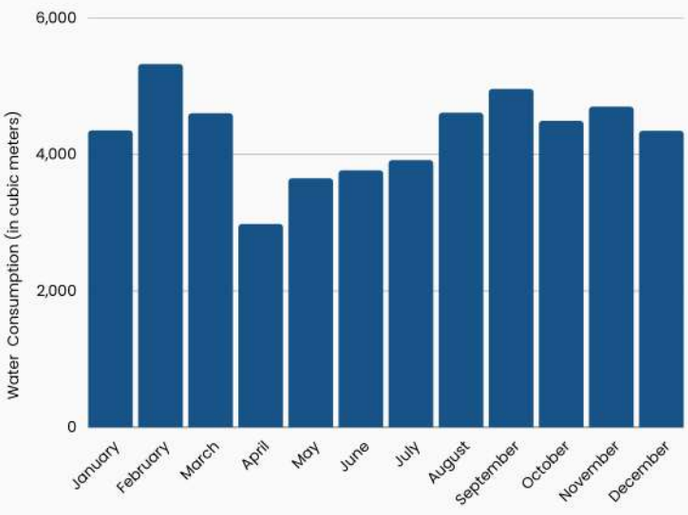
Proportion of Consumption per Water Sources

The university primarily relied on locally sourced water suppliers for the majority of its water supply, constituting approximately 78% of the total water usage. While a fraction of the university's water supply, approximately 21%, was extracted from the on-campus deep well. Three campuses of the University, Pablo Borbon, Balayan and ARASOF-Nasugbu have on campus deep well. Only a marginal portion, less than one percent (1%), of the university's water supply was allocated specifically for drinking water.



Water Consumption of BatStateUCampuses

The graph shows the water consumption across the University. The top three biggest campuses in terms of population and campus size contributes to almost 84% of the total water consumption. This can be attributed also to the ongoing building constructions in the said campuses that resulted to increase of consumption. Lipa campus constitutes to 7% of the total consumption while the rest of the campuses shares to the remaining 9%.



Water Consumption per Month

The graph provides an overview of the water consumption pattern of the university in 2022. The data reveals a consistent trend of water consumption during the start of the academic year, particularly from August to December. This increased consumption is likely attributed to the greater use of water for various purposes such as landscaping, maintenance, and an influx of students. The highest consumption was recorded in February earlier the year as the school began to full face-to-face learning modality. April to July recorded lower consumption. This decrease is due to reduced campus activity during academic breaks.

Sustainable Water Management

67%

of University's water fixtures are water-efficient

The University is leaning towards sustainability even in the type of water fixtures to be installed within the university premises. As stated in the Sustainability Plan, and Policy Guidelines the utilization of water-efficient water supply fixtures such as dual button flush tanks and throttled water valves for faucets. The university at present utilizes these water-efficient fixtures to help conserve water and support sustainability. It is in the pipeline of the university to make all of its water supply fixtures at water efficient and sustainable.

ACCESS TO FREE DRINKING WATER

To ensure safe and potable drinking water, Batangas State University provides water dispensers for students and employees. The university is in contact with water refilling stations for the supply of treated water. This water refilling station is Department of Health (DOH) accredited to operate and sell product water. The raw water undergoes several stages of treatment processes and complies with the set standards under the Philippine National Drinking Water Standards. A total of 88 units of water dispensers were installed within the university facility accessible to the university community. An average of 7,770 gallons of treated water were consumed per month. Aside from this, drinking fountains were also available. The water being supplied to the drinking fountain is from DOH accredited water service providers or the city or municipal water districts which also ensures the proper treatment of water for safe consumption. 100% of the consumed water is treated and is safe and potable for human consumption.

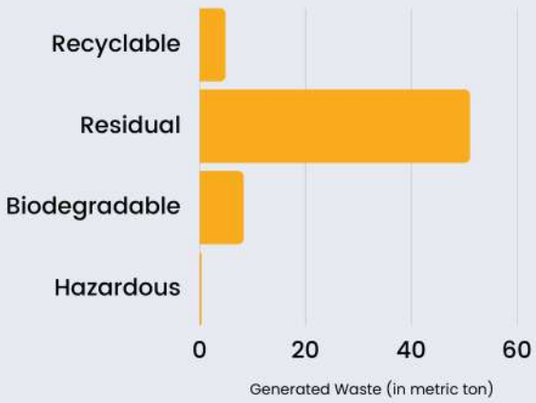
Waste

64.57 mt

TOTAL WASTE GENERATED

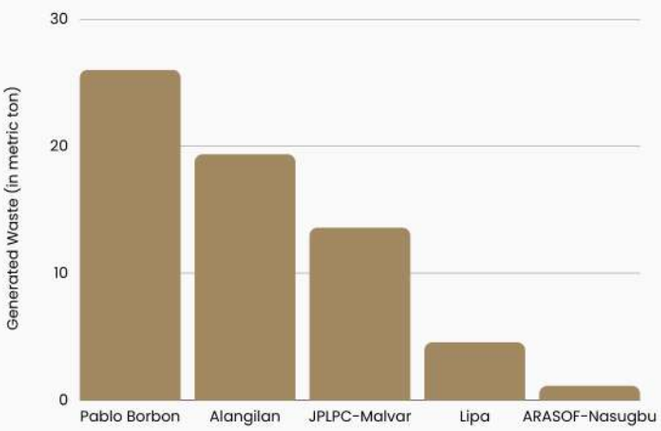
0.36 mt

TOTAL FOOD WASTE GENERATED



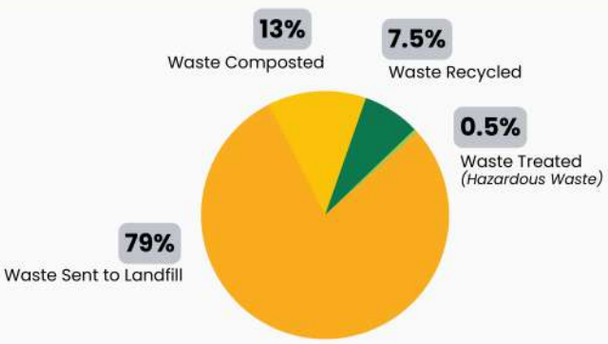
Proportion of Solid Waste Generated as to Type of Waste

In 2022, the University produced a total of 64.57 metric tons of solid waste, distributed across different categories including biodegradable, recyclable, residual, and hazardous waste. Notably, the largest proportion, constituting 79% of the total waste, was classified as residual waste. Biodegradable waste, comprising yard waste, food waste, and other organic materials, accounted for the second largest portion. It constituted 13% of the total waste generated. Recyclable waste, which included paper/cartons, plastics, and mixed metals, accounted for 7.5% of the total waste. Finally, the university also generated a small fraction, approximately 0.5%, of hazardous waste.



Solid Waste Generated by BatStateU Constituent Campuses

Among the five constituent campuses of BatStateU-The NEU, the campus of Pablo Borbon has the largest waste generation, accounting for 40% of the total waste produced. This can be attributed to the significantly larger population of students and employees hosted by this campus. Following closely, the Alangilan campus accounted for 30% of the total waste, reflecting its substantial presence within the university's waste production. It's worth noting that the Central Administration functions are shared between the Pablo Borbon and Alangilan campuses, which may contribute to their relatively higher waste generation compared to other campuses. JPLPC-Malvar contributed 21% of the total waste, while the Lipa campus and ARASOF-Nasugbu generated 7% and 2% of the waste, respectively.



Proportion of Waste Treatment

The predominant bulk of the waste generated, amounting to 51.11 metric tons, falls under the category of residual waste. For the efficient management of this type of waste, the university has established a partnership with a third-party hauler responsible for its collection and disposal. This approach ensures the proper handling and disposal of residual waste in line with environmental regulations and best practices. Conversely, biodegradable waste, constituting a significant portion of the total waste generated, undergoes an environmentally beneficial process. It is directed to the university's dedicated composting facility, where it is converted into nutrient-rich compost. A portion of this compost is utilized for tree planting and gardening activities, highlighting the university's commitment to sustainability and eco-friendly initiatives. Furthermore, the university has established a partnership with a third-party recycling partner to manage recyclable waste, which accounts for 7.5% of the total waste. This sustainable practice not only facilitates waste reduction but also contributes to the promotion of a circular economy. In the case of hazardous waste, which represents a smaller fraction of the total waste generated (0.5%), the university ensures compliance with regulations by engaging the services of a DENR-accredited disposal company. This measure guarantees that the hazardous waste is appropriately treated before its final disposal, thus mitigating potential environmental risks and hazards.

Waste Facilities

Sewage Treatment Plant (STP)

Batangas State University has an existing Sewage Treatment Plant (STP) with seven lifting stations that act as the main collection point of the wastewater from several buildings flowing via gravity and five chambers. The STP holds and treats the wastewater being generated. Sewage from the septic tank will be transferred to the lifting station and transported to the STP by the pumping system. The existing STP is of Sequencing Batch Reactor (SBR) type. It is being operated and maintained by technically skilled personnel to ensure the proper operation of the plant. The treated sewage was used for non-potable purposes such as landscape watering, road cleaning, fire reserve, and equipment cleaning. The excess treated wastewater was being discharged to the receiving bodies of water. Prior to discharge and reuse, wastewater quality testing and analysis were conducted to ensure that the quality was compliant with the DENR standard.

Material Recovery Facility

Batangas State University, in line with its commitment to environmental sustainability, has been integrating the Material Recovery Facility (MRF) into its waste management framework. This facility efficiently segregates and processes various recyclable materials, including paper, plastics, and metals, derived from the university's waste streams. By leveraging the MRF, BatStateU-The NEU aims to significantly reduce its contribution to landfills, while also promoting the conservation of natural resources. This initiative exemplifies the University's responsible waste management and cultivates a culture of environmental consciousness among its students and staff, instilling the values of recycling and eco-friendliness within the campus community.

Composting Facility

Extending the efforts on waste management, BatStateU also has a composting facility that is instrumental in processing organic waste generated within the university, including food scraps, yard trimmings, and other biodegradable materials. By utilizing the composting facility, the BatStateU-The NEU effectively reduces its organic waste footprint while simultaneously producing nutrient-rich compost that is being used as organic fertilizers in campus gardens, tree planting drives, and agricultural projects.

GHG Emissions

2,785.61 tCO_2-e

TOTAL GHG EMISSIONS

Recognizing the urgent need to address climate change, Batangas State University- The NEU actively measures its GHG emissions and monitors its carbon footprint. By undertaking this crucial step, we aim to transparently assess our environmental impact and set targets for reducing our emissions.

Direct Emissions

SCOPE 1

71.7 tCO_2-e

GHG Emission from vehicle fuel consumption

Indirect Emissions

SCOPE 2

2,617 tCO_2-e

GHG Emission from purchased electricity

Indirect Emissions

SCOPE 3

96.41 tCO_2-e

GHG Emission from waste generation, water consumption and treatment and university officials' flight and accommodations.

In 2022, the university has a total of 2,785.61 tCO_2-e computed GHG emissions. Among the scopes of emissions, purchased electricity contributes to 94% of the total GHG emissions. This was followed by the indirect emissions which constitute 3.4% of the total emissions from university-owned facilities. The remaining 2.6% of emissions came from the university vehicle fuel consumption.

Environmental Sustainability

The NEU is committed to fostering a sustainable future through a multitude of initiatives aimed at raising awareness and taking concrete actions for environmental conservation. From dynamic awareness campaigns and enlightening lectures to hands-on activities like tree planting and beach clean-ups, we're dedicated to nurturing a culture of environmental consciousness within our campus community and beyond.

BatStateU collaborates with carbon sequestration expert, Dr. Marte Gutierrez to lead the creation of the University Climate Action Plan

To better craft a climate change action plan inclusive of the university's needs and resources, the BatStateU Action Center and Center for Sustainable Development invited Dr. Marte Gutierrez to share his expertise on climate change mitigation and adaptation strategies. Dr. Gutierrez is a J.R. Paden Distinguished Professor in the Department of Civil and Environmental Engineering at the Colorado School of Mines, USA. He is currently working on the geological sequestration of carbon dioxide (CO2) to mitigate climate change. His lecture served as a convention that provided meaningful discussion about the origins, evidence for, and manifestations of climate change.

Participants include the University's Climate Change Action Plan (UCCAP) Committee, Heads of Environmental Units and Sustainability Development Officers of each constituent campus, and the University Student Council. Through this initiative, the university aims to develop a climate change action plan that meets the holistic sustainability goals and pursues green, resilient, and inclusive development.

BatStateU sows seeds of sustainability in tree planting drives

Annually, Batangas State University conducts tree planting drives across its campuses. In 2022, a total of 1,500 tree seedlings encompassing a diverse range of species including Caballero, Narra, Red Nato, Bitaog, and Cupang, were distributed among the constituent and extension campuses of BatStateU. The concerted effort of students, faculty, and employees saw these saplings find their roots both on the university grounds, on private land, and in designated areas across the Batangas Province.

The tree planting events not only symbolized a proactive approach towards environmental conservation but also underscored the commitment of BatStateU towards sustainable development and fostering a greener, healthier future.

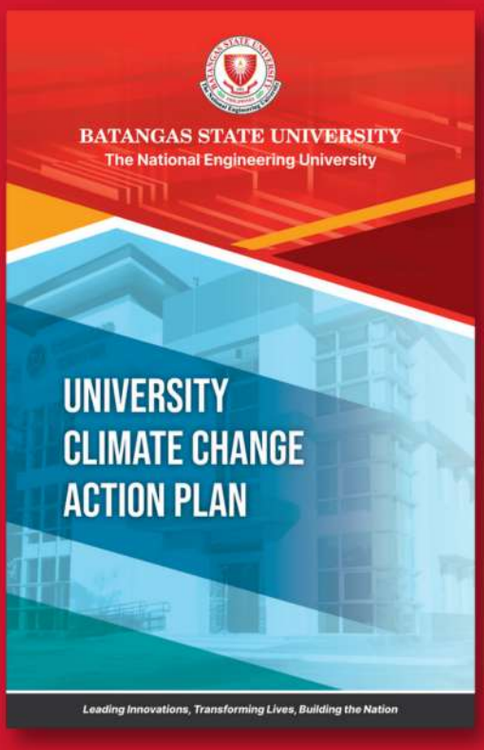
BatStateU ACTION Center empowers IMT through Lecture Series and Training

In celebration of National Disaster Resiliency Month, BatStateu-The NEU ACTION Center conducted a three-lecture series and training to ensure that BatStateU Members of the Incident Management Team (IMT) such as Operation Section Chief, Security Officers, Search, and Rescue and Security Officers, medical officers, and building marshals across all campuses will continue to acquire knowledge and skills on safety and preparedness for specific hazards particularly responding to emergency situations inside the University premises. The lecture series includes First Aid and Basic Life Support (BLS)- CPR demonstration, bomb threat preparedness and response training, disaster risk management training, and school-based defensive firefighting lecture and demonstration.

Development of UCCAP

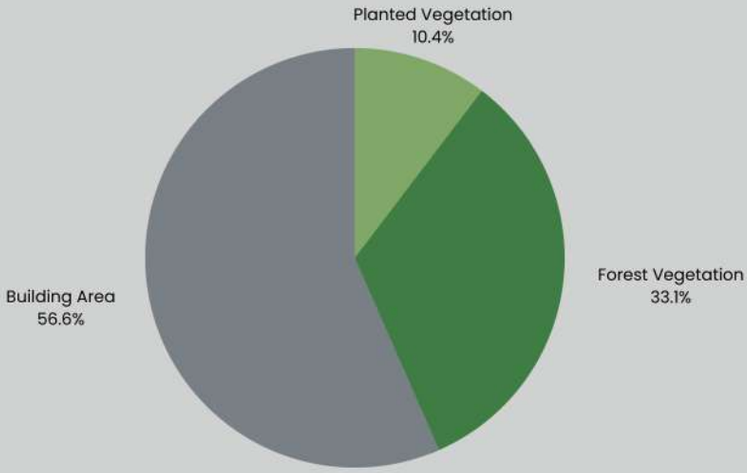
The Batangas State University Board of Regents, through Resolution No. 136, S. 2022 approved the University Climate Change Action Plan (UCCAP).

The UCCAP aims to address climate change challenges and align the university with legal mandates and frameworks while implementing various mitigation and adaptation initiatives. As part of global efforts to combat climate change, Batangas State University is committed to reducing its carbon footprint and enhancing its resilience to climate-related impacts. This action plan is driven by legal mandates and frameworks, including international agreements like the Paris Agreement and national legislation addressing climate change.



The UCCAP development followed a consultative and collaborative process, involving stakeholders from across the university community. A dedicated Climate Core Team was formed, consisting of experts in climate science, sustainability, education, and administration. This team played a central role in formulating and executing the plan.

Green Spaces



Proportion of Green Spaces in the University Land Area

The University takes a proactive stance on environmental sustainability by prioritizing the planting of native and drought-resistant trees on its campus. This initiative not only enhances local biodiversity but also showcases water-conscious planting practices. Choosing native trees supports the ecosystem and requires less maintenance, aligning with the University's eco-friendly goals. Additionally, the focus on drought-resistant trees contributes to water conservation efforts.

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BIODIVERSITY

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As of 2022, a total of 80 tree species out of 130 and a total of 98 plant species out of 203 planted across the university campuses are native and drought-tolerant trees and plant.

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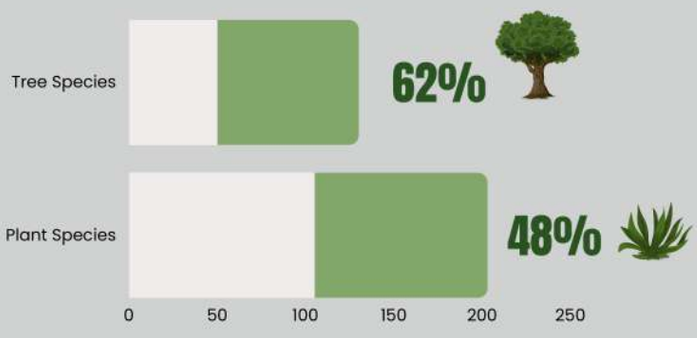

Proportion of Drought Tolerant Trees and Plants

Sulambi VOSA and SSC ARASOF-Nasugbu partners with Philippine Red Cross for Lifesaving Blood Donation Drive

Volunteerism takes center stage once again as Sulambi VOSA, a volunteer organization of BatStateU-The NEU and Supreme Student Council of ARASOF-Nasugbu joins forces with the Philippine Red Cross - Batangas Chapter to host a blood donation drive aimed at providing adequate and safe blood for patients in need.

Volunteers seamlessly coordinated with Red Cross staff, efficiently guiding donors through the process - from registration to medical checks. The day culminated in 178 bags of life-giving blood, potentially impacting up to 534 lives.

The blood donation drive is part of the Sulambi VOSA's ongoing "EXTEND" initiative and Project Rhythm of Hearts by SSC Nasugbu. This successful drive reinforces the lasting impact of united community efforts in saving lives.

3 GOOD HEALTH AND WELL-BEING

SDGs in Volunteerism

14 LIFE BELOW WATER

Student leaders, volunteers engage in 2022 International Coastal Clean Up Day

In support of the goal of engaging people in removing trash in coastal areas and raising awareness on the extent of the marine debris problem, student leaders and volunteers from BatStateU The NEU - Alangilan participated in the 2022 International Coastal Clean Up Day in Anilao, Mabini, Batangas, September 17. In partnership with the National Training Service Program - Alangilan, Council of Organization Presidents (COP), and the local Mabini Tourism Office, the Supreme Student Council Alangilan led the activity as part of their Project RGB. Described as a way to bring "cleanliness and purity" to coastal areas around the world, the participants removed and collected litter and debris along the shoreline in Anilao, Batangas. Along with the participants from the university, the activity was also participated by local government units and organizations from Mabini, Batangas.

Cross-Sectoral Partnerships for the Goals

LINC CALABARZON'S E-KAPIHAN Discussing Social Issues and Innovation

The Linking Innovation Networks for Competitiveness in Calabarzon (LINC Calabarzon) in collaboration with the Batangas State University's Social Innovation Research Center, organized a virtual program, called e-Kapihan, which served as a platform for discussing emerging social issues and concerns in the region. The program covered a range of topics such as agriculture, ICT, and more. Key speakers from various fields, including private businesses, government officials, and academic institutions, were invited to share their news and updates related to the chosen topics.

BatStateU-The NEU successfully sets off to stage the Inclusive Innovation Conference 2022

Served as a platform for key stakeholders in the academe, industry, and government to take stock of the country's programs and initiatives in innovation and entrepreneurship, Inclusive Innovation Conference 2022 reset innovation goals and strategies and launched collaborative programs on innovation and entrepreneurship among stakeholders in the public and private sectors. The conference centered on the theme "Leadership in Innovation: Key to Sustained Competitiveness and Economic Growth. It featured keynote speakers who shared their insights and experiences on various topics related to innovation, including technology commercialization, inclusive innovation and sustainability.

Indian Maritime University and BatStateU-The NEU seals partnership to boost Blue Economy

On November 9, 2022, Batangas State University (BatStateU), the Philippines's National Engineering University, forged a partnership with the Indian Maritime University (IMU) to enhance academic collaboration in diverse marine-related programs. This partnership serves as a significant step in expanding the University's international linkages and solidifying its position as a leader in engineering education. BatStateU recently offered BS in Naval Architecture and Marine Engineering. as one of the emerging engineering programs. All these coupled with the University's firm commitment to protect, conserve, and manage strategically the marine biodiversity in the Verde Island Passage (VIP) are seen as instrumental by the institution to successfully develop professional graduates ready for entry as active participants and competent leaders in the industrialized world.

Regional Futures Consortium Workshop

Eleven state universities and colleges from Regions IV-A and IV-B convened at BatStateU-The NEU Pablo Borbon on December 15, 2022, for the Regional Futures Consortium Workshop: High-Level Anticipatory Leadership and Governance Executive Course Day 3. The conference, which was initiated by the Senate Committee on Sustainable Development Goals, Innovation, and Futures Thinking, aimed to bring together the brightest minds in the region to discuss and come up with creative solutions to the challenges that their communities are currently facing by using Futures Thinking concepts and tools.

The conference was a showcase of the significant role that Futures Thinking can play in addressing regional and national issues. Participants engaged in thought-provoking discussions and interactive workshops, where they explored the use of foresight and transformative futures to create a brighter future.

BatStateU's Sustainability Networks

- Member Institution of Sustainable Development Solutions Network Philippines
- Member of Special Regional Committee on Sustainable Development Goals
- Member of Provincial Advisory Council, Batangas Province
- Board Member, Batangas Coastal Resource Management Foundation
- BatStateU- The NEU as Regional Inclusive Innovation Center in Region IV-A
- Member, Southern Tagalog Agriculture, Aquatic, and Resources Research Development and Extension Consortium (STAARRDEC)

Advancing Sustainable Futures

Driving Data-Based Solutions

In the next years, Batangas State University National Engineering University is poised to embark on a groundbreaking journey towards heightened sustainability. At the heart of this transformative endeavor lies the innovative development of the Sustainability Assessment Tool (SAT), GHG Emissions Accounting Tool and Offsetting Plan, Climate Budget Tagging, and the implementations of the various programs, projects, and activities aligned with the sustainability policies of the university.

Towards Carbon Neutral University

Our University Climate Change Action Plan (UCCAP) will be the guiding roadmap that will propel our sustainability endeavors forward, with a primary focus on our GHG emissions accounting and offsetting plan, as well as our climate budget tagging initiatives. Through emissions tracking, the University will gain a comprehensive understanding of our carbon footprint, enabling us to set tangible reduction targets across various sources, from energy usage to waste management. By investing in offsetting strategies like reforestation and renewable energy projects, we will ensure a balanced approach towards carbon neutrality.

Concurrently, our commitment to climate budget tagging will ensure transparent financial allocation, directing resources toward impactful sustainability projects. This approach will foster a culture of eco-conscious decision-making, driving innovation, enhancing our reputation, and aligning us with global climate objectives. Ultimately, the UCCAP will serve as a catalyst for education, resilience, and positive change, making our university a beacon of sustainability and a responsible steward of the environment.

Envisioning a Future of Sustainability and Inclusivity

The University is embarking on a transformative path that prioritizes producing graduates with a deep-rooted sustainability mindset. It is also committed to equipping our students with the knowledge and skills to drive positive change in the world, integrating ecological, social, and economic principles into every facet of their education. The University stands as a living example of sustainable practices, showcasing responsible resource management and serving as a hub of inclusive learning, where diversity is celebrated and every individual's potential is nurtured.

Through interdisciplinary programs, innovative research, and a campus-wide dedication to efficiency, we will lead by example, inspiring our students to become agents of change who address pressing global challenges. Our commitment to accessibility ensures that education knows no boundaries, opening doors for all members of society. By fostering a culture of sustainability, inclusivity, and responsible resource use, Batangas State University- The National Engineering University aims to create a lasting legacy of leadership that reshapes our world for the better.

Thank You

Center for Sustainable Development

BatStateU - The NEU focal point and resource center for programs and initiatives on sustainable development.

Resources:

- BatStateU Chronicles Vol. VIII No. 1-4 (January to December Issues)
- Research, Development, and Extension Services (RDES) Annual Report (2022)

Website
www.sustainability.batstate-u.edu.ph