BULACAN AGRICULTURAL STATE COLLEGE

Soon to be Bulacan State Agricultural University (RA 11783)

SHAPING MINDS, TRANSFORMING LIVES

BASC 2024 SUSTAINABILITY REPORT

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I. MESSAGE FROM THE PRESIDENT

JAMESON H. TAN CESE (SGD)

SUC PRESIDENT III

As we transition toward our vision of becoming the **Bulacan State Agricultural University**, our commitment to 'Shaping Minds and Transforming Lives' has never been more intertwined with the health of our planet. This 2024 Sustainability Report reflects our journey from a small community school in 1952 to a Level III SUC that leads in agricultural innovation.

Our mission to provide excellent instruction and foster community engagement is now defined by our ability to adapt to a changing climate. From achieving **ISO 9001:2015 certification** to integrating AI-driven solar irrigation, we are proving that tradition and technology can coexist to create a greener future for Central Luzon. We don't just teach sustainability; we live it through every seedling planted and every student empowered.

II. MESSAGE FROM THE VICE PRESIDENTS

DR. RONALD REAGAN T. ALONZO

Vice President, Administration and Finance

Sustainability in administration is about the responsible stewardship of our resources. In 2024, we prioritized the **rehabilitation of existing facilities**—such as the Food Innovation Center and our campus laboratories—to extend their lifespan and reduce our environmental footprint. By investing in pedestrian-friendly pathways and smart infrastructure, we are ensuring that BASC remains a 'walking campus' that promotes health while reducing carbon emissions. Our financial strategies are now firmly rooted in the 'RITE' core values, ensuring that every investment supports a resilient and sustainable institution.

II. MESSAGE FROM THE VICE PRESIDENTS

DR. CECILIA S. SANTIAGO

Vice President, Academic Affairs

At the heart of our academic mission is the integration of the **United Nations Sustainable Development Goals (SDGs)** into our curriculum. Across our three campuses, from the Main Campus in Pinaod to the specialized programs in DRT, we are preparing over 13,000 students to be the next generation of environmental leaders. By training our faculty in 'Teacher Education for Sustainable Development' and fostering programs like the **Bachelor of Science in Agroforestry**, we ensure that our graduates possess both the technical competence and the ethical framework necessary to develop our country sustainably.

II. MESSAGE FROM THE VICE PRESIDENTS

DR. HONEYLET J. NICOLAS

Vice President, Research Extension, Production and Development

Research at BASC is the engine of our sustainability efforts. This year, we have made significant strides in the **circular economy**, transforming agricultural waste into valuable resources through nutrient recovery and the development of bio-composite seedling pots. Our extension projects, like the **'SIBOL' initiative** and our work with the Dumagat people, translate our laboratory successes into community-wide resilience. Through our 'One Health' approach and climate-smart research like the Palayaman study, we continue to bridge the gap between scientific innovation and the sustainable well-being of our community.

III. UNIVERSITY PROFILE

BRIEF HISTORY OF BASC

The beginnings of Bulacan Agricultural State College went back to the time when in 1952 the Plaridel Community Agricultural High School with only 100 students was established at Bintog, Plaridel, Bulacan. Soon after, it was renamed Bulacan Provincial Agricultural High School. Due to the nationalization of existing agricultural schools in 1953, under Republic Act 948 it was renamed Bulacan National Agricultural High School (BNAHS). In 1955, Proclamation 163 was issued reserving for the site of the BNAHS around 192.5 hectares of the Buenavista Estate in San Ildefonso, Bulacan. In June 21,1959, through Republic Act 2416, BNAHS was converted to Bulacan National Agricultural School (BuNAS). Thirty-nine years after, on February 24, 1998, BuNAS was converted as a state college by virtue of Republic Act No. 8548.

Bulacan Agricultural State College remains the first and only state-run higher educational institution of agriculture in Bulacan. For the past 23 years of existence as a state college, it has become an educational anchor for the poor but deserving students in Bulacan and the whole Central Luzon Region. It is one of the 55 out of 106 State Universities and Colleges in the country with Level III status based on CMO No. 09, s. 2019 issued by the Commission on Higher Education.

Three past presidents led the Bulacan Agricultural State College, Dr. Rolando F. Camacho (Dec. 9,1998- Dec. 8, 2002); Dr. Josie A. Valdez (Dec. 9, 2002-Jan. 31,2011) and Dr. Gerardo Mendoza (Feb. 1, 2011-Jan. 31, 2019) before Dr. Jameson H. Tan assumed as the 4th BASC President on February 1, 2019.

At present, the College has three campuses, and two extension classes in three of the sixth legislative districts of Bulacan. The Main Campus is located in Brgy. Pinaod, San Ildefonso with the College of Agriculture Campus at Brgy. Poblacion, San Ildefonso while the DRT Campus, established in 2005 is located at Brgy. Sapang Bulak, Doña Remedios Trinidad (3rd District). The offering of extension programs under Memorandum of Agreement are located at BTVC-BNAHS, Brgy. Pulong Bayabas, Balagtas (5th District) and DepEd Bulacan-FFHNAS, Brgy. Guyong, Sta. Maria (6th District).

Through the initiative and leadership of Congresswoman Lorna C. Silverio, House Bill 8111, "An Act converting BASC into Bulacan State Agricultural University" successfully passed at the House of Representatives and has been approved in the First Reading at Senate of the Philippines under Senate Bill 2106.

The Bulacan Agricultural State College has held on tight to its commitment made several years ago. Unprecedented growth in all its programs has been paying off especially in terms of educational benefits to countless students and families in the region. As it undergoes the process of transforming into a state university, BASC remains committed to offer the best that the students could possibly get in a truly accessible, relevant and quality education, hence, the motto: "Shaping Minds, Transforming Lives".

III. UNIVERSITY PROFILE

VISION

A globally engaged higher education institution of agriculture and allied disciplines.

MISSION

Provide excellent instruction, conduct relevant research and foster community engagement that produce highly competent graduates necessary for the development of the country.

CORE VALUES

The four (4) core values institutionalized as a way of the BASC community are:

R - Relevance

I - Integrity

T - Truth

E - Excellence

IV. ABOUT BASC

A. Curricular Program Offering

The Bulacan Agricultural State Colleges offers the following curricular programs

BASC Main Campus – Pinaod

Institute of Arts and Sciences

- Bachelor of Science in Development Communication

Institute of Computer Studies

- Bachelor of Science in Information Technology

College of Engineering and Technology

- Bachelor of Science in Geodetic Engineering
- Bachelor of Science in Agricultural and Biosystems Engineering
- Bachelor of Science in Food Technology

College of Education and Graduate School of Education

- Doctor of Philosophy in Educational Management
- Master of Arts in Education
  - Major: Educational Management, Science
- Bachelor of Secondary Education
  - Major: English, Science
- Bachelor of Elementary Education

College of Management

- Doctor of Philosophy in Business Administration (PUP Consortium)
- Master of Arts in Business Administration (PUP Consortium)
- Bachelor of Science in Business Administration
  - Major: Marketing Management
- Bachelor of Science in Agribusiness
- Bachelor of Science in Hospitality Management
  - Major: Hotel and Restaurant Management

IV. ABOUT BASC

BASC – College of Agriculture Campus – Población

College of Agriculture and Graduate School of Agriculture

- Doctor of Philosophy in Agricultural Sciences
  - Major: Animal Science,
- Master of Science in Agriculture
  - Major: Animal Science, Agricultural Extension, Horticulture
- Bachelor of Science in Agriculture
  - Major: Animal Science, Crop Science, Horticulture, Agricultural Extension, Agricultural Economics

Institute of Veterinary Medicine

- Doctor of Veterinary Medicine

BASC – Institute of Environmental Sciences and Agroforestry - DRT

- Bachelor of Science in Agroforestry
- Bachelor of Elementary Education

IV. ABOUT BASC

B. Accreditations

Level IV Re-accredited

- Bachelor of Science in Agribusiness

Level III Re-accredited

- Bachelor of Science in Agriculture
- Bachelor of Science in Information Technology
- Bachelor of Elementary Education
- Bachelor of Secondary Education

Level II Re-accredited

- Bachelor of Science in Agricultural and Biosystems Engineering
- Bachelor of Science in Food Technology
- Bachelor of Science in Hospitality Management
- Master of Arts in Education
- Master of Science in Agriculture
- Bachelor of Science in Business Administration
- Bachelor of Science in Geodetic Engineering
- Bachelor of Science in Agroforestry

Candidate

- Bachelor of Elementary Education (DRT Campus)

C. ISO

ISO 9001:2015 Certified by Bureau Veritas on the Provision of Tertiary Education and Advanced Education, including Support to Operations (Instruction, Research, Extension, Production and Development) and General Administrative and Finance Services.

IV. ABOUT BASC

D. International Rankings

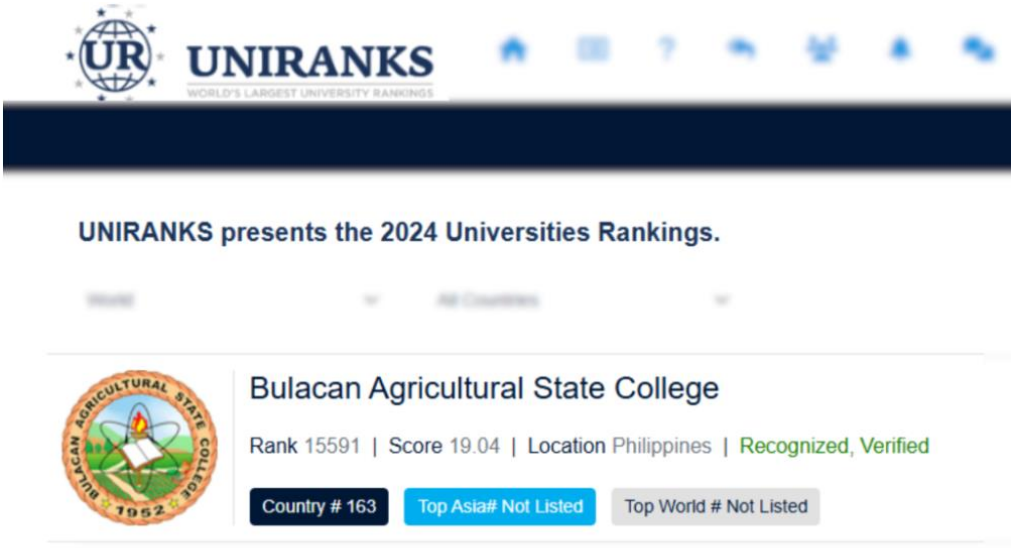
UI GreenMetrics World University Rankings 2024

The Bulacan Agricultural State College Ranked 13th in the Philippines, 276th in Asia, and 506th globally in the UI GreenMetric World University Rankings 2024. This remarkable achievement underscore's BASC's commitment to sustainability and environmental stewardship.

IV. ABOUT BASC

UNIRANKS 2024

The Bulacan Agricultural State College ranked 163rd in the Philippines in the released UniRanks 2024. This recognition underscores BASC's commitment to providing quality education and fostering a culture of academic excellence and institutional growth.



IV. ABOUT BASC

E. Student Population for 2024 by gender, graduate, undergraduate

BASC Main Campus

Program	2nd Semester 2023-2024		TOTAL	1st Semester 2024-2025		TOTAL	GRAND TOTAL
	Male	Male		Male	Female		
Graduate Program							
PhD Dev Education	0	2	2	0	1	1	3
PhD Ed Mgt	29	50	79	32	49	81	160
MAEd Ed Mgt	46	136	182	64	159	223	405
MAEd Science	14	40	54	20	39	59	113
MAED Math	0	1	1	0	0	1	2
MIT	0	0	0	7	5	12	12
DBA	0	0	0	1	1	2	2
MBA	0	0	0	7	9	16	16
Undergraduate Program							
BEED	40	232	272	35	223	258	530
BSED English	65	290	355	89	297	386	741
BSED Science	44	149	193	44	141	185	378
BSDC	23	62	85	40	127	167	252
BSABEn	114	94	208	107	96	203	411
BSFT	31	70	101	47	70	117	218
BSGE	169	124	293	169	128	297	590
BSIT	436	184	620	563	248	811	1431
BSAB	99	125	224	255	223	478	702
BSAM	188	248	436	162	192	354	790
BSBA	233	632	865	282	712	994	1859
BSHM	397	648	1045	503	793	1296	2341
TOTAL	1816	2796		2427	3513		
GRAND TOTAL	5015			5941			10956

IV. ABOUT BASC

BASC CA Campus

Program	2nd Semester 2023-2024		TOTAL	1st Semester 2024-2025		TOTAL	GRAND TOTAL
	Male	Female		Male	Female		
Graduate Program							
PhD An Sci	1	3	4	0	0	0	4
PhD Horti	2	1	3	0	0	0	3
MSA Ag Ext	12	13	25	12	15	27	52
MSA An. Sci.	7	13	20	12	11	23	43
MSA Horticulture	3	5	8	1	7	8	16
Undergraduate Program							
BSA An Scie	568	259	827	50	34	84	911
BSA Crop Sci	69	47	116	36	28	64	180
BSA Horticulture	50	36	86	14	8	22	108
BSA Ag. Ext.	20	7	27	39	29	68	95
BSA Crop Sci (Agronomy)	55	32	87	40	25	65	152
BSA Crop Sci. (Horti.)	51	33	84	563	339	902	986
BSA (CAS)	350	177	527	64	173	237	764
DVM	51	125	176	50	34	84	260
TOTAL	1239	751		881	703		
GRAND TOTAL	1990			1584			3574

BASC DRT Campus

Program	2nd Semester 2023-2024		TOTAL	1st Semester 2024-2025		TOTAL	GRAND TOTAL
	Male	Male		Male	Female		
BEED	21	77	98	27	98	125	223
BSAF	82	88	170	95	103	198	368
TOTAL	103	165		122	201		
GRAND TOTAL	268			323			591

IV. ABOUT BASC

F. Faculty and Employee Profile for 2024

Teaching

Tenure	2nd Semester 2023-2024		TOTAL	1st Semester 2024-2025		TOTAL
	Male	Female		Male	Female	
Permanent/ Plantilla	41	61	102	46	65	111
Temporary	21	19	40	25	15	40
Contract of Service	26	23	49	23	26	49
Total	88	103	191	94	106	200
Grand total	191			200		

Non-Teaching

Tenure	2nd Semester 2023-2024		TOTAL	1st Semester 2024-2025		TOTAL
	Male	Female		Male	Female	
Permanent/ Plantilla	26	43	69	26	42	68
Job Order	48	37	85	49	36	85
Total	74	80	154	75	78	153
Grand total	154			153		

V. KEY SUSTAINABILITY EFFORTS

1. Setting and Infrastructure (SI)

Bulacan Agricultural State College (BASC) maintains a strategic focus on expanding and modernizing its physical infrastructure while strictly adhering to a master plan that prioritizes open, green spaces and agricultural land preservation. The college operates across multiple sites, including the Main Campus in San Ildefonso and the DRT Campus, each serving as a living laboratory for sustainable agriculture. Recent institutional investments have prioritized the creation of multi-functional green spaces, such as the construction of the BASC Food Park near the New Site Campus, which serves as a communal hub designed to integrate natural landscapes with student services. To improve campus accessibility and reduce the environmental impact of soil erosion, the college completed the concreting of pathways connecting primary academic structures.

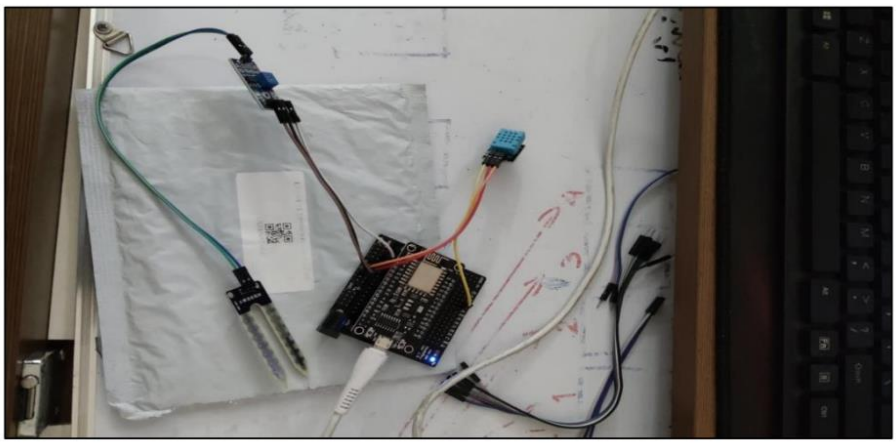
Infrastructure sustainability is further evidenced by a robust rehabilitation program for existing facilities, which extends the lifespan of buildings and reduces the need for resource-intensive new construction. Notable projects include the comprehensive repair and improvement of the Food Innovation Center, the Food Technology Building, and the New Hostel. Ongoing projects, such as the various repairs at the BASC Dormitory and the Information Technology Laboratory, ensure that student living and learning environments meet modern safety and efficiency standards. Moreover, the college actively expands its green canopy through organized tree-planting activities, such as those held by the College of Engineering and Technology (CET) during World Engineering Week and the College of Agriculture and Veterinary Medicine (CAVM) at the Old IA facility, reinforcing the institution's role as a carbon sink in the region.

V. KEY SUSTAINABILITY EFFORTS

2. Energy and Climate Change (EC)

The institution is aggressively pursuing the integration of renewable energy and smart technology to mitigate its carbon footprint and adapt to shifting climate patterns. A flagship project in this category is the implementation and validation of Solar Energy-Based Artificial Intelligence (AI) algorithms for smart irrigation systems. This initiative leverages Internet of Things (IoT) technology to automate the irrigation of high-value crops like cherry tomatoes and broccoli, ensuring that energy use is optimized and sourced from renewable solar power. By utilizing AI to monitor soil conditions and environmental variables, the system reduces the energy load typically required for manual or traditional mechanical irrigation.

Implementation And Validation of Solar Energy-Based Artificial Intelligence Algorithm for Smart Irrigation System for High-Valued Crops Cherry Tomatoes and Broccoli using Internet of Things (Iot) (A Basc Automated System for Improved Agricultural Irrigation - Phase 2)



Hardware components integrated to the system.

V. KEY SUSTAINABILITY EFFORTS

Implementation And Validation of Solar Energy-Based Artificial Intelligence Algorithm for Smart Irrigation System for High-Valued Crops Cherry Tomatoes and Broccoli using Internet of Things (Iot) (A Basc Automated System for Improved Agricultural Irrigation - Phase 2)

Received seeds from PhilRice.

Climate change resilience is also a key administrative priority. Internally, the college is moving toward energy-efficient operations by upgrading essential laboratory equipment, such as the acquisition of new thermal equipment and the rehabilitation of ceiling structures in the IED building to improve natural cooling and ventilation. These efforts are complemented by faculty training in "Transformative Leadership" and "AI Adoption in the Public Sector," ensuring that the workforce is capable of managing complex, tech-driven sustainability initiatives.

V. KEY SUSTAINABILITY EFFORTS

3. Waste (WS)

BASC's waste management framework is transitioning from a traditional disposal model to a sophisticated circular economy approach, focusing on the valorization of agricultural and campus-generated waste. A major institutional milestone is the "GAD-Responsive Waste-to-Resource Initiative," which aims to institutionalize waste recovery processes that empower the campus community. This is supported by specialized research, such as the valorization of carabao waste via electrocoagulation, a process designed to recover vital nutrients from livestock waste for use in hydroponic systems, thereby preventing nutrient runoff and methane emissions from untreated manure.

The college is also actively seeking to eliminate non-biodegradable waste from its agricultural operations through the development of bio-composites. Researchers have successfully prototyped seedling bags and pots made from spent coffee grounds and ginger pulp, offering a sustainable, biodegradable alternative to plastic nursery materials. In terms of campus-wide waste reduction, the institution has conducted studies like the "Food Court Services Satisfaction" survey and solid waste characterization to identify areas where consumption and waste generation can be minimized. These efforts are further extended to the local community through extension projects like the "SIBOL" (Systematic Innovation Building for Online Livelihood) project, which helps local farmers adopt digital tools to streamline supply chains and reduce post-harvest waste.

Bulacan Farmers Adoption to Digital Technology, Project SIBOL: Systematic Innovation Building for Online Livelihood

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V. KEY SUSTAINABILITY EFFORTS

RESEARCH, EXTENSION PRODUCTION & DEVELOPMENT

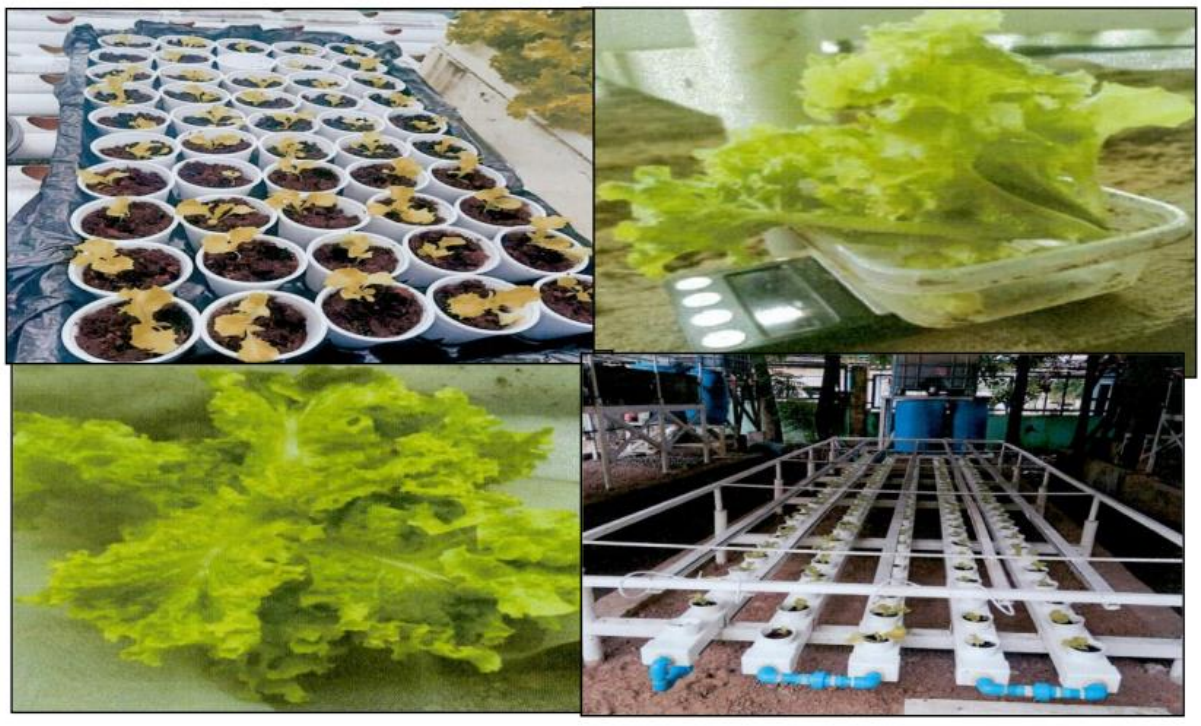
Status of Research Projects

Faculty	*Implement ation*	*Project Title*	*Funding Agency*	*Remarks*
Mr. John Arrden F. Octaviano Ms.		KULINARYA BULACAN:	Internally	Awaiting
Dr. Rodrigo G. Buenaventura Dr. Billy Joe V. Villena	October 2023-February 2024	Faculty, Staff and Students Satisfaction on BASC-Food Court Services	Internally funded	Completed and submitted terminal report February 2024.

4. Water (WR)

Water stewardship at BASC is characterized by the dual approach of technological innovation in irrigation and rigorous maintenance of campus water infrastructure. To address the challenge of water scarcity in agriculture, the college has pioneered research into intensified vertical modular hydroponics with root zone cooling and floating-raft aquaponics systems. These systems are designed to maximize water efficiency by recycling nutrient-rich water through closed-loop systems, significantly reducing the volume of water required per unit of crop produced compared to traditional soil-based farming.

Evaluation Of Peri-Urban Floating-Raft Aquaponics System



V. KEY SUSTAINABILITY EFFORTS

Operational water conservation is managed through the regular maintenance and repair of campus deep wells, such as the facility at the FFHNAS Sta. Maria Campus, ensuring that the primary water sources remain functional and leak-free. Additionally, the institution has focused on improving comfort room facilities across various academic buildings, including the repair of ceiling and plumbing systems in the IED building to prevent water wastage from aging infrastructure. The college also integrates water safety into its broader research agenda through projects like "Linking Science Education and Community Health," which includes collaborative studies on campus water safety to ensure that the institution's water management practices protect both environmental and public health.

Infrastructure Projects/ Repair	ESTIMATED COST	Source of Fund	STATUS
8. Repair of Deep well in FFHNAS Sta. Maria Campus	34,945.00	INCOME	completed

5. Transportation (TR)

Sustainable transportation at BASC is facilitated through infrastructure design that prioritizes pedestrians and administrative policies that optimize vehicle usage. The college has significantly expanded its concrete pathway network, specifically connecting major hubs like Cayetano Hall 1, to encourage students and faculty to traverse the campus on foot rather than relying on internal shuttle services or private vehicles. This "walking campus" strategy is vital for reducing on-campus carbon emissions and promoting a healthier lifestyle for the college community.

In terms of external transportation, the college manages its fleet with an emphasis on efficiency. For required activities such as student OJT monitoring and community extension visits, the administration coordinates schedules to ensure that staff travel in groups, thereby reducing the number of individual trips made to regional partner sites like the Philippine Rice Research Institute and various breeding corporations. Furthermore, the college provided student and employee parking areas to better manage vehicle volume on campus and by participating in professional development sessions on "Smart Cities" and "AI Adoption," which provide the conceptual framework for developing more integrated and low-impact transportation systems.

V. KEY SUSTAINABILITY EFFORTS

V. KEY SUSTAINABILITY EFFORTS

6. Education and Research (ED)

Sustainability is the cornerstone of BASC's academic identity, with a curriculum and research agenda that are deeply aligned with the United Nations Sustainable Development Goals (SDGs). Faculty development is a high priority, with members attending international conventions such as the 54th PAFTE National and 15th International Convention, specifically focused on "Teacher Education for Sustainable Development". This ensures that sustainability concepts are not just extracurricular but are integrated into the core learning outcomes of programs in agriculture, engineering, and education.

The research portfolio of BASC is a testament to its commitment to environmental and social sustainability. Key ongoing projects include:

- Palayamanan: A long-term study on the sustainability of diversified and integrated rice-based farming systems in upland and rainfed areas of Central Luzon.
- Greening the Community: An extension initiative promoting urban gardening to enhance local food security and neighborhood sustainability.

Uplifting The Livelihood of BASC Students Through Urban Gardening

Enhancing The Dry Direct Seeding Package of Technology For Increased Rice Production in Central Luzon

Sustainability of Diversified and Integrated Rice-based Farming System (Palayamanan) in Upland and Rainfed Areas in Central Luzon

V. KEY SUSTAINABILITY EFFORTS

HAPPENING NOW: hands-on training workshop titled "Greening the Community: Training on Urban Gardening"

- Biochar-Facilitated Remediation: Research into using biochar to restore degraded landscapes in the Doña Remedios Trinidad area, improving soil health and carbon sequestration.

RESEARCH

COLLEGE OF AGRICULTURE		
	TITLE	**FACULTY/STAFF INVOLVED**
3	**Biochar-Facilitated Remediation of Soil- Degraded Landscape in Doña Remedios Trinidad, Bulacan**	Rodelio T. Alejo, Jr., Project Leader Cindy S. Cruz Clara Nina C. Manlutac Isabel Samantha C. Belonio John Paul Elizer M. Ubaldo

- One Health Promotion: A project dedicated to sustainable health practices in the animal sector of Bulacan, recognizing the link between environmental, animal, and human health.

V. KEY SUSTAINABILITY EFFORTS

The conduct of the 22nd Agency In-house Review of Completed and On-going Research and Development or Extension Projects, held at the BASC Farmers' Training Center on August 28, 2024, was a resounding success, drawing over 150 attendees from the institute, Local Government Units (LGUs), and other partner agencies. This year's theme, "*Strengthening Research and Extension toward One Health and Sustainable Development*," truly encapsulated the collaborative spirit of our event.

- Community Capacity Building: Initiatives like "Capacitating Dumagat People" and training for women-led integrated backyard farming ensure that sustainable practices are shared with marginalized groups to create lasting social impact.

ACADEMIC AFFAIRS
Quarterly Accomplishment Report
The following accomplishments were achieved by the undersigned for the period covering May - July 2024.

INSTITUTIONAL DEVELOPMENT

Date	Activity	Venue/Funding Agency	Faculty/Personnel/Staff
July 5, 2024	Capacitating Dumagat People in the Process of Obtaining a Driver's License	BASC-DRT Campus	BASC-DRT Faculty

V. KEY SUSTAINABILITY EFFORTS

Conclusion: Cultivating a Resilient Future

The 2024 Sustainability Report underscores **Bulacan Agricultural State College's (BASC)** successful transition from a traditional community school to a forward-thinking **Level III State University and College** poised for university status. By weaving the **United Nations Sustainable Development Goals (SDGs)** into the fabric of its academic curriculum, research initiatives, and campus operations, BASC has proven that educational excellence is inseparable from environmental stewardship.

Our journey this year has been defined by three key pillars of progress:

- **Technological Innovation:** From **AI-driven solar irrigation** to the development of **biodegradable bio-composite seedling pots**, BASC is at the forefront of merging agricultural tradition with smart technology.
- **Resource Stewardship:** Through the **"walking campus"** initiative and a robust **circular economy framework** that transforms agricultural waste into resources, the college has significantly reduced its environmental footprint while promoting community health.
- **Community Resilience:** Our commitment extends beyond our gates through projects like **"SIBOL"** and the **"One Health"** approach, ensuring that our research translates into tangible well-being for the people of Bulacan and the Dumagat community.

As BASC evolves into the **Bulacan State Agricultural University**, we remain steadfast in our mission of **"Shaping Minds and Transforming Lives"**. We are not merely observers of a changing climate; we are active architects of a greener, more sustainable future for Central Luzon and beyond.

Bulacan Agricultural State College

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