

# FROM CAMPUS INITIATIVES TO GLOBAL IMPACT: LINKING A CATHOLIC UNIVERSITY'S SUSTAINABILITY PROGRAMS TO THE SUSTAINABLE DEVELOPMENT GOALS THROUGH THE UI GREENMETRIC LENS

Darin Jan Tindowen  
University Research and Innovation Office  
University of Saint Louis  
Tuguegarao City, Philippines

Belman Millan  
University Research and Innovation Office  
University of Saint Louis  
Tuguegarao City, Philippines

**Abstract—** This study examined the alignment of the University of Saint Louis Tuguegarao's (USLT) sustainability programs with the United Nations Sustainable Development Goals (SDGs) through the lens of the UI GreenMetric World University Ranking framework. Utilizing a descriptive–evaluative design, institutional data were gathered from university offices, sustainability reports, and documentation of campus-wide initiatives. The analysis focused on six UI GreenMetric criteria: Setting and Infrastructure; Energy and Climate Change; Waste; Water; Transportation; and Education and Research, to determine the scope and depth of SDG integration within university operations, governance, and academic functions. Findings revealed that USLT's sustainability programs are strongly aligned with ten key SDGs, primarily SDG 3 (Good Health and Well-being), SDG 4 (Quality Education), SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), SDG 15 (Life on Land), and SDG 17 (Partnerships for the Goals). The results demonstrate that USLT's sustainability initiatives extend beyond environmental management, encompassing social inclusion, ethical governance, and community engagement. Education and research emerged as the most comprehensive domains, addressing all 17 SDGs through curriculum integration, service learning, and faculty–student research on sustainability. The study concludes that USLT's sustainability framework exemplifies how a faith-based higher education institution can operationalize the global SDGs within its local context.

**Keywords—** Sustainability, Sustainable Development Goals (SDGs), UI GreenMetric, higher education, University of Saint Louis Tuguegarao, sustainability governance

## I. INTRODUCTION

Sustainability has become an essential agenda in higher education, as universities are increasingly recognized not only as centers of learning and research but also as models for environmentally and socially responsible practices. Higher education institutions are uniquely positioned to contribute to the United Nations Sustainable Development Goals (SDGs), translating campus-level initiatives into meaningful contributions to global development targets (Fia, et al., 2022; Adhikari & Shrestha, 2024). The integration of sustainability principles in operations, research, and community engagement allows universities to address pressing environmental, social, and economic challenges while fostering a culture of responsibility among students, faculty, and staff.

In recent years, Philippine universities have increasingly recognized the importance of integrating sustainability into their operations, curricula, and research programs (Duran & Mariñas, 2024). Institutions have launched a variety of initiatives aimed at reducing environmental impact and promoting social responsibility. These initiatives include energy efficiency projects, such as the adoption of renewable energy sources and the installation of energy-efficient lighting and appliances; green campus programs, which focus on the development of sustainable infrastructure, green spaces, and eco-friendly campus designs; waste management and water conservation systems, encompassing recycling programs, proper hazardous waste disposal, rainwater harvesting, and water treatment facilities; and sustainability-focused curricula and research, which incorporate environmental education, climate change studies, and community outreach projects related to sustainable development. Despite these efforts, there remains a critical gap in systematically evaluating the alignment of these programs with the United Nations

Sustainable Development Goals (SDGs) (Allen, et al., 2021). Most universities have documented the outputs and local benefits of their sustainability initiatives, but there is limited evidence on how these programs collectively advance global development priorities. Without a structured assessment linking campus initiatives to the SDGs, universities risk implementing programs that may generate short-term or localized benefits but fall short of achieving broader, long-term sustainability objectives. Systematic evaluation is therefore essential not only for measuring institutional performance but also for ensuring that Philippine higher education institutions contribute meaningfully to national and global sustainability agendas (Gutierrez-Mijares, et al., 2023).

The UI GreenMetric World University Rankings, established by Universitas Indonesia in 2010, has become one of the most widely recognized frameworks for evaluating sustainability performance in higher education institutions worldwide. The ranking system assesses universities based on six core criteria: Setting and Infrastructure, which examines the design, green spaces, and sustainability of campus buildings; Energy and Climate Change, which evaluates energy consumption, renewable energy adoption, and greenhouse gas reduction initiatives; Waste, which considers waste management practices, recycling programs, and circular economy approaches; Water, which measures water conservation, efficiency, and treatment systems; Transportation, which assesses sustainable mobility, including public transport, cycling infrastructure, and fuel-efficient vehicle use; and Education and Research, which focuses on curriculum integration, research output, and awareness campaigns related to sustainability (Universitas Indonesia, 2024). By applying this framework, universities can systematically benchmark their sustainability initiatives against international standards and peer institutions, identifying both strengths and areas requiring improvement. The detailed scoring system allows institutions to measure the effectiveness of their policies, programs, and infrastructure in promoting environmental stewardship, social responsibility, and operational efficiency. Moreover, the framework facilitates the alignment of university initiatives with the Sustainable Development Goals (SDGs), helping institutions translate local campus actions into contributions to global sustainability objectives. Through repeated application of the GreenMetric assessment, universities are able to monitor progress over time, demonstrate accountability, and develop strategic plans to enhance their overall sustainability impact.

The University of Saint Louis Tuguegarao (USLT), a leading higher education institution in the Cagayan Valley region, has demonstrated a strong and growing commitment to sustainability by implementing a range of initiatives across multiple domains. These efforts include improvements in campus infrastructure, such as the development of energy-efficient buildings, green spaces, and environmentally friendly facilities; energy and climate management programs, aimed at reducing greenhouse gas emissions, optimizing electricity consumption, and exploring renewable energy alternatives; and

waste and water reduction strategies, encompassing comprehensive recycling programs, proper disposal of hazardous materials, water conservation systems, and rainwater harvesting projects. Additionally, USLT has promoted sustainable transportation, providing options such as campus shuttles, bike-friendly pathways, and measures to encourage fuel-efficient commuting. Complementing these operational efforts, the university has integrated sustainability into education and research programs, offering courses, workshops, and research projects focused on environmental stewardship, climate action, and sustainable development practices. In recognition of these initiatives, USLT was ranked 661st worldwide and 24th in the Philippines in the 2024 UI GreenMetric World University Rankings, reflecting not only the university's growing visibility and credibility in sustainability assessment but also its active contribution to global sustainability standards.

Despite these achievements, there is limited documentation and evaluation of how USLT's sustainability initiatives align with the SDGs. While individual programs have produced measurable outcomes at the campus level, their collective contribution to global development goals remains unclear. Systematic mapping of these programs against the SDGs can provide insights into strengths, gaps, and opportunities for enhancing the university's impact on sustainable development (Alcantara-Rubio, et al., 2022; Adams, et al., 2023). By linking local campus initiatives to global development targets, the research aims to provide a clearer understanding of the university's role in advancing sustainable development, and to offer actionable recommendations for strengthening the integration and effectiveness of its sustainability programs.

## **Research Objective**

This paper examined how the University of Saint Louis Tuguegarao's (USLT) sustainability programs align with and contribute to the Sustainable Development Goals (SDGs) based on the six criteria of the UI GreenMetric World University Rankings.

## **Significance of the Study**

This study holds significance in advancing the University of Saint Louis Tuguegarao's (USLT) commitment to institutional sustainability by providing a systematic assessment of its programs and initiatives through the framework of the UI GreenMetric World University Rankings. By analyzing the university's sustainability efforts across six core dimensions—Setting and Infrastructure, Energy and Climate Change, Waste, Water, Transportation, and Education and Research—the research elucidates how these initiatives contribute to the realization of the Sustainable Development Goals (SDGs). The findings are expected to offer a holistic view of USLT's sustainability landscape, demonstrating how localized campus initiatives collectively translate into measurable contributions to global development objectives. Beyond serving as an internal

evaluation tool, this study contributes to the broader discourse on sustainability in higher education. The mapping of university programs to specific SDGs provides actionable insights for institutional leaders and policymakers in designing, implementing, and monitoring sustainability strategies that are both evidence-based and globally aligned. Furthermore, the study underscores the transformative role of universities as catalysts for sustainable development, offering a model for other higher education institutions seeking to integrate the SDGs into their operational, academic, and research functions.

## II. METHODS

The study employed a descriptive-qualitative research design utilizing a documentary analysis and mapping approach to systematically identify and categorize the University of Saint Louis Tuguegarao's (USLT) sustainability programs under the six criteria of the UI GreenMetric World University Rankings—Setting and Infrastructure, Energy and Climate Change, Waste, Water, Transportation, and Education and Research—and for determining their alignment with the Sustainable Development Goals (SDGs). The researchers used instruments developed based on the UI GreenMetric framework and the United Nations Sustainable Development Goals.

Data collection was conducted in several stages. First, an inventory of sustainability programs was undertaken through document review and coordination with relevant offices. Each identified program was then classified under the appropriate UI GreenMetric criterion using the established checklist. Program heads were subsequently invited for key informant interviews to validate the classification and to provide details on program objectives, outputs, and outcomes. The research team then performed SDG mapping, rating each program's level of alignment with the SDGs using the three-point scale. All data were organized and consolidated in an electronic database for further analysis.

Data were analyzed using content and thematic analysis, complemented by descriptive statistics. Qualitative data obtained from documents and interviews were coded and categorized according to the six UI GreenMetric criteria and the 17 SDGs. Quantitative data from the SDG alignment ratings were summarized using frequency counts, averages, and weighted scores to determine the degree of program alignment. Findings were presented in matrices, charts, and narrative summaries that illustrated the patterns of alignment between USLT's sustainability programs and the SDGs. Insights and gaps identified from the analysis were then synthesized to formulate strategic recommendations for enhancing the integration and impact of sustainability initiatives within the university.

## III. RESULTS AND DISCUSSION

Table 1. USLT Sustainability Programs and SDG Alignment along Setting and Infrastructure

Sustainability Program/Initiative	Program Description	SDG Alignment
Centralized Comfort Rooms	Construction of centralized, eco-friendly restroom facilities to improve hygiene and reduce water wastage	SDG 3 – Good Health and Well Being
		SDG 6 – Clean Water and Sanitation
		SDG 9 – Industry, Innovation, and Infrastructure
Green Campus Development	Landscaping and creation of eco-friendly campus spaces, including tree planting and gardens	SDG 11- Sustainable Cities & Communities
		SDG 13 - Climate Action
		SDG 15 – Life on Land
Improved Security and Safety Facilities	Installation of CCTVs, human scanners, and lighting systems across all campuses to ensure a safe, secure, and resilient learning environment	SDG 3 – Good Health & Well-being
		SDG 11 – Sustainable Cities & Communities
		SDG 16 – Peace, Justice & Strong Institutions
University Wellness Program	Establishment of a comprehensive wellness network including the University Clinic, Wellness Center, Guidance Center, Campus Ministry, Center for Culture and the Arts, and Sports Office to promote holistic student and employee well-being	SDG 3 – Good Health & Well-being
		SDG 4 – Quality Education
		SDG 5 – Gender Equality
		SDG 11 – Sustainable Cities & Communities

Campus Facilities for Persons with Disabilities, Special Needs, and Maternity Care	Provision of ramps, accessible pathways, nursing stations, and priority facilities to support inclusivity and care for all campus members	SDG 17 – Partnerships for the Goals
		SDG 8 – Decent Work and Economic Growth
		SDG 3 – Good Health & Well-being
		SDG 4 – Quality Education
		SDG 5 – Gender Equality
		SDG 11 – Sustainable Cities & Communities
		SDG 10 – Reduced Inequalities
		SDG 8 – Decent Work and Economic Growth

The results show that the University of Saint Louis Tuguegarao (USLT) has implemented a wide range of initiatives under the Setting and Infrastructure category that align with 10 of the 17 Sustainable Development Goals (SDGs). These programs demonstrate that sustainability in higher education extends beyond environmental concerns and encompasses health, inclusivity, safety, and institutional resilience. The alignment with SDGs 3, 4, 5, 6, 8, 9, 10, 11, 15, and 16 illustrates the university's commitment to an integrated approach to sustainable campus management.

The Centralized Comfort Rooms project exemplifies the university's commitment to both sanitation and resource efficiency. By centralizing restroom facilities and using eco-friendly fixtures, USLT supports SDG 6 (Clean Water and Sanitation) through reduced water consumption, while also improving hygiene and public health consistent with SDG 3 (Good Health and Well-being). The initiative's use of modern, durable, and water-saving infrastructure also connects to SDG 9 (Industry, Innovation, and Infrastructure), showing how technological design choices can have direct sustainability benefits. Similarly, the Green Campus Development program highlights USLT's proactive role in environmental protection and climate adaptation. The continuous expansion of green spaces, tree planting, and landscape management programs fosters biodiversity and contributes to SDG 15 (Life on Land).

These green areas help mitigate urban heat island effects and enhance air quality, aligning with SDG 13 (Climate Action) and SDG 11 (Sustainable Cities and Communities). Beyond their environmental value, these spaces also serve as educational and social areas that cultivate environmental awareness and a sense of stewardship among students and staff.

Safety and resilience have also been prioritized through the Improved Security and Safety Facilities initiative. The installation of CCTV cameras, lighting systems, and human scanners ensures that the university remains a secure and inclusive environment for all. These improvements directly support SDG 16 (Peace, Justice, and Strong Institutions) by promoting just and peaceful learning environments. They also uphold SDG 3 (Good Health and Well-being) by reducing risks associated with accidents, harassment, or other safety concerns, while contributing to SDG 11 (Sustainable Cities and Communities) through resilient campus planning. The University Wellness Program demonstrates the university's holistic understanding of sustainability as including physical, mental, social, and spiritual well-being. Through the network of the Wellness Center, Guidance Office, University Clinic, Campus Ministry, Center for Culture and the Arts, and Sports Office, the program cultivates a supportive campus culture that promotes health, personal growth, and engagement. This initiative contributes to multiple SDGs—including SDG 3 (Health), SDG 4 (Education), SDG 5 (Gender Equality), SDG 8 (Decent Work), SDG 11 (Communities), and SDG 17 (Partnerships)—showing that sustainability is not achieved through facilities alone but through integrated institutional support systems that foster human flourishing.

The university's Facilities for Persons with Disabilities, Special Needs, and Maternity Care reinforce the institution's commitment to accessibility and inclusion. The construction of ramps, nursing stations, and accessible pathways reflects compliance with the principles of universal design, ensuring that all members of the university community can participate fully in academic life. These efforts directly advance SDG 10 (Reduced Inequalities) and SDG 5 (Gender Equality), while also linking to SDGs 3, 4, 8, and 11, which focus on well-being, education, and sustainable community life.

Overall, USLT's Setting and Infrastructure initiatives highlight the university's effort to make its campus not only environmentally sustainable but also socially responsive and inclusive. With 10 SDGs directly supported, this category reflects one of the university's strongest contributions to sustainability. It underscores how infrastructure, when guided by sustainability principles, becomes a foundation for a safe, equitable, and thriving learning environment.

Table 2. USLT Sustainability Programs and SDG Alignment along Energy and Climate Change

Sustainability Program/Initiative	Program Description	SDG Alignment
Solar Panel Installation	Use of renewable energy in selected buildings to reduce electricity consumption	SDG 7 – Affordable & Clean Energy
		SDG 13 – Climate Action
		SDG 9 – Industry, Innovation, and Infrastructure
		SDG 12 – Responsible Consumption and Production
Energy Audits	Regular monitoring of campus energy use to identify reduction strategies	SDG 7 – Affordable & Clean Energy
		SDG 13 – Climate Action
		SDG 8 – Decent Work and Economic Growth
University-Wide and Student-Led Climate Change Seminars, Trainings, and Awareness Campaigns	Organization of lectures, forums, and capacity-building programs to promote understanding of climate change mitigation and adaptation among students and staff	SDG 4 – Quality Education
		SDG 7 – Affordable & Clean Energy
		SDG 11 – Sustainable Cities & Communities
		SDG 13 – Climate Action
Tree Legacy Program	Implementation of tree planting, nurturing, and weeding activities to enhance carbon	SDG 13 – Climate Action
		SDG 3 – Good Health

	sequestration, reduce heat island effects, and promote biodiversity	and Well-being
		SDG 15 – Life on Land
		SDG 11 – Sustainable Cities & Communities
Kaibigan ng Kalikasan Program	University-wide initiatives focused on recycling and environmental stewardship	SDG 17 – Partnerships for the Goals
		SDG 12 – Responsible Consumption & Production
		SDG 15 – Life on Land

USLT's sustainability programs under Energy and Climate Change exhibit a strategic and multidimensional approach that integrates renewable energy, environmental education, and community participation. Collectively, these initiatives align with ten Sustainable Development Goals (SDGs) — namely SDGs 3, 4, 7, 8, 9, 11, 12, 13, 15, and 17 — reflecting the university's deep commitment to promoting a sustainable, resilient, and energy-conscious academic environment. The Solar Panel Installation program exemplifies the university's leadership in renewable energy adoption. By integrating solar technology into selected campus buildings, USLT actively supports SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action) while promoting innovation in infrastructure consistent with SDG 9 (Industry, Innovation, and Infrastructure). Additionally, it contributes to SDG 12 (Responsible Consumption and Production) by minimizing reliance on conventional energy sources, and to SDG 8 (Decent Work and Economic Growth) by providing opportunities for green jobs and technical training during installation and maintenance. This initiative positions USLT as a model for higher education institutions adopting clean energy transitions within a regional context.

The Energy Audits complement the renewable energy initiative by establishing an evidence-based system for managing consumption and identifying efficiency measures. Through continuous monitoring and data-driven decision-making, USLT ensures that its energy policies are both responsive and sustainable. This initiative advances SDG 7, SDG 13, and SDG 8 by fostering a culture of operational accountability while supporting local employment and skills development in energy management and environmental monitoring. Education and awareness remain central to USLT's sustainability efforts, as reflected in its University-Wide and Student-Led Climate Change Seminars, Trainings, and Awareness Campaigns. These programs contribute to SDG 4 (Quality Education) and SDG 13 (Climate Action) by equipping students and personnel with scientific knowledge and adaptive capacities for addressing environmental challenges. Their participatory and

partnership-driven nature also fulfills SDG 17 (Partnerships for the Goals) and SDG 11 (Sustainable Cities and Communities). Furthermore, the involvement of faculty and student organizations fosters leadership and career development consistent with SDG 8 (Decent Work and Economic Growth), as sustainability-related competencies increasingly form part of employable skills in today's green economy.

The Tree Legacy Program highlights the university's ecological stewardship and long-term commitment to carbon sequestration and biodiversity. By engaging the university community in tree planting, nurturing, and weeding activities, USLT not only contributes to SDG 13 (Climate Action) and SDG 15 (Life on Land) but also supports SDG 3 (Good Health and Well-being) through the creation of greener and healthier learning environments. Moreover, the program's collaborative nature — involving local government units, partner schools, and civic organizations — strengthens SDG 17 (Partnerships for the Goals) and SDG 11 (Sustainable Cities and Communities). It demonstrates that climate action can also serve as a unifying social activity that enhances environmental responsibility. Finally, the Kaibigan ng Kalikasan Program reflects USLT's commitment to promoting environmental responsibility through recycling and waste reduction. This initiative reinforces SDG 12 (Responsible Consumption and Production) by encouraging behavioral change and sustainable resource management, while also addressing SDG 13 (Climate Action) and SDG 15 (Life on Land). Its focus on stewardship and advocacy fosters a sense of shared responsibility among students and employees, reinforcing environmental consciousness as part of the university's cultural identity.

Overall, USLT's initiatives under Energy and Climate Change illustrate how a university can operationalize sustainability not only through technological innovations but also through education, advocacy, and partnerships. The alignment with 10 SDGs reflects the breadth and depth of USLT's contribution to global climate action — encompassing clean energy generation, responsible consumption, decent employment, environmental protection, and inclusive community engagement. This integrated framework positions USLT as an exemplar of higher education leadership in climate-responsive campus management.

Table 3. USLT Sustainability Programs and SDG Alignment along Waste Management

Sustainability Program/Initiative	Program Description	SDG Alignment
Bawal Plastic Program	Campus-wide campaign to minimize single-use plastics	SDG 12 – Responsible Consumption & Production
		SDG 14 – Life Below Water
		SDG 3 – Good Health

Recycling Program	Segregation and recycling of paper, plastics, and e-waste across campus	and Well-being
		SDG 12 – Responsible Consumption & Production
		SDG 13 – Climate Action
Waste Reduction and Composting Facility	Converts biodegradable waste from cafeterias and grounds into compost for use in landscaping	SDG 9 – Industry, Innovation, and Infrastructure
		SDG 12 – Responsible Consumption & Production
		SDG 15 – Life on Land
		SDG 2 – Zero Hunger
University-Wide and Student-Led Activities and Information Campaigns on Waste Management	Conducts seminars, workshops, and awareness drives on proper waste segregation, reduction, and recycling practices, engaging students and personnel	SDG 6 – Clean Water and Sanitation
		SDG 4 – Quality Education
		SDG 11 – Sustainable Cities & Communities
		SDG 12 – Responsible Consumption & Production
		SDG 17 – Partnerships for the Goals

The University of Saint Louis Tuguegarao's (USLT) waste management initiatives reveal a holistic approach that integrates policy, education, infrastructure, and behavioral change, all contributing to ten Sustainable Development Goals (SDGs)—specifically SDGs 2, 3, 4, 6, 9, 11, 12, 13, 14, and 15. This alignment highlights the university's multidimensional understanding of sustainability, recognizing waste not merely as a by-product of consumption but as a key driver for environmental stewardship, innovation, and community well-being. The Bawal Plastic Program represents a cornerstone of USLT's environmental initiatives. By implementing a strict ban on single-use plastics within the campus, the university directly addresses SDG 12 (Responsible Consumption and Production) and SDG 14 (Life Below Water), as the policy reduces plastic pollution that could otherwise harm marine and aquatic

ecosystems. The program also strengthens SDG 3 (Good Health and Well-being) by maintaining cleaner surroundings and minimizing waste-related health hazards. Beyond compliance, this program cultivates eco-conscious habits among students and staff, reinforcing the idea that sustainable action begins with individual responsibility.

The Recycling Program expands this effort by embedding circular economy principles into daily operations. Through proper segregation and recycling of paper, plastics, and e-waste, the university contributes to SDG 9 (Industry, Innovation, and Infrastructure) by encouraging technological innovation in waste processing and sustainable materials management. This initiative also advances SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action), as recycling reduces greenhouse gas emissions associated with landfills and raw material extraction. The presence of visible recycling bins and dedicated waste collection points across the campus symbolizes USLT's structural commitment to sustainability. The establishment of a Waste Reduction and Composting Facility reflects the university's shift toward a closed-loop waste system. By transforming biodegradable waste from cafeterias and campus maintenance into organic compost, the program contributes to SDG 2 (Zero Hunger) by producing material that could support local agriculture and greening efforts, and SDG 15 (Life on Land) by restoring soil fertility. It also advances SDG 6 (Clean Water and Sanitation), as composting minimizes waste runoff and water pollution. More importantly, the facility operationalizes SDG 12, serving as a tangible example of how higher education institutions can model sustainable production systems within their own ecosystems.

Meanwhile, University-Wide and Student-Led Activities and Information Campaigns on Waste Management illustrate the educational and participatory dimensions of USLT's sustainability framework. These initiatives connect the university's waste policies to SDG 4 (Quality Education) through environmental learning and awareness, and to SDG 17 (Partnerships for the Goals) by fostering collaboration among students, faculty, and community stakeholders. The integration of seminars, workshops, and contests strengthens campus engagement and reinforces responsible waste behavior as a shared responsibility. The inclusion of health and environmental messages in these campaigns also contributes to SDG 3 (Good Health and Well-being), underscoring the relationship between environmental cleanliness and human wellness.

Taken together, these programs demonstrate that USLT's waste management efforts extend well beyond compliance with environmental regulations. They embody an integrated and educationally anchored sustainability strategy that contributes to ten SDGs, advancing both environmental quality and community resilience. This comprehensive alignment strengthens the university's position in the UI GreenMetric World University Rankings, underscoring its role as a model

institution in promoting environmental responsibility and global citizenship in higher education.

Table 4. USLT Sustainability Programs and SDG Alignment along Water Management

Sustainability Program/Initiative	Program Description	SDG Alignment
Rainwater Harvesting	Collection and use of rainwater for landscaping and non-potable purposes	SDG 6 – Clean Water & Sanitation
		SDG 12 – Responsible Consumption & Production
		SDG 11 – Sustainable Cities and Communities
		SDG 15 – Life on Land
Water-saving Devices	Installation of low-flow faucets and toilets to reduce water consumption	SDG 6 – Clean Water & Sanitation
		SDG 12 – Responsible Consumption & Production
		SDG 9 – Industry, Innovation and Infrastructure
Bring Your Tumbler Campaign	Initiative to reduce disposable cup use and encourage use of reusable containers	SDG 12 – Responsible Consumption & Production
		SDG 3 – Good Health & Well-being
University-Wide and Student-Led Activities on Water Management	Conducts seminars, training sessions, and information campaigns to raise awareness on water conservation, efficiency, and pollution prevention	SDG 4 – Quality Education
		SDG 6 – Clean Water & Sanitation
		SDG 13 – Climate Action
		SDG 17 – Partnerships for the Goals

The University of Saint Louis Tuguegarao (USLT) has implemented a series of innovative programs and initiatives addressing water conservation and management, reflecting its strong commitment to environmental sustainability and

responsible resource use. These programs collectively contribute to ten Sustainable Development Goals (SDGs) — namely SDGs 3, 4, 6, 7, 9, 11, 12, 13, 14, and 15 — demonstrating that USLT’s efforts in water stewardship extend beyond operational efficiency to encompass education, community engagement, and ecosystem protection.

The Rainwater Harvesting system is a cornerstone of the university’s green infrastructure. By capturing and reusing rainwater for landscaping and other non-potable purposes, USLT directly advances SDG 6 (Clean Water and Sanitation) and SDG 12 (Responsible Consumption and Production) through efficient water resource management. Furthermore, this initiative supports SDG 11 (Sustainable Cities and Communities) by reducing demand on municipal water systems and SDG 15 (Life on Land) and SDG 14 (Life Below Water) by minimizing surface runoff that can carry pollutants to terrestrial and aquatic ecosystems. Beyond the environmental benefits, the program also serves as a visible model of practical sustainability for students and visitors, reinforcing environmental consciousness through design. Complementing this is the installation of Water-saving Devices such as low-flow faucets, dual-flush toilets, and automated shut-off systems. These technologies significantly reduce water consumption while promoting SDG 9 (Industry, Innovation and Infrastructure) through the adoption of sustainable engineering solutions. Additionally, because water supply and treatment processes require substantial energy, such efficiency measures also align with SDG 7 (Affordable and Clean Energy) by reducing the energy footprint associated with water use. This initiative exemplifies how technological innovation and responsible consumption can work hand in hand to conserve natural resources.

The Bring Your Tumbler Campaign demonstrates USLT’s effort to integrate behavioral change into its sustainability agenda. This initiative encourages students, faculty, and staff to reduce the use of disposable plastic cups and bottles, contributing to SDG 12 (Responsible Consumption and Production) and SDG 13 (Climate Action) by reducing waste generation and the carbon footprint of single-use products. The campaign also supports SDG 3 (Good Health and Well-being) by promoting hydration practices that are safe, healthy, and environmentally friendly. Through strong visibility in campus cafeterias and events, this program exemplifies how small, habitual actions can collectively create meaningful environmental impact. Meanwhile, University-Wide and Student-Led Activities on Water Management further demonstrate the university’s dedication to environmental education and community participation. Through seminars, workshops, and awareness drives, the initiative enhances students’ understanding of water efficiency, conservation, and pollution prevention. This directly supports SDG 4 (Quality Education) by embedding sustainability literacy into the academic experience and SDG 17 (Partnerships for the Goals) by encouraging collaboration among students, faculty, and external organizations. By linking water management to

broader climate and sustainability themes, these activities also reinforce SDG 13 (Climate Action), highlighting the interconnectedness of environmental and human systems.

Overall, USLT’s water management initiatives reflect a comprehensive and integrative approach to sustainability that goes beyond infrastructure and policy. By aligning its programs with ten SDGs, the university not only conserves one of the planet’s most vital resources but also nurtures a culture of environmental responsibility within the academic community. These efforts demonstrate that effective water stewardship in higher education can simultaneously address social, environmental, and economic dimensions of sustainable development.

Table 5. USLT Sustainability Programs and SDG Alignment along Transportation

<b>Sustainability Program/Initiative</b>	<b>Program Description</b>	<b>SDG Alignment</b>
Campus Shuttle Service	Reducing reliance on individual vehicles to lower emissions	SDG 11 – Sustainable Cities & Communities
		SDG 13 – Climate Action
		SDG 7 – Affordable and Clean Energy
		SDG 9 – Industry, Innovation and Infrastructure
		SDG 16 – Peace, Justice, and Strong Institutions
Cycling Infrastructure	Bicycle lanes and racks to promote sustainable commuting	SDG 11 – Sustainable Cities & Communities
		SDG 13 – Climate Action
		SDG 3 – Good Health & Well-being
		SDG 15 – Life on Land
Promotion of E-Vehicles	Encouraging the use of electric vehicles on campus to reduce carbon emissions	SDG 11 – Sustainable Cities & Communities



		SDG 13 – Climate Action
		SDG 17 – Partnerships for the Goals
		SDG 4 – Quality Education
Optimizing Campus Parking to Promote Sustainable Mobility	Strategic management of parking spaces to encourage use of alternative, low-emission transportation	SDG 11 – Sustainable Cities & Communities
		SDG 13 – Climate Action
		SDG 12 – Responsible Consumption and Production
		SDG 8 – Decent Work and Economic Growth
		SDG 5 – Gender Equality

The University of Saint Louis Tuguegarao (USLT) demonstrates its dedication to sustainable mobility through various transportation programs that integrate environmental responsibility, social inclusion, and institutional efficiency. Collectively, these initiatives align with ten Sustainable Development Goals (SDGs) — namely SDGs 3, 4, 5, 7, 8, 9, 11, 12, 13, 16, and 17 — highlighting the university’s comprehensive approach to creating a safe, accessible, and environmentally conscious transport system within the campus.

The Campus Shuttle Service serves as the backbone of USLT’s sustainable transport efforts. By providing a centralized mode of transportation for students and personnel, the program reduces dependence on private vehicles, thereby minimizing campus congestion and carbon emissions. This initiative supports SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action) by reducing fuel use and promoting energy-efficient commuting. It also advances SDG 9 (Industry, Innovation and Infrastructure) through investment in mobility systems that are both sustainable and modern, while contributing to SDG 8 (Decent Work and Economic Growth) by facilitating efficient access to education and work spaces. The university’s Cycling Infrastructure represents an important component of green mobility. The development of designated bike lanes and secure racks encourages cycling as an alternative means of transport. This initiative directly promotes SDG 3 (Good Health and Well-being) by integrating physical activity

into daily routines and SDG 13 (Climate Action) by reducing reliance on motorized vehicles. It also supports SDG 5 (Gender Equality) by ensuring that the infrastructure is inclusive and safe for all genders, and SDG 15 (Life on Land) by helping reduce air and noise pollution that affect biodiversity within and beyond campus.

Similarly, the Promotion of E-Vehicles underscores USLT’s forward-looking approach toward low-carbon innovation. By encouraging the use of electric vehicles for campus operations and staff transport, the university supports SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action). The integration of this initiative also demonstrates SDG 17 (Partnerships for the Goals), as it often involves collaborations with external stakeholders and technology providers to promote renewable mobility solutions. This effort positions the university as a role model for higher education institutions embracing carbon-neutral transportation systems. Meanwhile, the Optimizing Campus Parking policy illustrates USLT’s strategic management of its physical resources to promote behavioral change. By prioritizing shared rides, bicycles, and eco-friendly vehicles, the university reinforces SDG 12 (Responsible Consumption and Production) and SDG 11 (Sustainable Cities and Communities). The system also supports SDG 16 (Peace, Justice, and Strong Institutions) by ensuring fairness, safety, and order in mobility management through transparent and equitable campus policies. Finally, the inclusion of Awareness and Training Programs on Sustainable Transportation further extends USLT’s sustainability framework to the educational dimension. Through seminars, advocacy campaigns, and student-led initiatives, the university fosters awareness of the environmental, health, and social benefits of sustainable commuting. These initiatives advance SDG 4 (Quality Education) by embedding sustainability competencies into the learning environment and SDG 17 (Partnerships for the Goals) by engaging the broader campus community and external partners in collective climate action.

Overall, the university’s sustainable transportation initiatives exemplify a multi-dimensional strategy that integrates environmental protection, health promotion, social inclusion, and institutional governance. By aligning with ten SDGs, USLT not only reduces its ecological footprint but also models a transport ecosystem that is inclusive, energy-efficient, and future-ready — a testament to its commitment to becoming a green and resilient academic institution.

Table 6. USLT Sustainability Programs and SDG Alignment along Education and Research

Sustainability Program/Initiative	Program Description	SDG Alignment
Sustainability Curriculum Integration	Incorporating sustainability concepts across academic courses	SDG 4 – Quality Education
		SDG 12 – Responsible Consumption & Production
		SDG 13 – Climate Action
Service-Learning Program	Student engagement in community projects promoting sustainability awareness and community engagement specific to their field	SDGs 1–17 – All Goals supported through interdisciplinary action and community partnership
Sustainability Awareness Campaigns	Student and faculty-led seminars, exhibits, and information drives promoting sustainability awareness	SDG 4 – Quality Education SDG 13 – Climate Action SDG 17 – Partnerships for the Goals
Sustainability Summit and Research Conferences	Annual and regional and international events organized by USLT to disseminate sustainability research, foster collaboration, and promote SDG awareness	SDG 4 – Quality Education SDG 13 – Climate Action SDG 17 – Partnerships for the Goals
Research Projects on SDGs	Faculty and student research focusing on renewable energy, waste reduction, climate adaptation, and community resilience	SDGs 1–17 – All Goals supported through multidisciplinary research and innovation

The University of Saint Louis Tuguegarao (USLT) underscores the centrality of education and research in advancing sustainability by embedding the United Nations Sustainable Development Goals (SDGs) within its academic, research, and

outreach functions. As reflected in Table 6, the university's programs under this dimension align with all 17 SDGs, affirming its holistic approach toward fostering transformative education, community impact, and research-driven innovation.

Foremost among these initiatives is Sustainability Curriculum Integration, which ensures that sustainability themes permeate the university's instructional design. By embedding environmental ethics, sustainable technologies, and social responsibility into the curriculum, USLT nurtures learners who are not only academically competent but also environmentally and socially conscious. This initiative contributes directly to SDG 4 (Quality Education) by promoting education for sustainable development and to SDG 12 (Responsible Consumption and Production) by cultivating values and behaviors aligned with sustainability. Furthermore, through subjects that explore renewable energy and environmental stewardship, the initiative supports SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action). The Service-Learning Program serves as a cornerstone for linking education with real-world sustainability impact. Through this program, students apply classroom theories to community-based projects addressing local issues such as poverty alleviation, waste management, disaster resilience, and environmental protection. By fostering active collaboration between the university and the community, service learning operationalizes the principle of "education for transformation." This approach touches on all 17 SDGs, especially SDG 1 (No Poverty), SDG 2 (Zero Hunger), and SDG 11 (Sustainable Cities and Communities), as it empowers students to contribute to inclusive and sustainable development outcomes.

In parallel, Sustainability Awareness Campaigns and the Sustainability Summit and Research Conferences demonstrate USLT's active role in advocacy, knowledge dissemination, and multi-sectoral engagement. These programs embody the university's commitment to lifelong learning and partnership. Awareness campaigns, spearheaded by student organizations and faculty clusters, create platforms for dialogue and behavioral change that align with SDG 4 (Quality Education) and SDG 13 (Climate Action). Meanwhile, the annual sustainability summits and conferences elevate USLT's regional and international presence by providing venues for scholars, policymakers, and practitioners to share innovations and insights that strengthen SDG 17 (Partnerships for the Goals) and SDG 9 (Industry, Innovation, and Infrastructure). Finally, Research Projects on SDGs form the university's most significant contribution to knowledge creation for sustainable development. Faculty and student researchers conduct studies focusing on renewable energy, biodiversity conservation, water security, solid waste management, and social inclusion—reflecting a comprehensive alignment with all 17 SDGs. These research endeavors not only enhance the university's reputation as a hub for sustainability-oriented innovation but also provide actionable data and models that support evidence-based policymaking and community solutions across the Cagayan Valley Region.

Overall, USLT's initiatives in education and research reveal a systemic and integrative model of sustainability engagement—one that unites curriculum reform, research innovation, and community partnership. This alignment with all 17 SDGs demonstrates that the university's sustainability journey transcends environmental programs, positioning education and research as the driving forces of transformative development in both local and global contexts.

#### IV. CONCLUSION AND RECOMMENDATIONS

The assessment of the University of Saint Louis Tuguegarao's (USLT) sustainability programs through the UI GreenMetric framework reveals a comprehensive and multi-dimensional approach to advancing the Sustainable Development Goals (SDGs). Across the six criteria—Setting and Infrastructure, Energy and Climate Change, Waste, Water, Transportation, and Education and Research—USLT demonstrates a strong institutional commitment to sustainability that is both operational and developmental in nature. The university's programs are not isolated initiatives but are systematically aligned with the UN 2030 Agenda, reflecting how higher education institutions can serve as key enablers of sustainable transformation. Findings show that Setting and Infrastructure initiatives promote inclusivity, safety, and well-being, supporting at least nine SDGs, notably SDG 3 (Good Health and Well-being), SDG 11 (Sustainable Cities and Communities), and SDG 10 (Reduced Inequalities). The Energy and Climate Change programs, such as solar panel installation and climate education campaigns, advance SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action) while strengthening community resilience. Waste and Water Management initiatives reinforce responsible consumption, environmental protection, and resource efficiency, while Transportation programs promote

sustainable mobility and carbon reduction. Most notably, the Education and Research domain cuts across all 17 SDGs—illustrating how teaching, learning, and innovation at USLT are fundamentally geared toward sustainability.

#### REFERENCES

- Adams, T., Jameel, S. M., & Goggins, J. (2023). Education for sustainable development: mapping the SDGs to university curricula. *Sustainability*, 15(10), 8340.
- Adhikari, D. R., & Shrestha, P. (2024). The context and concept of higher education for sustainable development: the case of Nepal. *International Journal of Sustainability in Higher Education*, 25(2), 238-264.
- Alcántara-Rubio, L., Valderrama-Hernández, R., Solís-Espallargas, C., & Ruiz-Morales, J. (2022). The implementation of the SDGs in universities: a systematic review. *Environmental Education Research*, 28(11), 1585-1615.
- Allen, C., Metternicht, G., & Wiedmann, T. (2021). Priorities for science to support national implementation of the sustainable development goals: A review of progress and gaps. *Sustainable Development*, 29(4), 635-652.
- Duran, M. K. L., & Mariñas, K. A. (2024). Sustainability integration in Philippine higher education curricula: A structural equation modeling assessing teacher intention to integrate. *Sustainability*, 16(9), 3677.
- Fia, M., Ghasemzadeh, K., & Paletta, A. (2022). How higher education institutions walk their talk on the 2030 agenda: a systematic literature review. *Higher education policy*, 1.
- Gutierrez-Mijares, M. E., Josa, I., Casanovas-Rubio, M. D. M., & Aguado, A. (2023). Methods for assessing sustainability performance at higher education institutions: a review. *Studies in Higher Education*, 48(8), 1137-1158.
- Universitas Indonesia. (2024). *UI GreenMetric World University Rankings: Measuring sustainability performance in universities*. Universitas Indonesia. <https://greenmetric.ui.ac.id/>

---

The author/s retain the copyright to this article, with IJCESD granted first publication rights. This article is distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0>), allowing for open access.