



SUSTAINABILITY REPORT

2023

AKDENİZ UNIVERSITY

TABLE OF CONTENT

ABOUT US.....1

MISSION1

 VISION1

INTRODUCTION2

ENVIRONMENT-INFRASTRUCTURE.....8

ENERGY & CLIMATE CHANGE.....16

WASTE.....22

WATER26

TRANSPORTATION.....28

EDUCATION-RESEARCH32

ABOUT US

MISSION

With our strong research infrastructure and academically proficient and effective staff in the field, we aim to:

- Become a leader in the region, an exemplary institution in the country, and a preferred choice internationally in the field of research,
- Act as a collaborative and pioneering entity in entrepreneurship within the industry,
- Contribute to society in education by nurturing innovative, creative, and research-oriented individuals,
- Serve society and humanity with sustainable projects in the field of societal contribution,
- Enhance the academic recognition of our country and university through international collaborative projects, high-quality publications, and bilateral agreements.

VISION

To be a research university that shapes the future with universal-quality research, leading in science and technology, and nurturing research-oriented, creative, ethically aware, and lifelong-learning individuals.

INTRODUCTION

Since its establishment, Akdeniz University has aimed to create value-adding practices across the entire country, starting from the Western Mediterranean basin, through significant efforts in education, research and development, and community service.

Population growth, industrialization, and consumer habits increase pressure on the environment and natural resources. In the Eleventh Development Plan (2019-2023) published by the Presidential Strategy and Budget Office, it is stated that “environmental issues such as pollution, climate change, desertification, deforestation, biodiversity loss, and drought increasingly affect human life and the development process each day.” Accordingly, in today’s world, where demand for natural resources is rising, the sustainable management of the environment and natural resources is essential to creating livable spaces for humanity. In this context, ensuring sustainability on university campuses is a primary responsibility for universities.

Similarly, the Eleventh Development Plan (2019-2023) emphasizes the aim to “protect and improve the quality of environmental and natural resources, manage them effectively, integratively, and sustainably, implement environmentally and climate-friendly practices in all areas, and raise environmental awareness and sensitivity across all segments of society.” In line with this goal, efforts to prevent environmental pollution on campuses, and promote the sustainable use of biodiversity and natural resources are closely monitored and prioritized by university leadership with a participatory management approach.

Akdeniz University aspires to be a higher education institution that constantly strives for improvement and modernization by adopting the Sustainable Development Goals published by the United Nations in 2016, which were also accepted by our country.

Within the university, a variety of research and development activities are currently underway to implement these sustainable development goals. Expanding the scope of these activities and spreading them across all our campuses to achieve sustainability on university campuses are among the goals of our university’s administration, which prioritizes regional and national development and sustainable growth. In alignment with our institutional goals, we aim for all units of our university to adopt and implement integrative, sustainable, and mature practices.

Our university's Strategic Plan for 2022-2026 seeks to activate an agile institutional structure capable of making decisions aligned with global, national, and regional needs, benefiting from the synergy arising from our campus's multidisciplinary framework. Our university has positioned itself as a "research" institution. Considering regional priorities and high-level policy documents, the 2022-2026 Strategic Plan has identified the university's priority research areas, including the "Sustainable Environment and Energy" theme. Topics defined under this research area are as follows:

- Climate change solutions
- Efficient use of natural water resources and drought prevention
- Production technologies for alternative energy sources

These topics are essential for making sustainability a continuous practice on our campuses, and studies related to the Sustainable Environment and Energy research area are initially planned to be implemented on our central campus. In addition to the central campus, Akdeniz University continues its educational, research, and community service activities through campuses in Calli, Demre, Elmalı, Finike, Göynük, Korkuteli, Kumluca, Manavgat, and Serik. It is planned to extend the green campus approach, initially adopted on the central campus, to all our campuses. With the green campus approach, the university prioritizes activities to address regional environmental problems, mitigate the impacts of climate change, manage disasters, and improve sustainable waste and water management, with the goal of transforming our central campus into a sustainable campus.

As of the 2024 Academic Year, Akdeniz University has an enrollment of 63,856 students, with 58.1% of the total being undergraduate students and 8% graduate students.

Within the framework of societal sensitivity and contribution, Akdeniz University has carried out important projects that reflect the university's strong ties with society and its commitment to social responsibility. From 2020 to 2023, a total of 483 community contribution projects were executed. Despite the pandemic conditions during this period, these projects were meticulously planned and implemented to meet societal needs.

Following the earthquake on February 6, 2023, centered in Kahramanmaraş and affecting 11 provinces, Akdeniz University quickly mobilized, providing support to 6,000 students affected by the earthquake. Tragically, 19 of our students lost their lives in this earthquake.

In coordination with the Social Responsibility and Contribution Projects Directorate, a project titled “Support for Earthquake-Affected Children through Educational and Recreational Activities” was organized for the 3,500 earthquake victims accommodated in student dormitories after the shift to remote learning. As part of the project, psychological support services and seminars were provided, and educational and recreational activities were organized based on the interests and skills of the children and youth. These activities were conducted intensively for at least three hours every day for 10 weeks.

The “60+ Refreshment University” was established by our university and provides education to adults aged 60 and over, marking the first initiative of its kind in Turkey to support active aging for the elderly.

In 2023, the Children's University was launched with 80 students enrolled, aiming to introduce children to science at an early age.

The Geographical Indications Application and Research Center at Akdeniz University holds the distinction of being the first of its kind among Turkish universities. Covering fields like food economy and management, business administration, economics, tourism, agricultural engineering, anthropology, sociology, and law, the center has brought a new dimension to geographical indications. Cooperation protocols have been signed with numerous institutions and organizations throughout Turkey, aiming to implement projects related to geographical indications.

With the principle of equal opportunity in education, Akdeniz University’s Disability Student Unit ensures that all students have equal and effective access to educational rights. Our university undertakes many societal sensitivity and contribution activities, including accessible campus and education projects, and technology-based initiatives aimed at different disability groups.

Between 2020 and 2024, our university conducted 41 projects focused on individuals with special needs. To raise awareness of the challenges faced by disabled individuals, improve their quality of life, and create societal awareness, the “AntFest Disability Festival” was held at Akdeniz University Stadium during Disability Awareness Week.

To enhance the ability of students and visitors to access information on our services for individuals with disabilities, the beta version of the “A.U. Disability Student Unit Virtual Assistant” has been launched by the Visual Impairment Technologies Application Unit.

Akdeniz University has achieved an impact above the global average in 10 of the 16 United Nations Sustainable Development Goals (SDGs) (Figure 1). In 2023, the Sustainability Office was established at our university (Figure 2) (Source: SCiVal).

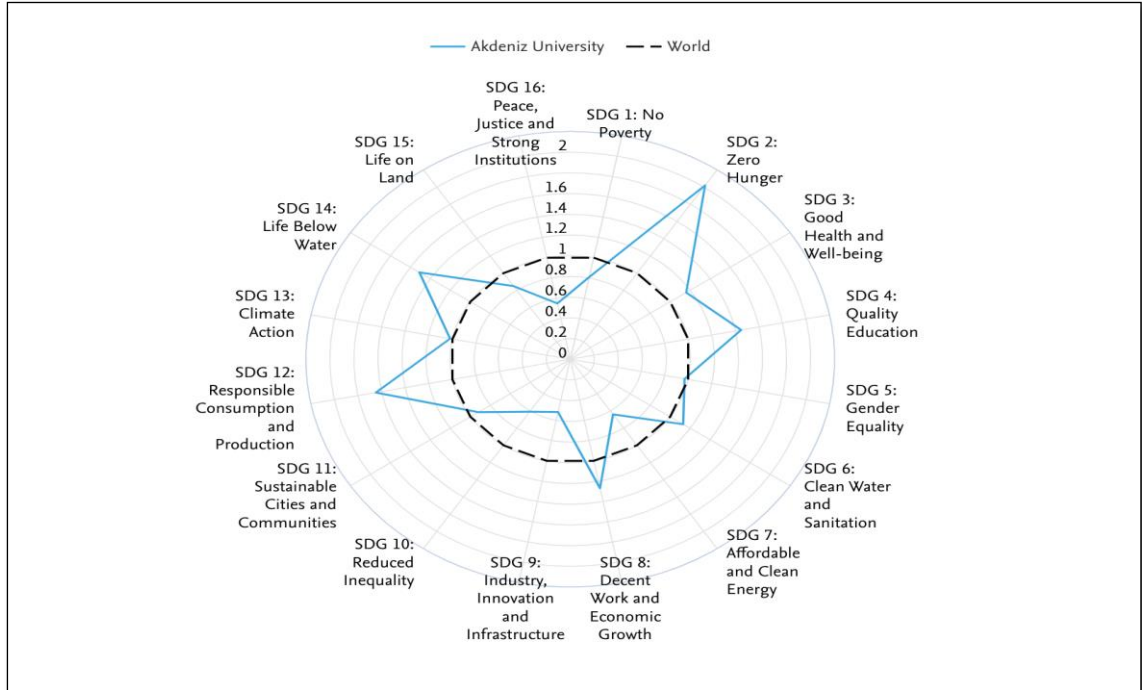


Figure 1. Akdeniz University in the Sustainable Development Goals

The screenshot shows the Akdeniz University Sustainability Office website. The header includes the university logo, the name 'Akdeniz Üniversitesi / Institutional Research and Data Management Coordinatorship', and the 'Sustainability Office' logo. A navigation menu includes 'Home', 'Sustainability Office', 'Sustainable Akdeniz University', 'Sustainability Report', 'Rankings', and 'Contact'. The main content area is titled 'Management Team' and lists the following members:

- Prof. Dr. Şükrü ÖZEN, Vice Rektör
- Prof. Dr. Ömer H. Çolak, Director of Institutional Research and Data Management Coordinatorship
- Assoc. Prof. Dr. İ. Ethem KARADİREK, Sustainability Coordinator
- Prof. Dr. Aslı S. ÇİĞGIN, Sustainability Office Member
- Assoc. Prof. Dr. Murat VAROL, Sustainability Office Member
- Dr. İsmail V. SEZGİN, Sustainability Office Member
- Elif İkem SAĞLAM (Environmental Engineer), Sustainability Office Member

Figure 2. Sustainability Office Management Board

Our mission and vision principles have been established by the Sustainability Office of our university in alignment with our sustainability principles.

Mission: To embed sustainability as a fundamental principle across all aspects of education, research, and campus operations at Akdeniz University, and to promote innovation and environmental management in collaboration with our community for a sustainable future.

Vision: To instill a culture of responsibility by integrating sustainability values into all departments and initiatives at Akdeniz University, and to be a pioneering example both locally and globally in driving sustainable development and innovation.

Akdeniz University serves as a technology provider in sustainable tourism in two of the 17 projects approved within the scope of the 1711 Artificial Intelligence Ecosystem 2nd Call. Our sustainability goals are based on a comprehensive approach encompassing environmental, social, and economic responsibilities. The primary goal of our university is to maintain its impact in areas where we contribute to the sustainability ecosystem with an impact factor above the world average and to strengthen our presence as a holistic and robust model of a sustainable university.

In line with our sustainability principles, our university aims to:

Reduce our carbon footprint through energy efficiency projects,

Increase the use of renewable energy resources and implement our 50 MW Solar Power Plant project,

Track and improve waste management,

Raise sustainability awareness among students and staff through community contribution and social responsibility projects,

Include more sustainability topics in our educational programs and enhance environmental awareness in future generations,

Foster interdisciplinary collaborations to develop innovative solutions,

Encourage work on sustainable development topics and raise awareness,

Contribute significantly to global sustainability efforts by producing high-quality scientific outputs through practical projects.

In this regard, the sustainability policy of our university is structured around four main areas:

Institutional Sustainability

With the aim of fulfilling our economic, social, and environmental responsibilities holistically, we operate with a transparent, participatory, and ethical management approach in all areas of activity. Our goal is to continually develop innovative approaches and technological infrastructure to enhance institutional efficiency. We aim to monitor and measure sustainability performance and, based on our strengths and weaknesses, establish targets to ensure that our sustainability identity is recognized both within our institutional structure and on a global scale.

Social Sustainability

Our university prioritizes equality, inclusiveness, and social responsibility by fostering strong connections among students, employees, and society. We aim to create an inclusive and supportive educational and work environment, lead projects that contribute to society locally and globally, and implement policies that promote gender equality, equal opportunities, and human rights.

Environmental Sustainability

We aim to minimize our carbon footprint and raise environmental awareness through eco-friendly policies, optimize the use of water and energy resources with efficient and environmentally friendly projects, and present innovative solutions that optimize waste management processes.

Economic Sustainability

To promote the efficient use of university resources, we aim to develop sustainable economic models, diversify financial resources for educational and research activities, and strengthen long-term sustainability planning through partnerships. Our objectives include investing in innovative projects and entrepreneurial activities to develop a skilled workforce.

ENVIRONMENT-INFRASTRUCTURE

Our university's largest campus, the central campus, is situated in the area between Dumlupınar Boulevard and the Uncalı district. The central campus is located in the city of Antalya, along the Mediterranean coast, one of Turkey's most striking coastal areas. Known for its greenery, accessibility, and appeal, the campus is considered one of the most attractive in the country.

The largest campus is the centrally located urban main campus, spanning 3,398,971 m² with a built area of 842,395 m². Elmalı, covering 199,797 m², is the largest rural campus area. Among other urban campuses are Demre Dr. Hasan Ünal (60,114 m²), Finike (26,696 m²), and Kumluca (39,807 m²). The Göynük and Çallı campuses are smaller urban locations with 3,415 m² and 28,197 m², respectively. The Serik (urban) campus covers an area of 28,582 m². The total area of all campuses combined is 3,941,420 m². The locations of the units affiliated with our university are presented in Table 1.

Table 1. The Physical Structure of All Campuses of Our University

Campus Information	Campus Area (m²)
Merkez Main Campus	3,398,971
Demre Dr. Hasan Ünal	60,114
Elmalı	199,797
Finike	26,696
Göynük	3,415
Korkuteli	74,411
Kumluca	39,807
Manavgat Vocational School	18,429
Manavgat Vocational School - Ilıca	4,545
Manavgat Tourism Faculty	13,904
Manavgat Social and Humanities Faculty	29,984
Serik Vocational School	28,582
Serik Business Faculty	
Çallı	28,197

There are 24 faculties (Dentistry, Literature, Education, Science, Fine Arts, Nursing, Law, Economics and Administrative Sciences, Theology, Communication, Kemer Maritime, Kumluca Health Sciences, Manavgat Social and Humanities, Manavgat Tourism, Architecture, Engineering, Health Sciences, Serik Business, Sports Sciences, Fisheries, Medicine, Tourism, Applied Sciences, Agriculture), 2 schools (Foreign Languages, State Conservatory), and 12 vocational schools (Justice, Demre Dr. Hasan Ünal, Elmalı, Finike, Göynük Culinary Arts, Korkuteli, Kumluca, Manavgat, Serik Gülsün Süleyman Süral, Social Sciences, Technical Vocational School).

The central campus has 717,684 m² of enclosed space, with a total of 954,564 m² of enclosed space across all campuses.

Akdeniz University Hospital has a service area of 259,848 m². The 31-bed Physical Therapy and Rehabilitation Hospital and the 30-bed Mental Health Diagnosis and Treatment Center are also located within the Central Campus. With the addition of Block G, which was completed in 2019 and has a capacity of 367 beds, the total number of beds has increased to 1,267.

Additionally, the campus includes facilities such as the Library, Central Dining Hall, Indoor Sports Hall, Indoor Swimming Pool, Athletics Track, Olbia Cultural Center, Yakut New Living Area, Social Facilities, Rectorate Building, Health, Culture and Sports Directorate, and the Central Heating Plant.

The Akdeniz University campus features faculty buildings, laboratories, a library, and sports facilities. The main central campus of our university spans an area of 3,398,971 m², with a planned covered area of 954,564 m². The proportion of open space within the entire campus area is 94.62% (Figure 3).

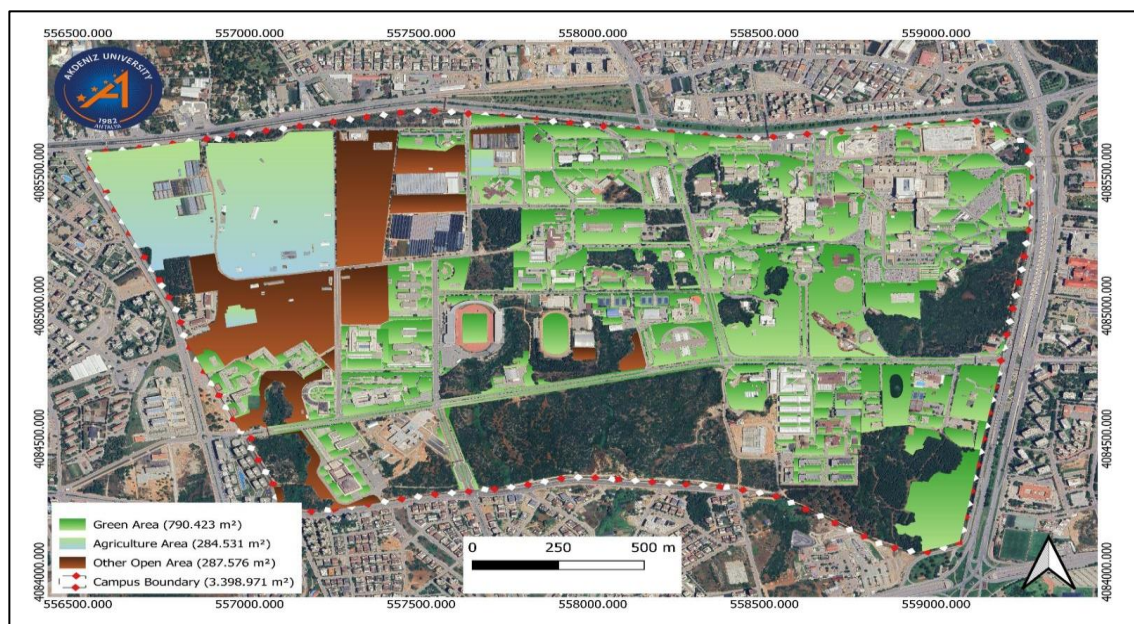


Figure 3. Master Site Plan of the Central Main Campus

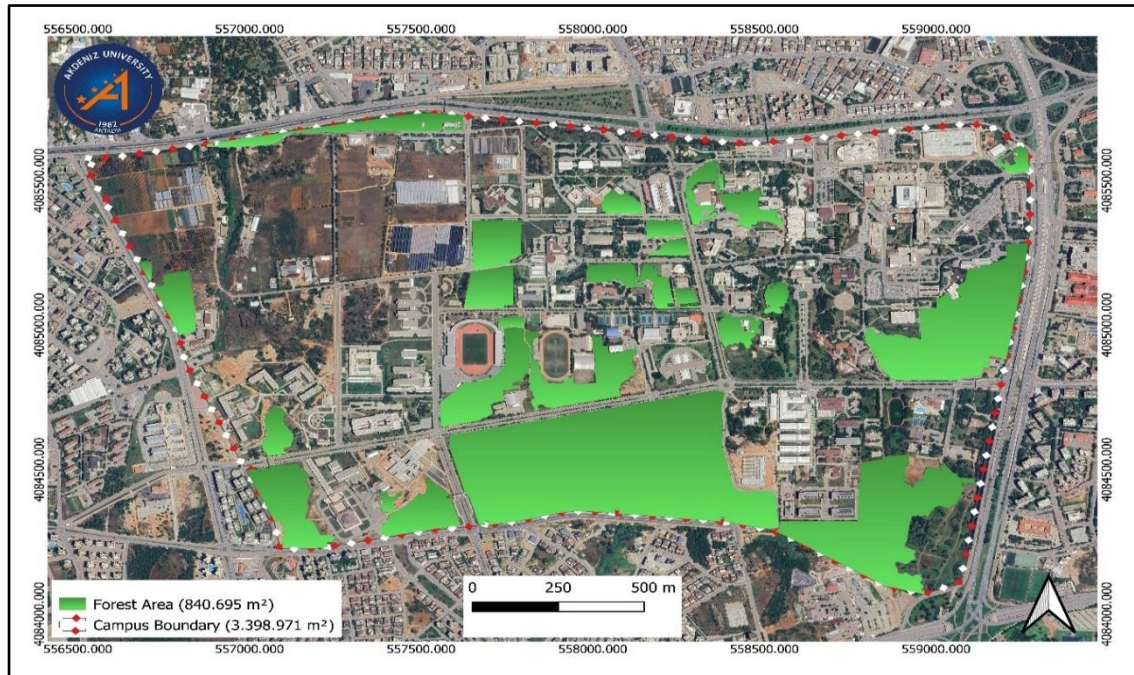


Figure 4. Forest Area at Main Campus of Akdeniz University

The total forest area of our university is approximately 1,000,222 m², which constitutes 25.38% of the total campus area. In the central campus, 24.73% of the area is forested (Figure 4).

Biodiversity

Due to the rapid population growth in Antalya in recent years, there has been a need for new buildings, roads, and living spaces in the city. As a result, existing green areas in the city have either gradually disappeared or become confined to certain areas.

Green spaces that can remain naturally preserved in urban centers, like the central main campus of Akdeniz University, hold significant ecological importance for cities due to their floristic characteristics and their function as carbon sinks (Figure 5). Another important reason for preserving natural areas is that the plants in these areas are adapted to the current climate, requiring minimal maintenance, labor, and irrigation.

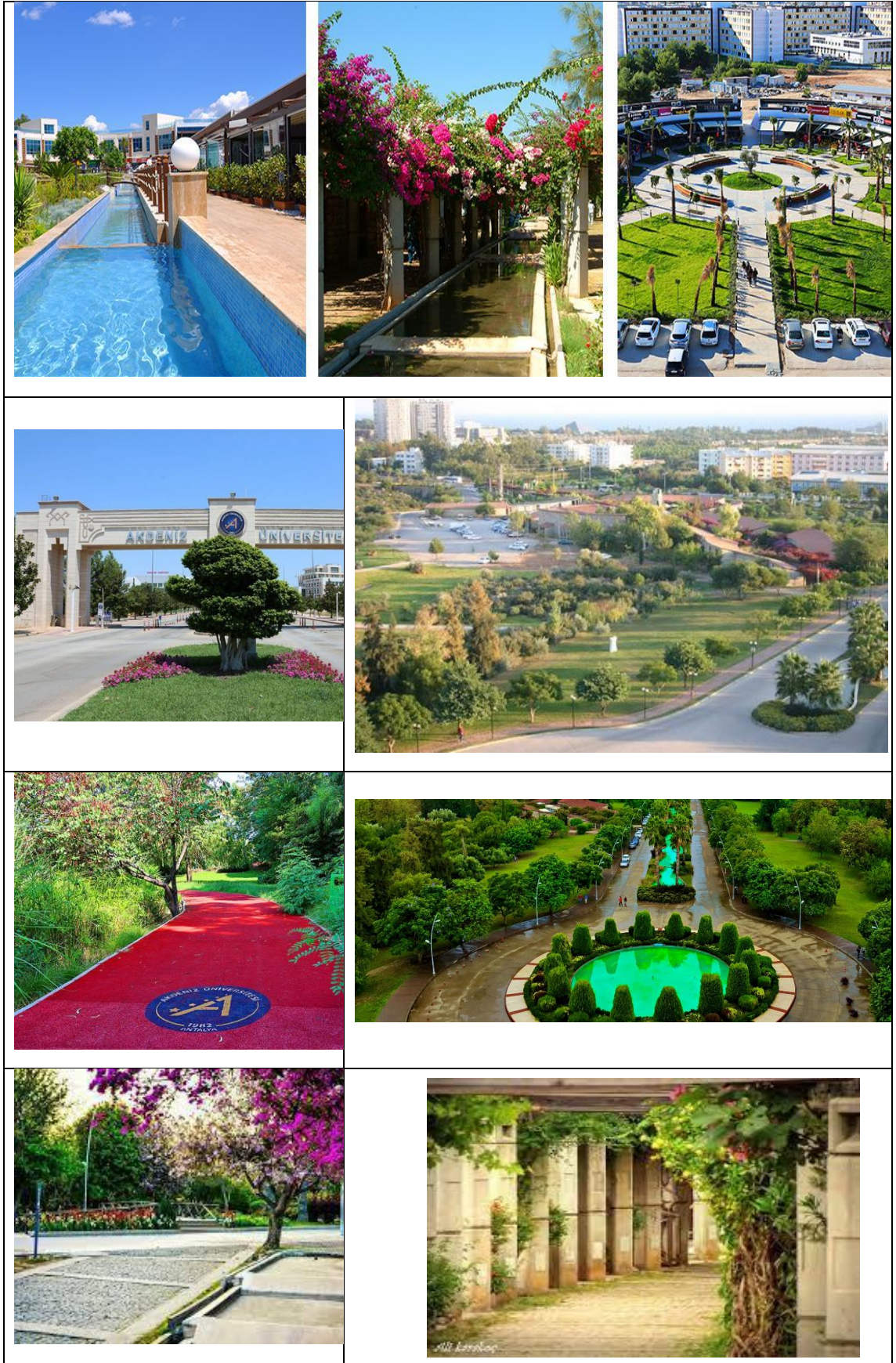


Figure 5. Main Campus

A study conducted in 2020 on the central main campus of Akdeniz University identified a total of 438 taxa belonging to 76 families, 21 of which are endemic (4.79%) (Ünal and Altunbaş, 2020). The endemic plants identified on the central main campus of Akdeniz University are shown in Table 2.

Table 2. Endemic Plants of the Akdeniz University Central Campus

Familia	Plant
Caryophyllaceae	<i>Bufonia calyculata</i> Boiss & Bal
	<i>Velezia pseudorigida</i> Hub.-Mor.
Hypericaceae	<i>Hypericum polyphyllum</i> Boiss. & Bal. subsp. <i>subcordatum</i> Robson&Hub.-Mor.
	<i>Hypericum aviculariifolium</i> Jaub. & Spach. subsp. <i>aviculariifolium</i> var. <i>avicularifolium</i>
	<i>Hypericum aviculariifolium</i> Jaub. & Spach. subsp. <i>depilatum</i> (Freyn & Bornm.) Robson var. <i>depilatum</i>
Crassulaceae	<i>Rosularia globulariifolia</i> (Fenzl) Berger
Dipsaeaceae	<i>Scabiosa reuteriana</i> Boiss.
Campanulaceae	<i>Campanula podocarpa</i> Boiss.
Boraginaceae	<i>Alkanna macrophylla</i> Boiss & Heldr
Scrophulariaceae	<i>Verbascum glomerulosum</i> Hub.-Mor
	<i>Scrophularia pinardii</i> Boiss.
	<i>Linaria chalepensis</i> (L.) Miller var. <i>brevicalyx</i>
Lamiaceae	<i>Ajuga bombycina</i> Boiss.
	<i>Phlomis bourgaei</i> Boiss
	<i>Phlomis leuophracta</i> P.H. Davis & Hub.-Mor
	<i>Phlomis lycia</i> D.Don.
	<i>Stachys aleurites</i> Boiss & Heldr.
Euphorbiaceae	<i>Euphorbia falcata</i> L. subsp. <i>macrostegia</i> (Bornm.) O. Schwarz
Rubiaceae	<i>Galium canum</i> Req ex DC. subsp. <i>antalyense</i> Ehrend
	<i>Galium floribundum</i> Sm. subsp. <i>airoides</i> Hub.-Mor. Ex Ehrend.
Liliaceae	<i>Allium sandrasicum</i> Kollmann, N.Ozhatay & Bothmer

The distinctive feature of the Akdeniz University central campus is the area of tufa rocks that still remain in their natural state. This geological structure, known as the Antalya Tufa, is the largest tufa deposit in the world. Therefore, the campus area represents the geological and geomorphological structure of Antalya.

Food Production

The conservation areas of our university include plant, animal, and wildlife resources, as well as genetic resources for food and agriculture secured in medium- or long-term conservation facilities. Our university has greenhouses for vegetable cultivation and cattle farms. Additionally, wildlife conservation areas are preserved on the central main campus.

Prominent centers in the fields of food and agriculture include the "Akdeniz University Food Safety and Agricultural Research Center" and the "Akdeniz University Seed and Agricultural Biotechnology Research and Application Center" (Figure 6).

Within our university, food production is conducted across eight units within the Faculty of Agriculture: Farm Management, Dairy Operations, Cow Barn, Animal Science, Aksu, Horticulture, Agricultural Structures and Irrigation Department, and Venlo Greenhouse.

As Akdeniz University, we have initiated efforts to establish Turkey's largest Agricultural Technopark. The Antalya Technopark Agricultural Technopark project offers state-of-the-art R&D/innovation facilities and suitable agricultural areas designed for new projects. The Agricultural Technopark project aims to provide new power and employment in regional development, bringing a fresh vision to Antalya. It is planned to bring together companies operating in seed breeding and agricultural technologies in the Antalya and Western Mediterranean region to create a new ecosystem. Given the challenges faced in accessing food, beverages, and agricultural products during the pandemic, and the potential for future food crises, this center is envisioned as a solution hub for Turkey. The center aims to contribute to national development and raise the level of regional progress, positioning Turkey as a globally significant player in sustainable agriculture and agricultural technologies.



Food Safety and Agricultural Research Center



Seed and Agricultural Biotechnology Research and Application Center

Figure 6. Food Production and Management

All buildings on our university campus are equipped with advanced security and safety facilities. Some of these include smart campus systems, integrated security automation systems, automatic fire protection systems, vehicle control and recognition systems, personnel and student identification systems, and a central security hub.

All buildings on campus are equipped with an alarm system that includes motion detectors, activating upon any detected movement in the area where it is installed. Additionally, all buildings are monitored by a security team, with security officers making periodic rounds inside and outside each building to ensure safety. In addition to building-specific security measures, entry and exit points to the campus are under continuous control. Vehicle access to the campus is managed by a license plate recognition system, and only registered vehicles can enter. Vehicles with unknown plates can access the campus only with permission from security at the campus gates. Pedestrian entry to the campus is allowed only with ID cards, and both personnel and students must scan their IDs at the turnstiles at campus gates to gain access. Other entrances are subject to security authorization.

Smoke detectors are installed in all offices and classrooms within every building on campus. The fire alarm system activates whenever smoke is detected by the detectors. All campus buildings are monitored by cameras strategically placed throughout the buildings.

ENERGY & CLIMATE CHANGE

Our university places great emphasis on energy management, aiming to achieve greater energy savings. Additionally, electricity savings are achieved through the use of efficient lighting, heating, cooling, and smart systems.

In line with the Akdeniz University Energy Management Unit Directive, adopted by University Senate Decision dated 27/08/2021 and numbered 19/06, and in accordance with Article 13/b-4 of Law No. 2547, our university has established an Energy Management Unit. Faculty/School Secretaries in Faculty and School Buildings, relevant Directors in Centers and Institutes, the Chief Medical Officer for hospital buildings, and personnel designated by the General Secretariat for other buildings have been appointed to serve as “Institutional Building Energy Efficiency Officers” in coordination with the Energy Management Unit, as outlined in the “Regulation on Increasing Efficiency in the Use of Energy Resources and Energy.”

Following its establishment by Senate decision on 27.08.2021, the Energy Management Unit quickly began work, implementing measures to increase awareness through visual and written information, faculty visits, and measurement and control studies.

For participation in the “Energy Efficiency Practices in Public Buildings Project (KABEV)” carried out by the Ministry of Environment and Urbanization of Turkey, the following steps have been taken: i. buildings within the campus that meet the project criteria have been identified, ii. assessments have been conducted to initiate audits. Visual materials for energy conservation have been distributed to faculties and units for use (Figure 7).



Figure 7. Visual Examples for Energy Conservation

Our university has recently been focusing on energy management, aiming to achieve greater energy savings. LEDs are used throughout all new buildings and the library on our campus. Some buildings have roof designs that allow daylight to enter, and our campus also has solar-powered street lights that adjust automatically according to light intensity.

According to the 2023 Energy Audit Report, our university has a total of 51,092 lamps, with fluorescent lamps being predominantly used in buildings. There are 5,474 LED lamps, making up 10.7% of the total. The current energy consumption with existing lamps is calculated to be 7,405,646 kWh annually. With the proposed LED lamps, annual energy consumption would be 3,415,887 kWh. If all lamps are replaced with LED lamps, an annual energy saving of 3,989,759 kWh can be achieved.

At our university, a total of 12 buildings utilize natural lighting, representing 23.1% of all buildings (Figure 8).

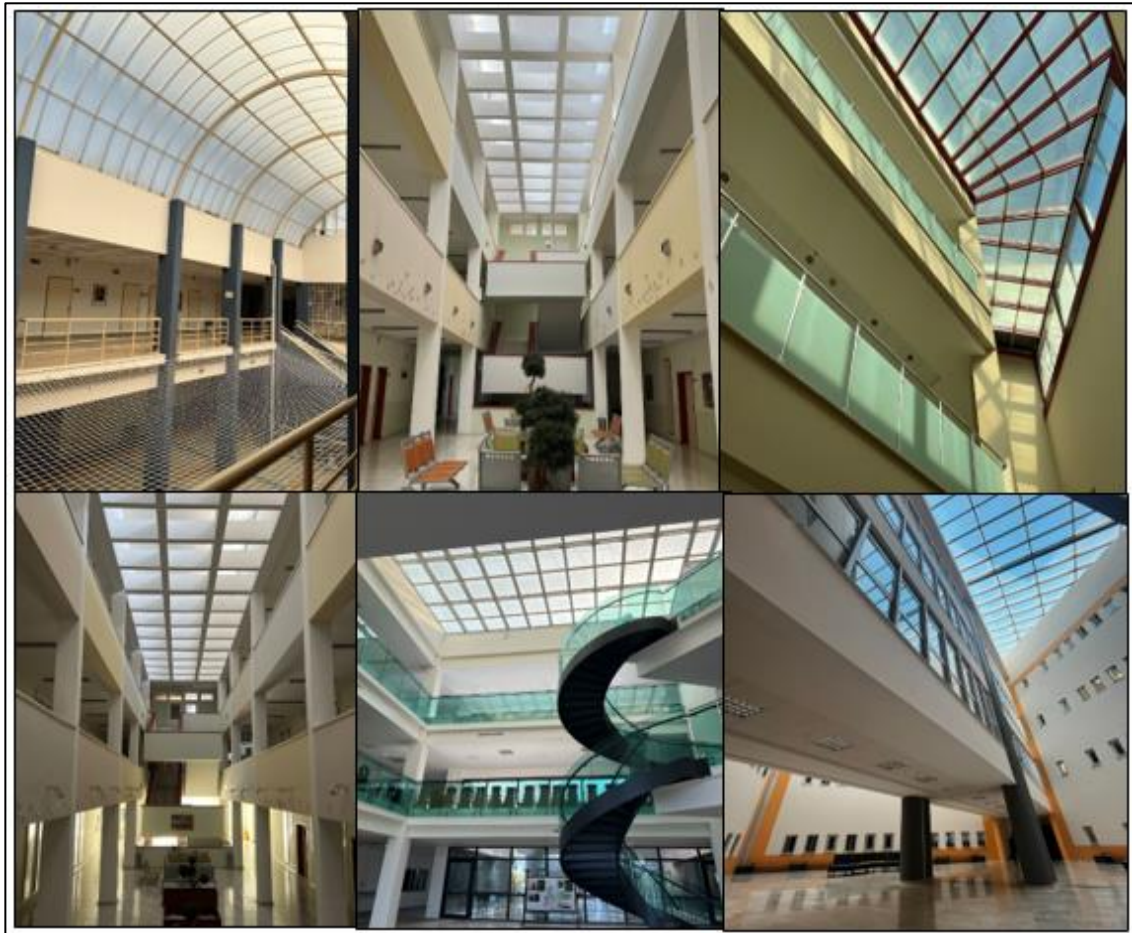


Figure 8. Example Buildings with Natural Lighting

Structural adjustments for solar radiation shielding have been made in many buildings at our university (Figure 9).



Figure 9. Structural Examples of Solar Radiation Shields in Our Buildings

Electricity usage in all university buildings is automatically monitored and recorded through electric meters. Additionally, water consumption in all buildings is automatically monitored and recorded via water flow meters. Motion-sensor lights are used throughout our buildings, especially in stairwells.

In addition to these activities, the university's electricity consumption and bills are regularly reviewed. Electrical component values within the campus are routinely checked. High Voltage Operation responsibility checks for transformers in the districts are regularly maintained. Coordination is maintained with the Ministry of Energy, the Ministry of Environment, Urbanization, and Climate Change, the Council of Higher Education, and the Antalya Governor's Office. Required work is conducted as requested by the ministry, and necessary notifications are timely communicated to the relevant units.

Electricity is used for lighting, cooling, heating, and laboratory equipment. In 2023, an energy savings of 637,366 kWh (1.2%) was achieved compared to the previous year. When compared to 2019's electricity consumption, the savings rate is 6.7% (Figure 10).

The university's natural gas consumption in 2023 was 2,176,929 m³. As a result of implemented measures, natural gas consumption decreased by 8.5% compared to the previous year.

In 2023, the university consumed 651,066 m³ of water. Conservation efforts led to a savings of 202,498 m³ of water compared to 2022 (24%).

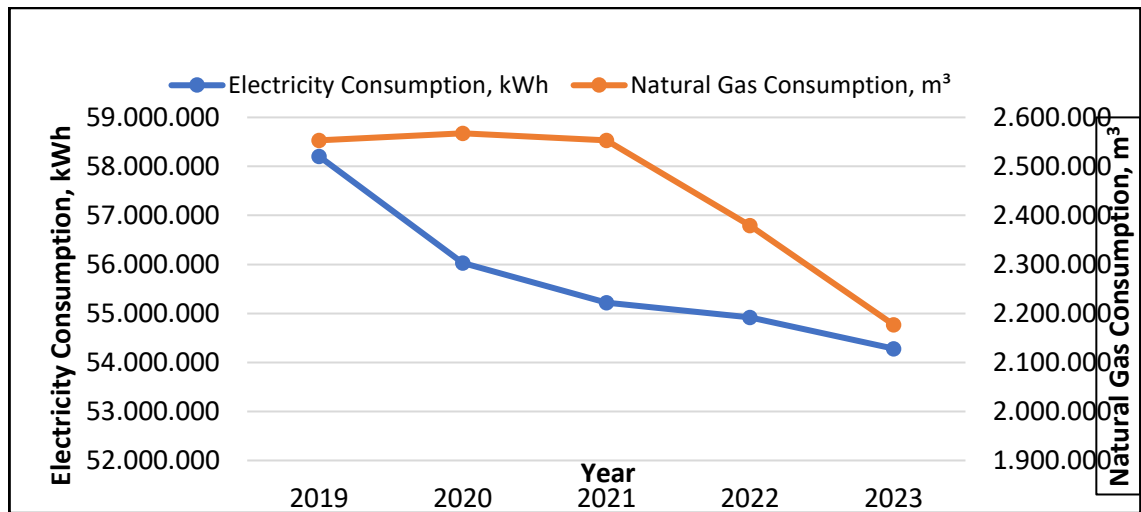


Figure 10. Electricity and Natural Gas Consumption

The university's carbon footprint is calculated by identifying the greenhouse gas emissions directly or indirectly generated from university activities. Greenhouse gas emissions from sources within Akdeniz University's control and authority (such as operations, buildings, etc.) are defined as "Direct Greenhouse Gas Emissions to the Atmosphere." "Indirect Greenhouse Gas Emissions to the Atmosphere" refer to emissions resulting from university activities but occurring within the jurisdiction of another company/enterprise/institution.

Akdeniz University's greenhouse gas emissions include activities conducted on the main central campus and at the hospital. Other campuses are not included in the calculations.

The greenhouse gas emissions from university activities are identified using the Greenhouse Gas Protocol developed by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI). According to the protocol, greenhouse gas emissions are determined in three subcategories (Scope 1, Scope 2, and Scope 3). The university tracks emissions in all three categories.

University emissions are primarily calculated for Scope 1 and Scope 2, with some Scope 3 activities identified for inclusion in future years. Scope 3 activities categorized under Category 7 for 2023 relate to the types of transportation used by Akdeniz University students and staff.

The number of vehicles entering and exiting the main campus and the number of operating buses have been determined, and greenhouse gas emissions from fuel consumption for these vehicles have been calculated.

Greenhouse gas emissions are calculated as follows:

Scope 1: Natural gas-related emissions amount to 4,197.83 tons CO₂-eq, and liquid fuel-related emissions amount to 205.44 tons CO₂-eq, totaling 4,403.27 tons CO₂-eq.

Scope 2: Electricity consumption-related emissions are 23,829.57 tons CO₂-eq.

Scope 3: Emissions from transportation modes (bus, car, motorcycle) for student and staff commuting amount to 1,318.08 tons CO₂-eq.

The university's total greenhouse gas emissions for 2023 are 29,550.92 tons CO₂-eq, with the 2023 Carbon Footprint = 29,550.92 tons CO₂-eq.

The change in greenhouse gas emissions (CO₂ eq.) resulting from our university's activities between 2016 and 2023 is shown in Figure 11. In 2016, greenhouse gas emissions were approximately 34,000 tons (CO₂ eq.), increasing by 14% to 38,000 tons in 2019. Emissions have decreased in subsequent years, and with the measures taken, greenhouse gas emissions dropped to 29,000 tons (CO₂ eq.) in 2023.

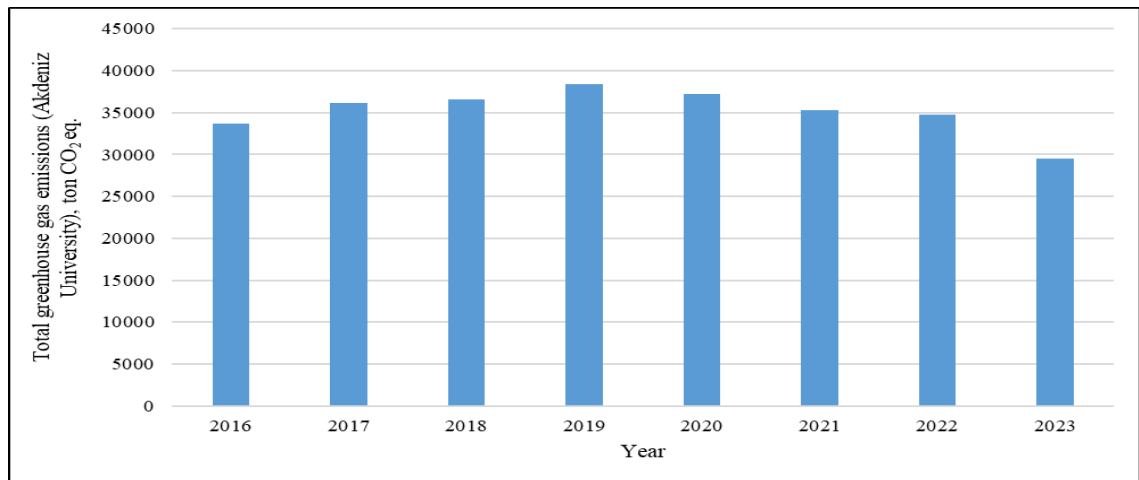


Figure 11. Greenhouse Gas Emissions CO₂ eq. for the Years 2016-2023

Since 2020, measures taken at Akdeniz University have led to a reduction in greenhouse gas emissions.

To promote healthy and sustainable transportation options on the main central campus, bike-sharing is widely implemented (Figure 12).

Bicycle parking areas have been built to encourage cycling on campus (Figure 13). Electric scooters are also commonly used on campus (Figure 14).

There are four gates for cars on the central main campus. Vehicle entries are recorded and monitored with a "license plate recognition" and "fast pass" system (Figure 15). Since the main campus is almost within the city, it was widely used for public transit access before these systems were implemented. These systems have reduced the campus's use as a public transit route. To further limit public transit access, certain gates are closed to vehicle entry and exit at specific times. As a result of these measures, the number of vehicles entering the campus has significantly decreased—from approximately 12,000 vehicles in 2022 to 6,000 in 2023.

To further reduce the number of vehicles entering the campus, the use of Antalya Metropolitan Municipality buses within the campus is encouraged. No fees are charged for boarding these buses from stops within the campus.



Figure 12. Bike Sharing



Figure 13. Bicycle Parking



Figure 14. E-Scooters



Figure 15. Fast Pass System

WASTE

In accordance with the decision of the Akdeniz University Environmental Problems Research and Application Center Board dated 17.01.2019 and numbered 2019/03, the Zero Waste Management System Coordination Commission was established. Under the leadership of this commission, Zero Waste Management System Sub-Commissions were formed in all academic and administrative units. The task of these sub-commissions is to establish, expand, develop, and monitor the zero-waste management system in their respective Faculty/Institute/School/Unit buildings, following the directives from the Environmental Issues Research and Application Center and the provisions outlined in the Zero Waste Regulation.

An environmental engineer responsible for waste management is employed at the Environmental Issues Research and Application Center.

In compliance with the Zero Waste Regulation, which was published in the Official Gazette on July 12, 2019, and numbered 30829, our main central campus and hospital have received the "Zero Waste Certificate" (Figure 16). As a national program with regulations, the zero waste approach promotes sustainable production and consumption practices and supports the efficient use of resources. Accordingly, our university follows sustainable targets to prevent, reduce, reuse, and recycle waste in line with the zero waste management approach.



Figure 16. Zero Waste Certificates

All waste generated at our university is managed according to waste type, whether hazardous or non-hazardous. Waste is also categorized as organic or inorganic and collected separately at the source. Collection units and temporary waste storage areas are established for all existing and potential types of waste. Additionally, two mobile waste collection units have been installed at designated points on the main central campus (Figure 17).



Figure 17. Mobile Waste Collection Systems

As part of the Zero Waste Project, separate waste collection equipment for recyclable waste and other waste has been placed in all buildings (Figure 18).



Figure 18. Separate Waste Collection Bins

Our university consistently plans sustainable services with the goal of optimizing waste management processes to ensure the efficient and eco-friendly use of resources, as per the adopted zero waste management approach.

To reduce the amount of paper used in daily official correspondence, the Electronic Document Management System (EDMS) is utilized for office communications. This has significantly reduced paper use, and our university ranked third among 105 Turkish universities in environmental contributions with the "paperless office" concept under the EDMS initiative "Greenest Office" by EnVision. Additionally, printers in administrative offices on campus are located in shared areas, and all printed documents are double-sided.

Our university hospital also manages all processes electronically, from patient admissions to discharges, and across clinical, financial, laboratory, pharmacy, stock, HR, and waste management systems using the MIA-MED Software System. This system reduces the need for physical storage space and paper, while supporting quicker, more sustainable access to requests and improving the management of all processes within the hospital.

Throughout all university campuses, academic staff have opted for hybrid or fully online classes during the academic year. Microsoft Teams is used as a communication tool for remote access and online classes, allowing assignments to be uploaded electronically and reducing paper use. It also enables efficient organization of meetings, helping the university use resources more effectively.

Maintenance and repair needs for all buildings and campuses are reported electronically via fault records to the relevant technical units.

Our university implements improvements in many areas to prevent paper use, reduce the need for physical space, avoid workforce losses, and enhance resource and time management in line with its sustainability goals.

All academic and general university journals are published electronically. For personnel and student entry and exit, a card system and license plate recognition system are used instead of signed documentation.

The Institute of Science at our university has started managing "Master's and Doctoral Thesis Defenses and Doctoral Qualifying Exams" with electronic signatures. This allows "Supervisors and Jury Members" involved in graduate education to complete all processes electronically without needing a wet signature, aiming to reduce paper use and streamline process management.

Reusable products (such as cups, trays, and pitchers) are preferred in all campus dining halls.

Set menus are used, with seasonal vegetables and fruits prioritized when planning the menu, and stocks managed accordingly. Food waste is monitored, and improvement activities are planned based on waste types.

In pursuit of becoming a Sustainable Campus, our university prioritizes a zero-waste management approach, ensuring safe management of waste in accordance with environmental regulations for the protection of environmental and human health.

Organic waste (kitchen, park, and garden waste) is collected separately at the source on campus. Additionally, pruning waste with woody characteristics is processed by two different machines and used as mulch and ground cover in landscape areas. Wood chips are also produced from pruned branches at the storage and recovery area for grass and tree waste next to the Faculty of Agriculture livestock facilities. This waste is spread around trees within the campus and reused.

WATER

Located on the Mediterranean coast, Antalya experiences a typical Mediterranean climate characterized by hot, dry summers and mild, rainy winters. Summer temperatures usually exceed 30°C, while winter temperatures rarely fall below 10°C. The city enjoys over 300 sunny days annually, making it a popular destination for tourists. Most rainfall occurs between November and March, contributing to the region's lush vegetation and agricultural productivity.

Akdeniz University campuses (for all buildings) utilize a separate sewer system for wastewater and rainwater. The wastewater system connects to the municipal wastewater network, which leads to a tertiary treatment facility (for all buildings). On the main campus, rainwater is collected from building roofs and directed to stormwater collection lines surrounding the buildings. In other areas of the main campus, rainwater discharges into the municipal stormwater collection system (Figure 19). Similarly, rainwater is collected on other campuses and integrated into the municipal stormwater collection system.



Figure 19. Artificial Lakes

Akdeniz University is highly committed to water conservation across its campuses by using water-efficient devices (more than 85%). To reduce water consumption, all buildings on campus are equipped with low-flow faucets and dual-flush toilets. For campus landscaping, irrigation systems use smart control devices and drip irrigation techniques to minimize water wastage.

These initiatives support the university's sustainability goals and help reduce overall water usage, contributing to the conservation of valuable natural resources in the region. As a result of these efforts, Akdeniz University campuses have achieved a total water savings of 202,298 m³.

All wastewater from each building at Akdeniz University is connected to the Antalya municipal wastewater collection system. The collected wastewater is treated at the city's tertiary treatment facility. Part of the treated wastewater is reused at the treatment facility for irrigation, while the remainder is discharged through a deep-sea discharge system.

As Akdeniz University, we are committed to effective water pollution control on our campuses by following national regulations, such as the "Urban Wastewater Treatment Regulation" and the "Water Pollution Control Regulation." All wastewater generated on our campus is directed to the Antalya municipal wastewater collection system, where it undergoes tertiary treatment in compliance with the "Urban Wastewater Treatment Regulation." The university also ensures the proper management of rainwater through collection and discharge systems aligned with national water control directives to prevent runoff pollution. Regular inspections and maintenance of the university's water infrastructure further support compliance with these standards and help preserve local water resources.

Our university houses the "Environmental Issues Research and Application Center" and the "Department of Environmental Engineering," both of which conduct studies on water pollution control.

TRANSPORTATION

Vehicle entry and exit to the central campus of Akdeniz University are managed through four main gates. Vehicles entering the campus are monitored and controlled using license plate recognition and HGS (fast pass) systems. Due to the central campus's proximity to the city, it was frequently used for transit before these systems were implemented. The introduction of license plate recognition and fast pass systems has reduced transit use of the central campus, aligning with the goal of reducing greenhouse gas emissions from vehicles on campus.

The primary strategy for reducing transportation-related greenhouse gas emissions on campus is to limit the number of vehicles entering the campus and to establish incentive mechanisms. To support this, the use of Antalya Metropolitan Municipality public transportation within the campus is encouraged, with no fees charged for boarding buses at on-campus stops.

The university has 32 vehicles, with 6,245 cars and 580 motorcycles entering the central campus. Akdeniz University operates one electric shuttle bus and five regular shuttle buses (Figure 20). On-campus transportation is provided by local shuttle buses operated by the municipality, running every 10 minutes from 6:30 a.m. to midnight. These buses are free within the central campus boundaries. Students and staff can access real-time routes and schedules for the six on-campus shuttle services via the Antalya Kart app provided by Antalya Metropolitan Municipality.

There are also six different e-scooter service providers on campus for on-campus transportation. These companies offer mobile applications for e-scooter use, which are actively used by staff and students.



E-Bus Shuttle



Shuttle Service



E-Scoters

Figure 20. Main Campus Transportation Services

All university campuses are bicycle- and pedestrian-friendly. The central campus of Akdeniz University is designated as a pedestrian-priority campus. Many of our campuses feature car-free paths for pedestrians, with a 30 km/h speed limit on all internal roads and bicycle lanes on public roads (Figure 21-22). Among our university sports clubs, there is a cycling club. The university cycling community organizes various events and services to encourage cycling.



Figure 21. Pedestrian Way

Our university provides sustainable contributions to emission reduction activities through electric charging stations, six different e-scooter service providers, and one electric shuttle bus. These measures are part of our zero-emission mobility policies on campus.

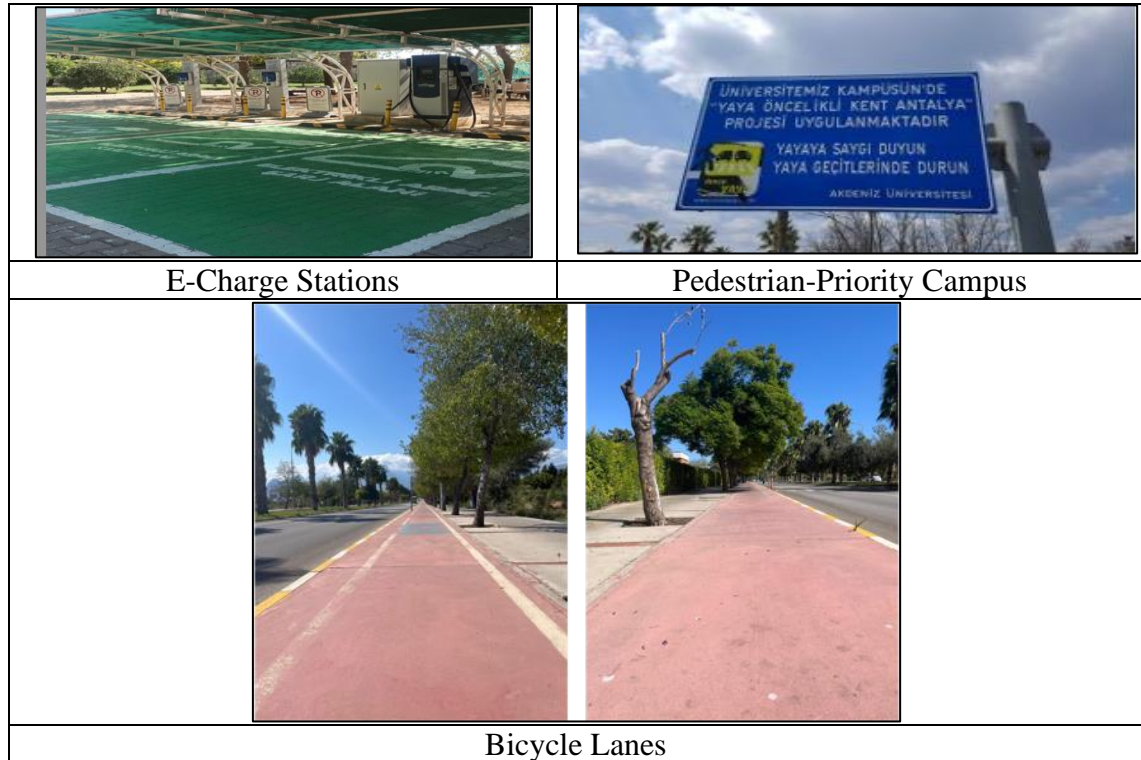
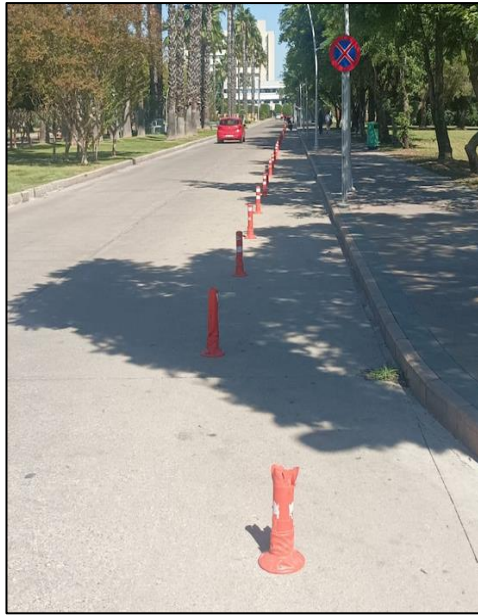


Figure 22. Transportation Services

As part of transportation services at our university, there are separator road arrangements between vehicle and pedestrian paths, ramps and guiding blocks designed for pedestrians with physical disabilities, street lights for nighttime pedestrian lighting, and solar-powered street lights that are automatically controlled based on light intensity (Figure 23).



Figure 23. Pedestrian Path Facilities for Individuals with Disabilities on Campus



As part of efforts to limit and reduce parking areas on campus, transportation services include adjustments such as shuttle/bus services within the campus, e-scooter usage, restricted parking areas for students, and closing two main entrances of the central campus to vehicle entry at specific times to prevent its use as a transit route (Figure 24).

Electric scooters are widely used on campus. Promoting the use of electric scooters as an alternative to fossil fuel vehicles is encouraged, as it is known to contribute to reducing greenhouse gas emissions.

Figure 24. Limit and Reduce Parking Areas on Campus

To further reduce vehicle density and transportation-related emissions, plans are being considered to implement fees for fossil-fueled vehicles at campus entrances. Additionally, introducing a staff shuttle service aims to reduce the number of individual staff vehicles entering campus, contributing to emission reduction goals.

In conclusion, a vehicle entry tracking software application facilitates monitoring of student and staff vehicle entries on campus. The vehicle tracking software program provides data on vehicle entries to the campus, which is tracked and reported.

EDUCATION-RESEARCH

Akdeniz University prioritizes sustainability across all aspects of education and research, ensuring it is integrated into curricula at every level, from vocational schools to graduate programs. Sustainability-related courses are offered widely, preparing students with the knowledge and skills needed to address environmental and societal challenges. These courses cover topics such as sustainable resource management, environmental policies, renewable energy, and climate change, aligning with the university's commitment to global Sustainable Development Goals (SDGs).

In addition to classroom education, Akdeniz University promotes hands-on learning and research in sustainability. The university's Environmental Issues Research and Application Center and various faculty departments actively engage in projects addressing water conservation, energy efficiency, and waste reduction on campus. With dedicated green spaces and facilities optimized for minimal environmental impact, such as smart energy systems and separate recycling facilities, the campus itself serves as a learning model for sustainable practices.

Akdeniz University also collaborates with national and international organizations, fostering an academic culture that emphasizes responsibility toward ecological and social wellbeing. Through these initiatives, the university equips its students to be sustainability-conscious professionals, making meaningful contributions to their communities and the environment.

Figure 25 illustrates the scholarly output and field-weighted citation impact (FWCI) of Akdeniz University's research contributions across various Sustainable Development Goals (SDGs). The left panel shows the quantity of scholarly publications for each SDG, while the right panel reflects the impact of these publications in terms of citations relative to global averages in their respective fields.

The university's highest scholarly output is in SDG 3: Good Health and Well-being, indicating a strong focus on healthcare-related research. This aligns with its medical research and community health efforts. Other areas with significant scholarly contributions include SDG 4: Quality Education, SDG 11: Sustainable Cities and Communities, and SDG 8: Decent Work and Economic Growth, suggesting a broad engagement with sustainability topics beyond environmental concerns.

The field-weighted citation impact (FWCI) shows that research related to SDG 6: Clean Water and Sanitation, SDG 7: Affordable and Clean Energy, and SDG 15: Life on

Land is highly influential, receiving citations above the global average. This highlights the impact and relevance of the university's work in these critical areas of sustainability.

In summary, the figure showcases Akdeniz University's balanced focus on both scholarly output and impactful research, particularly in health, energy, and environmental sustainability.

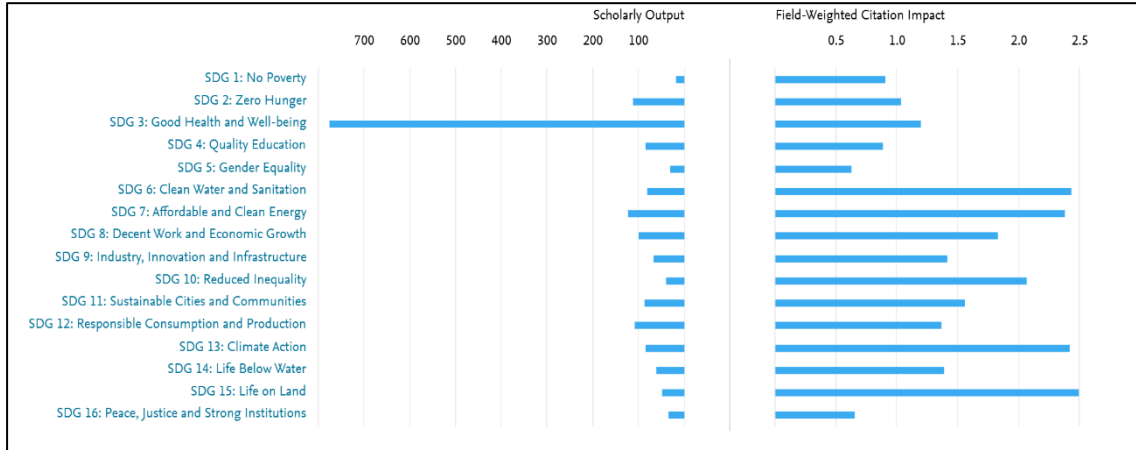


Figure 25. Scholarly Output and Field-Weighted Citation Impact of Akdeniz University's Research Across Sustainable Development Goals (SDGs) (Source: SCiVal)

In 2023, a total of 110 activities related to sustainability in the environmental field were organized at our university, including conferences, symposiums, workshops, and similar events. On average, 105 sustainability-related activities have been organized annually over the past three years, starting from 2021 (Figure 26).





Figure 26. Examples of Sustainability Related Activities