



Baku State University

2025 REPORT ON

6 CLEAN WATER AND SANITATION





INTRODUCTION

This report presents an overview of the measures undertaken by our university to support Sustainable Development Goal 6 (Clean Water and Sanitation) in the context of water resource management and conservation. Through a comprehensive questionnaire, the university's policies, operational practices, and planned initiatives have been systematically assessed.

The findings indicate that the university adopts a rigorous and structured approach to water consumption management. The total volume of water usage is carefully monitored through the installation of water meters across campus facilities, enabling accurate monthly measurement and data-driven decision-making. This monitoring system allows the institution to identify consumption trends, detect potential inefficiencies, and implement corrective measures where necessary.

In addition, the university has implemented wastewater treatment processes that allow treated water to be reused for plant irrigation. Sustainable landscaping practices further strengthen these efforts, including the use of drought-tolerant plant species, drip irrigation systems, and optimized watering schedules to minimize water loss. These strategies significantly reduce potable water demand and contribute to long-term resource conservation.

Although the university is currently in the early stages of formalizing a comprehensive water reuse policy, progress is being made toward developing a structured framework that integrates reuse principles into campus operations. This includes exploring greywater recycling systems and expanding treated wastewater applications.

Beyond campus operations, the university plays an active role in community engagement and education related to water management and sustainability. It regularly organizes seminars, workshops, and conferences aimed at raising awareness of responsible water use and innovative conservation techniques. Furthermore, the institution collaborates with local, national, and international organizations to promote research, knowledge exchange, and joint initiatives aligned with global sustainability objectives.





While the university is in the early stages of developing a policy for water reuse, it is actively involved in community education initiatives related to water management. These include seminars, conferences, and collaborations with local, national, and international organizations.

The report underscores the university's efforts to promote conscious water usage both on-campus and in the wider community with informative posters and academic research. Additionally, it discusses the involvement of the university's leadership in the intergovernmental Hydrological Program (IHP) National Committee of Azerbaijan, demonstrating the institution's commitment to water security at a national level.

In conclusion, this report demonstrates our university's commitment to sustainability, water conservation, and community engagement in the context of SDG 6. While the institution has made significant strides in addressing water-related challenges, there remains room for further improvement and the implementation of more robust policies and practices to ensure clean water and sanitation for all.



SDG 6. CLEAN WATER AND SANITATION

The source of drinking water used in Baku State University (hereafter-BSU) belongs to the Jeyranbatan reservoir. This water must meet certain standards/ is properly cleaned and fed into the public water supply. However, the water is not suitable for drinking directly from the tap. At the same time, water contains soil



particles of various sizes. Accordingly, the water passes through filters that perform mechanical cleaning before entering the university's water reservoirs. In the rooms, filters are placed to bring the water directly from the tap to a clean state. In addition, there are water meters inside the university, which measure the monthly water consumption.

Currently, steps are being taken to clean water waste and use it for watering plants. Irrigation of plants causes more water scarcity especially in summer months. Due to the small amount of rainfall during the summer months, it is not possible to use rainwater harvesting to irrigate plant growth. Accordingly, it is considered that water waste will be cleaned and reused for plant irrigation.

Although the level of groundwater in the place where the university is located is high, it cannot be directly used because it is salty water. However, for about 50 years, it was used to drink water from the artesian well available inside it. In the next period, it is planned to install cleaning devices and filters inside it.

Rainwater harvesting system is available. so that rainwater flows from the roof to the pipes. The pipes are connected to the water reservoirs at the end. The plants are watered with the water collected in the water reservoirs. In addition, in order to prevent excessive water wastage, sensor taps are used in toilets. It is planned to use regulating devices to reduce the water pressure.



There are 2,500 trees and 1,000 m of bushes in the campus area of the university. Drought-tolerant plants dominate, Eldar tree, plane tree, olive tree, mulberry tree, saphora tree, blueberry, etc. Along with woody plants, shrub plants are also drought tolerant. Some of the other trees are drought tolerant. In the place where the university is located, the ground water is not very deep, as a result, the plants that are resistant to



suction are also fed by ground water. Despite these mentioned facts, it is currently planned to use the drip irrigation method to reduce the water consumption for watering the plants.

However, investigation is being carried out in the direction of to maximize water reuse across the university. The installation of devices for the reuse of used water and the implementation of the cleaning process in accordance with it are considered.



There are posters in the university area about conscious water usage. These posters promote sustainable management of water resources.



Selective water disposal options in closet, as well as motion sensor faucets are used in WCs to prevent excess water usage. Additionally, academic staff of the university published the related articles:

1. Bayramov G. Jafarova N.M Samadova A.A. Methods of analysis of harmful substances in the industrial waste water prwastewaterhe oil industry
2. E.M.Gadirova, S.R.Hajiyeva, R.Y.Mammadov, G.I.Bayramov, U.N.Rustamova, N.M.Jafarova. Determination of toxic organic compounds in waste waters
3. 3.S.R.Hacıyeva, N.T.Shamilov, N.M.Cəfərova N.M.Rrakida. “Development of an Ecologically Friendly method for the chemical treatment of industrial wastewater generated in the oil industry”
4. S.Hajieva, T.Aliyeva, M.Yusifova. The ecological state of Boyuk Shor lake of Azerbaijan.
5. M.Yusifova ,S.G.Jafarova, G.R.Sariyeva, A.Sh.Abbasov. Environmental characteristics of biodiversity of Binagadi Kir Lake

At BSU, the total volume of water used across the university campus is systematically measured and monitored through the Baku City Water Network (Azersu OJSC) for whole university. All academic buildings, laboratories, dormitories, and administrative facilities are connected to the municipal mains supply, and water consumption data are recorded using officially installed digital meters managed by Azersu.

BSU does not use desalinated water, nor does it extract water directly from rivers, lakes, or aquifers. The entire water supply for the university originates from the municipal mains system, which sources treated potable water from centralized reservoirs and water treatment plants operated by the city’s utility authority.

BSU uses an independent on-site wastewater treatment facility. Additionally, all wastewater generated on campus - including from academic buildings, laboratories, dormitories, and administrative areas - is collected and directed to the central municipal sewage system, which is managed by Azersu OJSC, the national water and wastewater authority.

Through this system, all wastewater from BSU is transported to city-level treatment plants, where it undergoes mechanical and biological purification in compliance with national environmental and public health standards before being safely discharged or reused for non-potable purposes.





Within the university, BSU's Facilities and Maintenance Department ensures that wastewater is properly channeled into the municipal system, preventing contamination risks. In addition, the university promotes responsible chemical and laboratory waste management - all hazardous or chemical waste is pre-treated or neutralized at source under safety protocols before disposal, ensuring environmental compliance.

BSU is also developing a sustainability action plan that includes exploring options for on-site greywater reuse and rainwater harvesting for landscape irrigation in the coming years.

BSU has established clear processes to prevent polluted water from entering the water system, including measures to manage potential pollution caused by accidents or laboratory incidents.

All wastewater from BSU facilities is directed into the municipal sewage network managed by Azersu OJSC, ensuring that only treated water reaches the environment. Within the university, the Facilities and Maintenance Department and the Occupational Safety and Environmental Protection Unit closely monitor drainage systems to prevent accidental discharges.

BSU laboratories follow strict chemical waste management protocols - all chemical residues and potentially hazardous liquids are neutralized, stored separately, and collected by certified waste handlers. Regular staff training and emergency response drills are conducted to handle any accidental spills safely.

In addition, BSU's Green University initiative promotes environmental safety and pollution prevention, reinforcing the university's commitment to protecting water quality and maintaining full compliance with national environmental and safety regulations.

For previous year's report please see:

[REPORT ON SDG 6: CLEAN WATER AND SANITATION](#)

Current situation

BSU provides free and accessible drinking water for students, staff, and visitors throughout its campus. Drinking water fountains and dispensers are available in multiple locations, including:

Main academic building (Faculty of Law and Faculty of History) - water dispensers are installed on each floor for students and staff.

Faculty of Chemistry and Faculty of Biology buildings - purified water stations are maintained near laboratory entrances to ensure safe hydration and support hygiene standards.



Library and central administrative building - modern drinking fountains are available in the lobby areas for both visitors and university personnel.

Student canteen and dormitory areas - equipped with large-capacity water coolers and refill stations providing cold and hot filtered water.

The university's Facilities and Maintenance Department conducts regular checks and maintenance of these systems to ensure water quality and safety, aligning with Sustainable Development Goal 6 (Clean Water and Sanitation) and the university's commitment to healthy campus infrastructure.

BSU applies national and international building standards aimed at minimising water use in its facilities. During the construction, renovation, and maintenance of campus buildings, the university adheres to the following standards and practices:

Azerbaijani national construction norms (AzDTN and SNIP standards) - These include water-efficient plumbing and drainage requirements to reduce water waste in public and academic buildings.

Integration of water-saving fixtures, such as low-flow taps, dual-flush toilets, and sensor-based faucets, particularly in newly renovated facilities (e.g., Faculty of Physics and Faculty of Law buildings).

Landscape irrigation systems are designed to use water efficiently, with regulated watering schedules and use of drought-tolerant plants in green areas.

Rainwater drainage systems are installed in some areas to prevent runoff and to support sustainable water management on campus.

These efforts reflect the university's commitment to sustainable infrastructure development and compliance with environmental efficiency principles consistent with SDG 6 (Clean Water and Sanitation) and SDG 11 (Sustainable Cities and Communities).

BSU actively implements landscape planning practices designed to minimise water usage across its campus. The university's Green Campus and Environmental Management initiatives promote sustainable landscaping through the following measures:

Use of drought-tolerant and native plant species such as juniper, oleander, lavender, and various local grasses that require minimal irrigation and adapt well to Baku's semi-arid climate.

Efficient irrigation systems, including drip irrigation and timed watering schedules, to reduce water consumption and prevent waste.

Soil mulching and ground cover techniques are applied in green areas to retain soil moisture and reduce evaporation.

Campus renovation projects (for example, around the Faculty of Ecology and Faculty of Geography buildings) integrate low-water landscaping designs and native vegetation in courtyards and walkways.



These practices ensure that BSU's campus landscaping remains environmentally sustainable, supports water conservation, and aligns with the goals of SDG 6 (Clean Water and Sanitation) and SDG 15 (Life on Land).

BSU has adopted measures and policies aimed at maximising water reuse and promoting efficient water management across the campus. Through its Environmental Sustainability Policy and Green Campus Action Plan, the university encourages the reuse and recycling of water wherever feasible. Key practices include:

Reuse of laboratory process water after filtration and treatment in selected departments such as the Faculty of Chemistry and Faculty of Biology, where systems allow partial recycling of non-contaminated cooling and cleaning water.

Rainwater collection systems installed in several campus areas, with captured water used for irrigating green spaces and cleaning outdoor surfaces.

Greywater reuse initiatives piloted in newly renovated buildings, where water from sinks and washbasins is redirected for use in toilet flushing and landscape irrigation.

Awareness and monitoring programs coordinated by the Department of Ecology and Environmental Protection, ensuring that water reuse and conservation measures are implemented consistently.

These practices demonstrate the university's ongoing commitment to sustainable water resource management, aligned with SDG 6 (Clean Water and Sanitation) and SDG 12 (Responsible Consumption and Production).

BSU systematically measures and monitors water reuse as part of its Environmental Management and Sustainability Framework. The university, through its Facilities and Maintenance Department in collaboration with the Department of Ecology and Environmental Protection, conducts regular assessments of water consumption and reuse efficiency across campus facilities.

Key monitoring practices include:

Metering systems installed in selected buildings (e.g., Faculty of Chemistry, Faculty of Biology, and new administrative building) to track the volume of reused water from laboratory processes and greywater systems.

Records of rainwater harvesting and reuse maintained for campus landscaping and cleaning purposes.

Annual sustainability reports that include data on water use, reuse rates, and conservation performance indicators, allowing the university to identify opportunities for further efficiency.

Periodic inspections to ensure that water recycling systems function properly and meet hygiene and safety standards.



These monitoring activities enable BSU to quantify its progress in sustainable water management, reinforcing its commitment to SDG 6 (Clean Water and Sanitation) and SDG 12 (Responsible Consumption and Production).

BSU actively provides educational opportunities for local communities to learn about good water management and sustainable water practices. Through its Faculties of Ecology and Soil Science, Geography, and Biology, as well as the Centre for Environmental Research, the university organizes training programs, workshops, and public outreach initiatives aimed at promoting water conservation and responsible use among the wider community.

Concrete examples include:

Workshops and seminars on water conservation, wastewater treatment, and freshwater ecosystem protection, conducted in collaboration with local schools, municipalities, and environmental NGOs.

Community education programs on efficient irrigation and sustainable agricultural water use, particularly targeting rural regions and local farmers.

Public awareness campaigns held on World Water Day and Earth Day, where university experts share practical guidance on reducing water waste and protecting aquatic resources.

Student-led outreach projects, supported by the Faculty of Ecology, that engage local youth in monitoring water quality in nearby lakes and rivers (e.g., Boyukshor and Masazir lakes).

These initiatives demonstrate BSU's commitment to community engagement, environmental education, and the advancement of SDG 6 (Clean Water and Sanitation) and SDG 13 (Climate Action).

BSU actively supports water conservation initiatives beyond its campus, engaging in regional and national projects that promote sustainable water management and environmental stewardship. Through its Faculties of Ecology, Geography, and Biology, as well as the Centre for Environmental Research, the university collaborates with governmental bodies, NGOs, and local communities to extend its impact off campus.

Concrete examples include:

Joint research and monitoring projects with the Ministry of Ecology and Natural Resources of Azerbaijan, focusing on water quality assessment and pollution control in the Caspian Sea and local freshwater bodies such as Boyukshor Lake and Masazir Lake.

Community training programs in nearby rural areas on efficient irrigation techniques, rainwater harvesting, and sustainable agricultural water use.



Participation in national awareness campaigns, such as World Water Day and Clean Caspian initiatives, where BSU experts provide lectures and educational materials to the public.

Student volunteer programs that engage in river and lake cleanup activities and promote water conservation awareness in surrounding communities and schools. Through these actions, BSU demonstrates a strong commitment to extending water conservation efforts beyond its campus, contributing to national progress toward SDG 6 (Clean Water and Sanitation) and SDG 15 (Life on Land).

BSU applies sustainable water extraction technologies wherever water is drawn from natural sources, both on and off campus, ensuring minimal environmental impact and responsible resource management. While the university itself primarily relies on municipal water supply, in cases where water is extracted for research, irrigation, or experimental purposes (e.g., small-scale studies on lakes or rivers), the following measures are applied:

Controlled water abstraction from freshwater bodies such as Boyukshor Lake and Masazir Lake for research purposes, with strict adherence to permitted extraction volumes to avoid ecosystem disruption.

Use of low-impact pumping systems and metered extraction technologies that monitor water usage in real-time, preventing overuse and wastage.

Rainwater harvesting and retention systems on campus to reduce reliance on external water sources for irrigation and laboratory experiments.

Collaboration with environmental authorities to ensure all water extraction activities comply with national water resource management standards and Azerbaijan's ecological regulations.

Research projects promoting sustainable aquaculture, irrigation practices, and ecosystem monitoring, which emphasize minimal water removal and conservation-friendly techniques.

These practices ensure that any water extraction associated with BSU is conducted sustainably, supporting the goals of SDG 6 (Clean Water and Sanitation) and SDG 15 (Life on Land) while fostering responsible research and educational practices.

BSU actively cooperates with local, regional, national, and international authorities to promote water security, sustainable water management, and environmental protection. Through its Faculties of Ecology, Geography, and Biology and the Centre for Environmental Research, the university participates in research, policy development, and community programs related to water resources.

Concrete examples include:



Collaboration with the Ministry of Ecology and Natural Resources of Azerbaijan on projects monitoring water quality in lakes, rivers, and reservoirs, and developing strategies to prevent pollution.

Partnerships with local municipalities to implement sustainable urban water management practices, including stormwater control and efficient irrigation in public green spaces.

Participation in regional initiatives such as the Caspian Sea environmental monitoring programs, addressing water contamination, ecosystem health, and sustainable fisheries management.

Engagement with international organizations and universities on research projects related to water conservation, climate adaptation, and integrated water resources management, contributing to global knowledge and policy development.

Hosting workshops and conferences for government officials and community leaders to share best practices in water security, management, and policy implementation.

Through these collaborations, BSU strengthens water security, advances sustainable development goals (SDG 6 - Clean Water and Sanitation; SDG 13 - Climate Action; SDG 15 - Life on Land), and supports evidence-based policymaking at multiple governance levels.

BSU actively promotes conscious and responsible water usage across its campus through a combination of awareness campaigns, infrastructure design, and educational initiatives. These efforts aim to ensure that students, staff, and visitors understand the importance of water conservation and adopt sustainable habits.

Concrete examples include:

Awareness campaigns and signage in buildings and common areas reminding students and staff to turn off taps, report leaks, and minimise water waste.

Integration of water conservation topics into curricula and workshops offered by the Faculties of Ecology, Biology, and Geography, helping students understand the importance of efficient water use.

Installation of water-saving technologies such as low-flow taps, sensor-based faucets, and dual-flush toilets, paired with guidance on their proper use.

Student-led initiatives and competitions, such as “Save Water, Save Life”, encouraging innovative ideas for reducing water consumption on campus.

Regular monitoring and reporting of water consumption through the university’s Facilities and Maintenance Department, promoting accountability and continuous improvement.

These actions ensure that BSU fosters a culture of conscious water usage, contributing directly to SDG 6 (Clean Water and Sanitation) and supporting sustainable campus operations.



BSU actively promotes conscious water usage in the wider community through educational programs, outreach initiatives, and public awareness campaigns. These efforts aim to encourage responsible water management beyond the campus and foster sustainable practices among local residents, schools, and businesses.

Concrete examples include:

Community workshops and seminars on topics such as efficient irrigation, wastewater management, and freshwater ecosystem protection, conducted by the Faculties of Ecology, Geography, and Biology.

Participation in national campaigns like World Water Day and Clean Caspian initiatives, where university experts provide lectures, distribute educational materials, and engage citizens in discussions on water conservation.

Collaboration with local schools and NGOs to deliver hands-on training programs for students and community members on reducing water waste and implementing sustainable practices.

Student-led outreach projects that involve monitoring local water quality, raising awareness about pollution, and promoting water-saving techniques in nearby communities.

Publication of guides and informational materials on best practices for water conservation, accessible to the general public through the university's website and community centers.

Through these actions, BSU fosters responsible water use in the broader community, supporting SDG 6 (Clean Water and Sanitation) and reinforcing its role as a leader in environmental education and sustainability.

Activities carried out at BSU in 2025 in the direction of SDG 6

An International Scientific Conference on the topic Application of Modern Equipment and Methods in Improving Food and Water Security is being held at BSU

An international scientific conference titled “Application of Modern Equipment and Methods in Improving Food and Water Security” was held at BSU. The event was jointly organized by BSU, Bayramli Group LLC, and AnalytikJena.

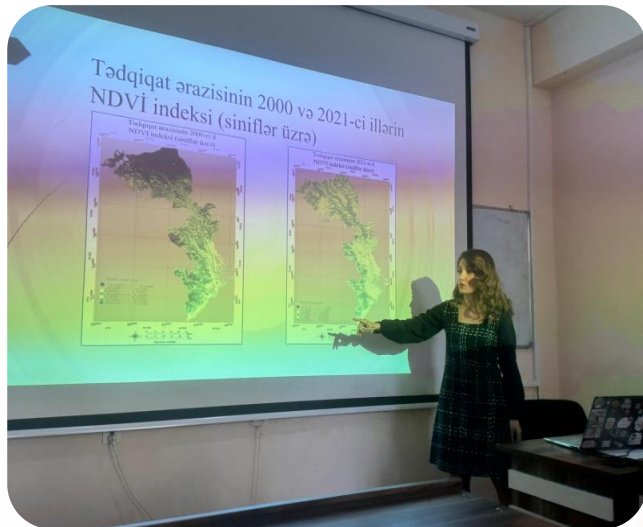
During the opening ceremony, Rector Elchin Babayev emphasized that food and water security are priority areas of state policy and noted that the university contributes to this field through cooperation with its industry partners. It was highlighted that modern laboratories are being established at BSU, new technologies are being implemented, and special attention is given to the training of young specialists.



The conference addressed the application of atomic absorption spectroscopy, ICP-MS, ICP-OES, and other modern analytical methods in food quality control, waste management, and the resolution of environmental problems. For more information please [click](#).



An assessment of the ecological situation in the Həkəriçay reservoir was conducted at BSU



A scientific seminar dedicated to the assessment of the dynamic state of forest-vegetation cover in the Hakarichay basin was held at the Faculty of Ecology and Soil Science of BSU. The seminar featured a presentation by doctoral student Gunel Heydarzade.

The research analyzed changes in vegetation cover, hydrological conditions, and aerosol levels in the Lachin, Gubadli, and Zangilan districts based on satellite data and various indices. The results were presented through maps, diagrams, and graphs. For more information please [click](#).



Young Scientist: I Continued the Research I Started at BSU at Italy’s National Institute of Nuclear Physics – Interview

At BSU, Lala Gahramanlı, PhD in Physics and Senior Lecturer at the Department of Chemical Physics of Nanomaterials, achieved the highest result in the fields of natural, exact, and technical sciences in the “Young Scientist of the Year” competition. She has been awarded this title for three consecutive years and is the author of numerous articles published in internationally indexed (Q1- Q3) journals.

Her research focuses on nanostructures, graphene- and graphene oxide-based materials, sensor technologies, supercapacitors, and triboelectric nanogenerators. She has conducted scientific collaboration with researchers from Italy and Germany.

For more information please [click](#).



The project IRRIGO – Sustainable Agricultural Ecosystem which will be established on the BBSU campus, will be featured in the finals of the TEKNOFEST 2025 SHC



From May 1 to 4, 2025, the world’s largest aviation, space, and technology festival, “TEKNOFEST,” was held in the Turkish Republic of Northern Cyprus. Among more than 15,000 teams and 47,000 participants in the competition, the “BDU TETYM” team of BSU qualified for the final stage in the “TEKNOFEST TRNC Research Projects” category with their project “Irrigo – Sustainable Agricultural Ecosystem.”

For more information please [click](#).



BSU is represented at Caspian Agro – the 18th Azerbaijan International Agriculture Exhibition

BSU participated in the “Caspian Agro” - the 18th Azerbaijan International Agriculture Exhibition with its project “Irrigo - Sustainable Agricultural Ecosystem.” The project uses artificial intelligence to treat wastewater and automatically regulate the type of fertilizers and the mineral composition of irrigation water according to the specific needs of plants.

During the exhibition, the President of the Republic of Azerbaijan, Ilham Aliyev, visited BSU’s booth and was informed about the project. “Irrigo” aligns with the Smart Village concept and the national strategy on efficient water resource management, aiming to contribute to the development of a sustainable and innovative living environment in Karabakh.

The university also presented its recent achievements in startup and technology competitions at the exhibition.

For more information please [click](#).





Republic Scientific Conference on the new stage of land reform and the resolution of ecological problems at BSU

A republic-wide scientific conference titled “The New Stage of Land Reform and the Resolution of Ecological Problems” was held at BSU, organized by the Faculty of Ecology and Soil Science and dedicated to the 102nd anniversary of the birth of the National Leader Heydar Aliyev.

The speakers emphasized Heydar Aliyev’s role in the development of the agrarian sector, land reforms, irrigation and water management, as well as in shaping environmental policy. It was noted that during his leadership, environmental protection became one of the priority directions of state policy, laying the foundation for sustainable development.

At the plenary session, presentations were delivered on the analysis of ecological changes in the Aghdam district based on satellite imagery and on the impacts affecting the wetland ecosystem of Gizilaghaj National Park. For more information please [click](#).





Bayramli Group LLC Holds Workshop on Proper Use of Dispensers at BSU

As part of the Career Festival at BSU, a workshop titled “Proper Use of Dispensers” was organized in collaboration with the State Employment Agency under the Ministry of Labor and Social Protection of the Population, Bayramli Group LLC, the Student Trade Union Committee, the Career and Alumni Center, and BSU Volunteers.

The session provided information on the correct placement and use of dispensers, particularly for hygiene and disinfection products. It was emphasized that proper dispenser use plays an important role in preventing the spread of infections and maintaining sanitary standards.

For more information please [click](#).





Study of the natural vegetation of the Caspian Coast underway at BSU

A scientific seminar on the natural vegetation of the Caspian coast was held at the Faculty of Biology of BSU. During the seminar, Professor Humira Huseynova provided information about the biodiversity of the Caspian coastal vegetation, its ecological and geobotanical characteristics, classification, and mapping using GIS technologies.

The research identified six main ecological zones and numerous phytocoenosis groups along the Caspian coast. It was emphasized that the maps prepared using GIS have scientific importance for biodiversity conservation, natural resource management, and environmental monitoring. For more information please [click](#).



BSU presents results of active biomonitoring of atmospheric air in Baku and Absheron

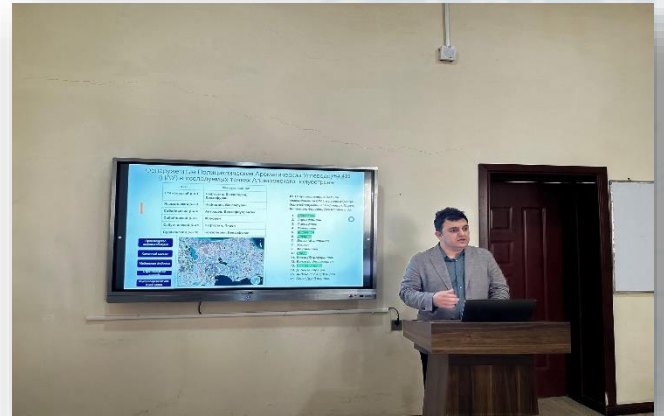
A scientific seminar on atmospheric air biomonitoring was held at the Faculty of Ecology and Soil Science of BSU. During the seminar, PhD student Orkhan Hajiyev presented the results of monitoring conducted at 21 locations on the Absheron



6 CLEAN WATER AND SANITATION



Peninsula using moss samples. The study revealed that in some areas the concentrations of heavy metals and other pollutants exceeded permissible limits. For more information please [click](#).



BSU student wins the “Azad Mirzajanzade Development Program” of RiİB

A fourth-year student of the Faculty of Ecology and Soil Science at BSU, Saida Rahimli, has been selected as a winner of the “Azad Mirzajanzade Development Program” organized by the Regional Development Public Union with her project “CMC-Vessel.”

In the final stage of the program, which received applications from more than 100 students, 10 projects were selected as winners and received financial support. The “CMC-Vessel” project focuses on cleaning oil-based pollution and plastic waste from the Caspian Sea.

For more information please [click](#).

The poster features the logos of Baku State University (BAKI DÖVLƏT UNIVERSİTETİ) and the Azad Mirzajanzade Development Program (AZAD MİRZƏCANZADƏ inkişaf proqramı). It highlights the Regional Development Public Union (RiİB) and its role in the program. The central focus is on Saida Rəhimli, a student from the Faculty of Ecology and Soil Science, who has won the program with her project "CMC-Vessel". The poster includes social media icons and the website address bsu.edu.az.



BSU participates in “Sustainability Exhibition: Art and Innovation for the Planet”

BSU participated in the “Sustainability Exhibition: Art and Innovation for the Planet,” held within the framework of Baku Climate Action Week, with two innovative projects - “Irrigo: Sustainable Agricultural Ecosystem” and “Hydroponics.”

The “Irrigo” project focuses on water conservation, wastewater treatment for reuse in irrigation, and the promotion of sustainable agriculture through smart technological solutions. The “Hydroponics” project promotes the adoption of soilless cultivation systems, encouraging efficient resource use and contributing to the development of a green economy.

“Irrigo” was selected as one of the top six projects at the exhibition, and the team was awarded a certificate for active participation and innovative contribution. For more information please [click](#).





Scientific seminar on the modeling of the Hakari River held at the faculty of Geography

A scientific seminar on “Modeling the Hakari River Using MATLAB Software” was held at the Faculty of Geography of BSU. During the seminar, the importance of strengthening research activities and applying modern modeling methods to water resources in Azerbaijan’s liberated territories was emphasized. Associate Professor Banovshe Mehdiyeva presented her study on the mathematical modeling of the Hakari River and its tributaries, discussing hydrological regimes, average annual flow, flood events, and water resource management. For more information please [click](#).



Student Scientific Society seminar held

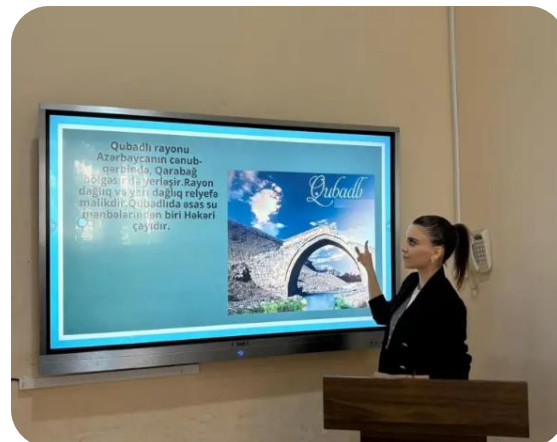
The next seminar of the Student Scientific Society was held at the Faculty of Ecology and Soil Science of BSU.

During the seminar, master’s students Banu Huseynova presented on the analysis of the physicochemical parameters of water samples taken from the Hakari River, while Aydan Imanova delivered a presentation on the determination of cobalt, zinc, and iron in local and imported fruits.


For more information please [click](#).



Фруқ Тай	Обла райо	Клуб нимо	Вилои #	Китби	Сано роҳат	БАҲ ам/а
Zr:	12.3	9.8(а ест); 12.5 (иқт оп)	0.08	11.23	7.8	10
Co:	0.11	0.42(т иқт р); 0.021 (иқс иқс)	0.038	0.4	1.06	0.03



Qubadli rayonu Azərbaycanın cənub-qərbində, Qarabağ bölgəsində yerləşir. Rayon dağlıq və yarıdağlıq rəlyefə malikdir. Qubadli əsas su mənbələrinin biri Həkəri çaydır.

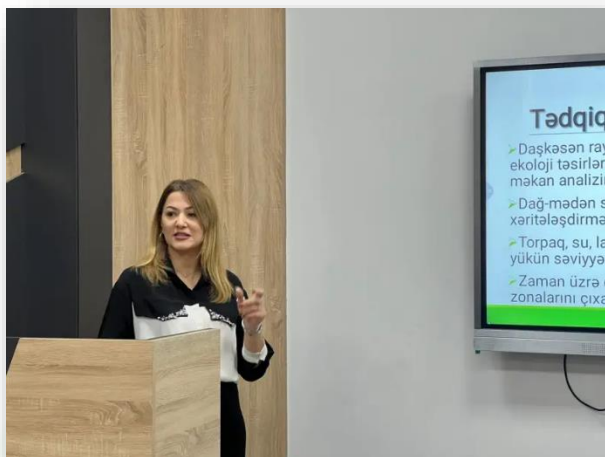


Scientific seminar on the ecological problems caused by the mining industry

A scientific seminar dedicated to the investigation of ecological problems caused by the mining industry in the Dashkasan district using GIS technologies was held at the Faculty of Geography of BSU.

During the seminar, the impacts of mining activities-such as soil degradation, forest transformation, and water pollution-were analyzed. Ecological risk zones were mapped, and recommendations were presented for addressing these environmental problems.

For more information please [click](#).



Tədqiq

- Dashkasan rayonu ekoloji təsirlərin məkan analizini
- Dağ-mədən sənayesi xəritələşdirmə
- Torpaq, su, təbii qayaların hazırkı vəziyyəti
- Zaman üzrə ekoloji risk zonalarını çıxarmaq





Scientific seminar held

On November 25, 2025, a scientific seminar was held at the Faculty of Ecology and Soil Science of BSU. During the seminar, doctoral student Gunel Heydarzade delivered a presentation on the ecological assessment of humidity using the MNDWI index in the Lachin, Gubadli, and Zangilan districts.

The research analyzed changes in hydrological conditions and vegetation cover based on satellite imagery (2000 and 2021), GIS technologies, and archival materials. The results showed significant shifts in moisture distribution, particularly in shrublands, grasslands, non-forested areas, and sparse forest zones, providing a scientific basis for ecological monitoring and sustainable land management in the liberated territories.

For more information please [click](#).



BSU students conduct scientific research on nanotechnologies and environmental safety

A scientific seminar of the Student Scientific Society was held at the Faculty of Physics of BSU. During the seminar, students delivered presentations on the application of nanotechnology in water purification, as well as on environmental protection and environmental safety. At the end of the event, the dean of the faculty emphasized the importance of increasing students' interest in scientific activities.

For more information please [click](#)



CONCLUSION

BSU demonstrates a strong commitment to the principles of Sustainable Development Goal 6 (Clean Water and Sanitation) through responsible water management, conservation initiatives, and active engagement in research and community education. The university has implemented systematic monitoring of water consumption through metering systems, adopted water-saving technologies such as sensor-based taps and efficient irrigation methods, and developed infrastructure that supports rainwater harvesting and wastewater management.

Efforts to reduce water consumption are further supported by sustainable landscaping practices, including the use of drought-tolerant plant species and the planned expansion of drip irrigation systems. At the same time, the university is exploring opportunities to increase water reuse, particularly through wastewater treatment and potential greywater recycling systems. These initiatives demonstrate a proactive approach to improving water efficiency and reducing environmental impact.

Beyond operational practices, the university contributes significantly to knowledge creation and public awareness through scientific research, conferences, and educational outreach programs related to water quality, wastewater treatment, and ecosystem protection. Collaboration with governmental institutions, international partners, and local communities further strengthens BSU's role in promoting sustainable water management at both national and regional levels.



6 CLEAN WATER AND SANITATION



SDG FOCUSED MEMBERSHIPS





SDG FOCUSED RANKING RESULTS



Rated for Excellence

Baku State University

Through rigorous and independent data collection and analysis of performance metrics as set out in the QS Stars™ methodology Baku State University has been awarded 5 Stars.

★ ★ ★ ★ ★
TEACHING

★ ★ ★ ★ ★
FACILITIES

QS Stars

The QS Stars™ rating system evaluates universities across a wide spectrum of important performance indicators as set against pre-established international standards. By assessing a broader scope of criteria than any world ranking exercise, QS Stars™ illuminates the unique strengths and diversity of the rated institution with both precision and clarity.

★ ★ ★ ★ ★
EMPLOYABILITY

★ ★ ★ ★ ★
GOOD GOVERNANCE

★ ★ ★ ★ ★
ENVIRONMENTAL IMPACT

★ ★ ★ ★ ★
ACADEMIC DEVELOPMENT

★ ★ ★ ★ ★
GLOBAL ENGAGEMENT

★ ★ ★ ★ ★
CHEMISTRY

Leigh Kamolins, Head of Evaluation

★ ★ ★ ★ ★
DIVERSITY, EQUITY & INCLUSION



6 CLEAN WATER AND SANITATION



Baku State University

941-950

in overall performance

December 2024

Date

Ben Sowter
Senior Vice-President
QS Quacquarelli Symonds



6 CLEAN WATER AND SANITATION



UNIVERSITAS
INDONESIA

Widya, Prabhu, Shakti | Et aly

UI GreenMetric World
University Rankings 2025

CERTIFICATE

This certificate is awarded to

Baku State University

as The 493rd World's Most Sustainable University
in 2025 UI GreenMetric World University Rankings

5 December 2025



Dr. Vishnu Juwono, S.E., MIA
Chairperson of UI GreenMetric





4. RANKING IN AZERBAIJAN



2. RESULTS SUMMARY



3. WORLD RANKINGS HISTORY





UNIVERSITY PROFILE

NAME : BAKU STATE UNIVERSITY
 EST. : 1919
 COUNTRY : AZERBAIJAN

1. VERIFIED DATA

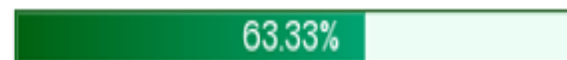
Campus Sustainability Scores

Overall Performance
68.75 %

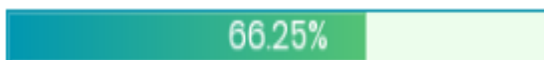
Total Score
6875 / 10000



SI Setting & Infrastructure
 Current: **950** Maximum: 1500



WR Water
 Current: **662.5** Maximum: 1000



EC Energy & Climate Change
 Current: **1000** Maximum: 2100



TR Transportation
 Current: **1625** Maximum: 1800



WS Waste
 Current: **1075** Maximum: 1800



ED Education & Research
 Current: **1562.5** Maximum: 1800





THE IMPACT RANKINGS

OVERALL RANK

401–600 out of **2318** institutions

OVERALL SCORE

71.8 out of **100**



CLEAN WATER AND SANITATION

SCORE

63.1

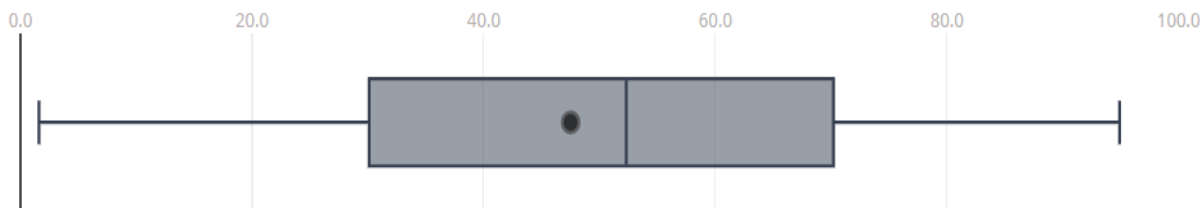
RANK

201–300 out of **1042** institutions

SCORE

47.5 Research on water

27% OF THIS SDG



SCORE

27.2 Water consumption per person

19% OF THIS SDG

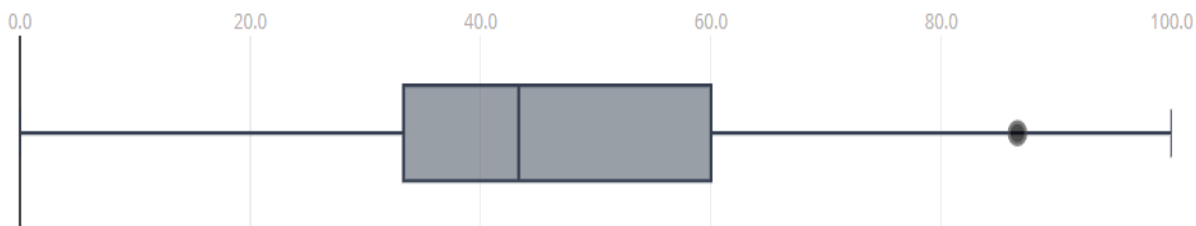




SCORE

86.6 Water usage and care

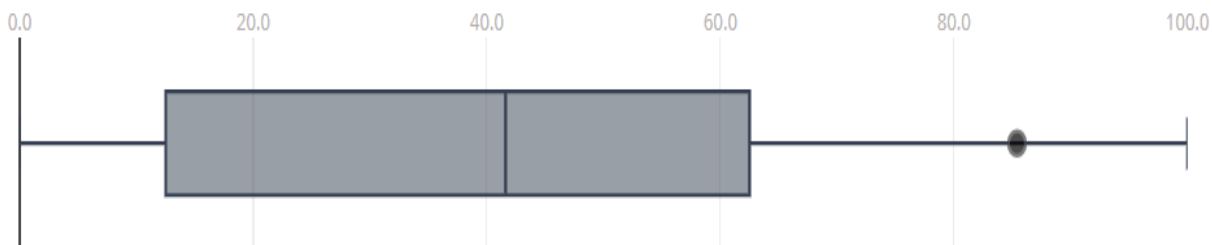
23% OF THIS SDG



SCORE

85.4 Water reuse

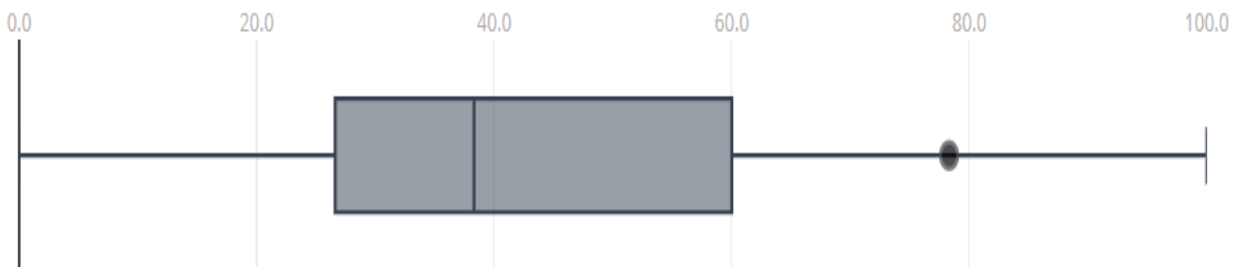
12% OF THIS SDG



SCORE

78.3 Water in the community

19% OF THIS SDG





SDG FOCUSED RESEARCH

BSU emphasizes the importance of implementing the United Nations Sustainable Development Goals aimed at addressing global challenges. Among these goals, SDG 6: Clean Water and Sanitation holds particular significance. Efficient water resource management, ensuring access to safe drinking water, and protecting aquatic ecosystems are considered important priorities both for the country and the wider region.

Based on its scientific capacity in ecology, biology, and environmental sciences, the university conducts research on water quality monitoring, wastewater treatment, and integrated water resource management. These activities enable the practical application of scientific knowledge while contributing to the resolution of local and regional water challenges and strengthening the university's participation in international sustainable development initiatives.

1. Authors: Yuennan, J., Al-Sulaimi, S.S., Karimov, M.K., Guesmi, A., Channuie, P.
Focus: Visible-light activated $W_{0.5}Ag_{0.5}FeO_3$ nanoparticles for tetracycline degradation.

Methods: Photocatalysis with peroxydisulfate.

Findings: High efficiency, broad pH range, multiple reactive species, stable system.

Recommendation: Green solution for wastewater treatment.

[Full text](#)

2. Authors: Naghiyeva, U.N., Hajiyeva, S.R., Hajiyeva, F.V., Bracciale, M.P., Bavasso, I.

Focus: Pomegranate peel- Fe_3O_4 biosorbents for crude oil removal.

Methods: Oil-water adsorption experiments, kinetic modeling.

Findings: 10% Fe_3O_4 loading removed 82% oil in 10 min; adsorption fits pseudo-first order (physisorption).

Recommendation: Eco-friendly method for oil spill remediation.

[Full text](#)

3. Authors: Abiyev, Y., Mukhtarova, S., Muradova, A., Markova, L.M., Hasanova, G.

Focus: Freshwater algae diversity in Samur-Yalama National Park (Azerbaijan).

Methods: Seasonal survey of algal taxa and water chemistry.

Findings: 46 taxa recorded (mostly new); clean, oxygen-rich streams; nutrients shape communities.



Recommendation: Use as baseline data for conservation and monitoring.

[Full text](#)

4. Authors: Humbatov, F.Y., Solut, H.A.N., Aslanova, G.F., Balayev, V.
Focus: Radioactive, heavy metal, and pesticide contamination in Okchuchay & Basitchay rivers (Azerbaijan).

Methods: Gamma spectrometry, AAS, gas chromatography.

Findings: Pollution threatens agriculture and drinking water.

Recommendation: Immediate monitoring, pollution reduction, ecological restoration.

[Full text](#)

5. Authors: Maeyouf, H., Afifi, R.A., Temraz, T.A., Ali, I., Imanova, G.T.

Focus: Heavy metals in Libyan coasts (Susah & Tobruk).

Methods: Sediment, seawater, fish analyses.

Findings: High cadmium/lead in Susah; bioaccumulation in fish.

Recommendation: Urgent pollution management.

[Full text](#)

6. Authors: Gadirova, E.M., Kurbanova, R.V., Asadova, I., Habibova, A.G., Suleymanova, E.I.

Focus: Oil refinery wastewater and Caspian Sea pollution.

Methods: Analysis of PAHs and heavy metals.

Findings: Some PAHs exceed safe limits; industrial effluents pose risks.

Recommendation: Stricter wastewater control.

[Full text](#)

7. Authors: Teymurova, V.E., Abdullayeva, S., Muradova, K., Aslanova, M.M., Bayramli, M.

Focus: Environmental challenges and economic impacts in Azerbaijan.

Methods: Policy and economic analysis.

Findings: Environmental degradation undermines competitiveness.

Recommendation: Invest in human capital, education, and green technologies.

[Full text](#)

8. Authors: Aliyev, S.I., Ahmadova, K., Suleymanov, S., Abdurrahmanova, Z., Farzali, S.

Focus: Zoobenthos biodiversity in Yalama River (Azerbaijan).

Methods: Field sampling (2020–2023).

Findings: 53 species identified; bioindicators of water quality.



Recommendation: Biodiversity monitoring for ecological health.

[Full text](#)

9. Authors: Huseynova, G., Valiyeva, A., Tahmezli, E., Surkhayli, S., Tahmezli, M.
Focus: GIS and remote sensing for water quality in Guba-Khachmaz (Azerbaijan).
Methods: GIS modeling, multivariate analysis, GEE tools.
Findings: Climate change impacts mapped effectively.
Recommendation: Expand GIS-based water resource planning.

[Full text](#)

10. Authors: Abduvalieva, M.J., Turaev, K.K., Kasimov, S.A., Ismailov, E.H.,
Nomozov, A.K.
Focus: Polymer ion exchanger for heavy metal removal.
Methods: Thermal & IR analysis, adsorption isotherms.
Findings: Effective sorption of Ni(II), Co(II), Cu(II); stable polymer.
Recommendation: Potential sorbent for wastewater treatment.

[Full text](#)

11. Authors: Maeyouf, H., Afifi, R.A., Temraz, T.A., Ali, I., Imanova, G.T.
Focus: Heavy metals along Benghazi coast (Libya).
Methods: Seawater, sediments, marine life testing.
Findings: High cadmium; mussels/fish bioaccumulate metals.
Recommendation: Strengthen wastewater treatment and monitoring.

[Full text](#)

12. Authors: Humbatov, F.Y., Ibrahimov, G., Aslanova, G.F., Karimova, N.,
Karimbeyli, I.
Focus: Radioecological risks in demined Gubadli region (Azerbaijan).
Methods: Radiation and water quality surveys (64 sites).
Findings: 7.5 $\mu\text{R/h}$ average radiation; unsafe mineral and metal levels in water.
Recommendation: Continuous monitoring, ecological restoration.

[Full text](#)

13. Authors: Guliyeva, Z., Maxsudov, S., Garibova, S., Novruzova, S., Guliyev, S.
Focus: Vermicompost + irrigation for tomato growth in clay soil.
Methods: Greenhouse experiment.
Findings: 1.0 t/da vermicompost \uparrow yield, soil quality, nutrient content.
Recommendation: Integrate organic fertilizers for sustainable farming.

[Full text](#)



14. Authors: Mammadli, S., Khalilov, R.I., Muslumova, Z., Farajov, M., Ismailova, G.

Focus: Araz River pollution impact on soil and water.

Methods: Mass spectrometry, radiometry.

Findings: High molybdenum, copper, manganese; unsafe for humans/livestock.

Recommendation: Pollution control to protect health.

[Full text](#)

15. Authors: Aliyeva, S.B., Azizkhanli, S.A.

Focus: Acridine Orange dye toxicity and removal methods.

Methods: Review (1981–2024 studies).

Findings: Adsorption main removal method; electrostatic interactions dominate; regeneration possible.

Recommendation: Advance adsorbent design and computational research.

[Full text](#)

16. Authors: Gadirova, E.M., Hajiyeva, S.R., Huseyinli, A.G., Rustamova, U.N.

Focus: Wastewater and Caspian Sea contamination by PAHs/heavy metals.

Methods: Industrial wastewater + seawater sampling.

Findings: Detected dangerous PAH and metal levels.

Recommendation: Strengthen industry regulation.

[Full text](#)

17. Authors: Zakiyeva, I.H., Hashimov, A.M., Samadova, U.F., Aligayev, A.K., Hasanova, S.I.

Focus: Innovative wastewater treatment with electrical discharge.

Methods: Mass spectrometry; adsorbent modification via high-voltage discharge.

Findings: Electrical discharge improved sorption efficiency for heavy metals.


















Recommendation: Adopt advanced discharge-based methods for sustainable treatment.

[Full text](#)

For all SDGs related articles please visit: [Scopus - Baku State University](#)



SDG contributions

 Goal 1: No poverty	9 documents	 Goal 10: Reduced inequalities	40 documents
 Goal 2: Zero hunger	74 documents	 Goal 11: Sustainable cities and communities	37 documents
 Goal 3: Good health and well-being	241 documents	 Goal 12: Responsible consumption and production	44 documents
 Goal 4: Quality education	21 documents	 Goal 13: Climate action	55 documents
 Goal 5: Gender equality	12 documents	 Goal 14: Life below water	50 documents
 Goal 6: Clean water and sanitation	83 documents	 Goal 15: Life on land	31 documents
 Goal 7: Affordable and clean energy	353 documents	 Goal 16: Peace, justice and strong institutions	36 documents
 Goal 8: Decent work and economic growth	68 documents	 Goal 17: Partnership for the goals	47 documents
 Goal 9: Industry, innovation and infrastructure	101 documents		