Khazar University

Sustainable Development Goals

Summary Report

2025

Baku, Azerbaijan

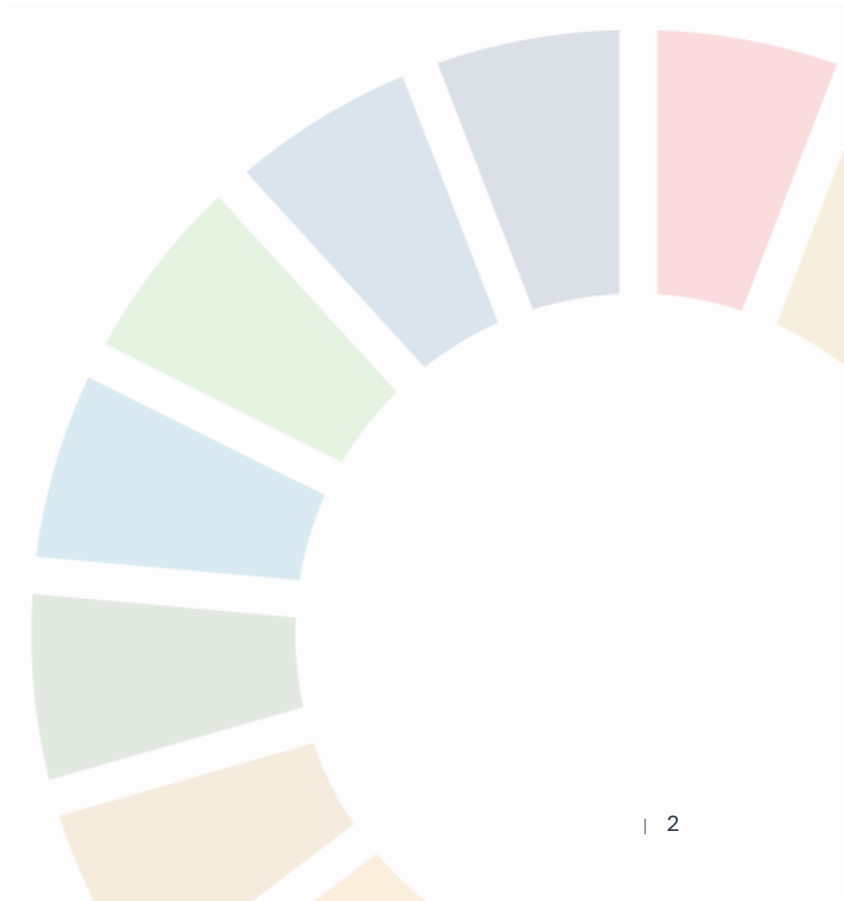


Mission

As in the previous year, Khazar University continues to serve Azerbaijan and the wider region through high-quality, student-centered education across undergraduate, graduate, and doctoral levels. The university remains committed to continuously strengthening academic excellence and producing impactful research that drives national development and global knowledge advancement.

Vision

Khazar University`s vision is to be recognized as a globally influential research and innovation–driven university, leading in education quality, interdisciplinary collaboration, and meaningful engagement with national and international partners.



Commitment to Sustainable Development Goals (SDGs)

2025 Overview

In 2025, Khazar University continued to strengthen its commitment to the United Nations Sustainable Development Goals (SDGs) through education, research, institutional initiatives, and international cooperation. Key activities included:

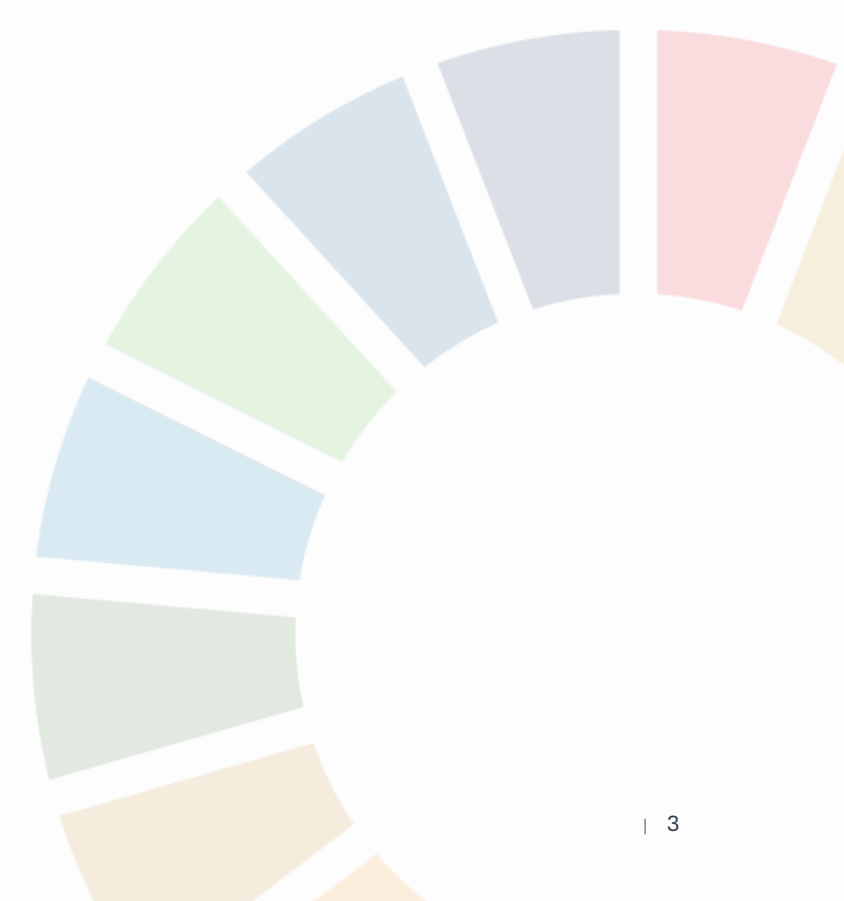
🎓 **Education:** Promoting sustainability-related learning across academic disciplines;

🔬 **Research:** Advancing interdisciplinary research and international knowledge exchange on sustainability challenges;

🌐 **Inclusion:** Supporting equal opportunities, diversity, and student well-being;

🤝 **Partnerships:** Strengthening cooperation with universities, government institutions, NGOs, and international organisations;

📊 **Accountability:** Monitoring and documenting progress across the 17 SDGs to support transparent institutional reporting.



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17 Sustainable Development Goals



2025 / ANNUAL SUSTAINABILITY REPORT



SDG 1 | No Poverty

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University addresses the economic barriers that may limit access to higher education through its published financial-assistance arrangements, scholarship opportunities and partnerships that connect students with education-financing information, professional development and employment-related networks. This report brings together the University's documented initiatives during 2025 and organises them around research, student support and community engagement.

25 / 50 / 75%	**104**	**Nearly 50**
Published merit-based tuition awards	EUROSTUDENT survey respondents	Career Fair participating organisations

1.1 Research on poverty

Research is an important part of Khazar University's efforts to support sustainable development. Khazar University contributes to research addressing poverty, financial inclusion, income inequality and sustainable economic development. Its Scopus-indexed research includes studies exploring how financial technologies, financial stability and access to financial services influence economic opportunities and income distribution.

In earlier research, researchers affiliated with Khazar University published studies examining the relationship between FinTech, financial inclusion and income inequality in African economies, as well as the impact of financial inclusion and stability on economic growth. Other research explored the economic value of water resources in Baku, contributing to broader discussions on resource management and sustainable development.

During 2025, research activities also addressed emerging challenges related to energy poverty and inclusive financing. Studies by Kou et al. and Eti et al., developed through the publication process in 2025 examined innovative financing mechanisms, energy accessibility and strategies for reducing energy poverty. Further researchs explored renewable energy investments in underserved communities, sustainable banking and financial approaches to addressing economic vulnerability. These studies reflect the University's expanding research interests in inclusive and sustainable development.

These research activities demonstrate the University's engagement with economic and social challenges relevant to poverty reduction and provide a foundation for further interdisciplinary research and international academic collaboration.

1.2 Proportion of students receiving financial aid to attend university because of poverty

Khazar University's published Financial Aid policy outlines tuition-related support based on examination performance and several family or personal circumstances. The listed provisions cover students from martyr families, families of people disabled during the Karabakh war, students who have lost both parents or a parent during their studies, households with two or more children enrolled at Khazar University, employee families and eligible alumni.



The University's financial-assistance framework provides several routes through which students can seek relief from educational costs. The circumstances-based provisions and merit-based awards serve distinct purposes and are therefore described separately.

In its 2024–2025 call, the Nailekhanim Foundation Scholarship announced one competition-based full scholarship for an academically outstanding female master's or doctoral applicant, with an application deadline of 1 June 2025. The published eligibility criteria focused on academic merit and commitment to postgraduate study.

The Khazar University International Scholarship Program 2025/2026 also advertised tuition scholarships covering 25%, 50% or 75% for applicants across bachelor's, master's and doctoral programmes, alongside a full-scholarship pathway for eligible female postgraduate students.

1.3 University anti-poverty programmes

Khazar University's published assistance framework identifies family and personal circumstances that may create barriers to entering higher education. The policy provides context for how the University approaches access and affordability for prospective students.

The published Financial Aid policy also recognises hardship that can arise after enrolment, including the loss of a parent during a student's studies. Addressing changes in family circumstances forms part of the University's broader approach to educational continuity.

Support for participation in higher education may involve living and travel costs in addition to tuition. The 2025/2026 international scholarship announcement described a full-scholarship package for eligible female postgraduate students that included tuition, transport and a monthly stipend. These advertised benefits represent a broader support package than tuition relief alone.

On 27 November 2025, the Quality Assurance Center and Career and Alumni Center jointly hosted an information session with the Education Student Loan Fund for first- and second-year students. A Fund specialist explained the credit mechanisms, application requirements, grace periods and support packages, and responded to students' questions. The session provided practical guidance on an available educational-financing route.

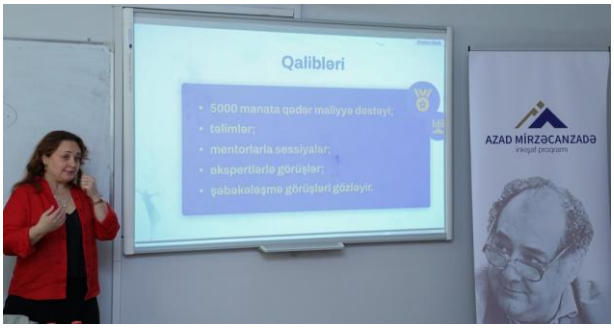




Khazar University communicated international scholarship opportunities that were open to applicants regardless of citizenship. **The 2024–2025 Nailekhanim Foundation call** and the **2025/2026 International Scholarship Program** offered pathways for eligible international students to seek postgraduate or tuition support. The publicly described selection conditions for these calls included academic criteria.

1.4 Community anti-poverty programmes

On 10 October 2025, the Career and Alumni Center arranged an information session on the Azad Mirzajanzade Development Program for students and graduates. Programme representatives outlined application procedures, mentorship and training stages, and mechanisms through which project ideas could seek financial support. A previous participant shared his experience with the audience.





The same session introduced attendees to external opportunities for project development and funding. It raised awareness of financial pathways available through the development programme, rather than documenting direct start-up grants awarded by Khazar University.

The University's participation in the EUROSTUDENT survey on 7–8 April 2025 contributed information on students' social conditions and experiences. In total, 104 Khazar University students participated, including 96 undergraduate and eight postgraduate students. The data collection addressed educational experiences, social circumstances, career expectations and psychological well-being.





EUROSTUDENT formed part of a wider national research initiative conducted by the Center for Sociological Research at the request of the Ministry of Science and Education. The University's participation added student perspectives to a dataset relevant to higher-education policy discussions. This contribution concerned research participation and information gathering.



On 11 April 2025, the University's Career and Alumni Center met with the Baku Regional Employment Branch of the State Employment Agency to discuss job fairs, youth employment, occupational training and practical experience. The collaboration connected students and graduates with potential employment-support networks.

On 23 May 2025, Career Fair 2025 brought together nearly 50 companies and organisations at the Neftchilar campus. Employer representatives spoke with students and graduates about vacancies and internships, collected CVs and conducted preliminary interviews. These activities supported employability and were complementary to, rather than substitutes for, targeted anti-poverty support.





Selected Activities in 2025

2025	ACTIVITY
11 Apr	State Employment Agency cooperation meeting
16 Apr	KPMG Azerbaijan Audit Career Day
17 Apr	“Maarifchi” internship programme session
8 May	Innab Data Analytics seminar
23 May	Career Fair 2025
24 Oct / 12 Dec	AIESEC global opportunities sessions
30 Oct	Career Guidance seminar
13 Nov	PepsiCo internship and recruitment meeting
25 Nov	Avrasiya Translation Center career seminar
26 Nov	SOFAZ sustainable economic development session

2025 Overview

Across 2025, Khazar University maintained a published financial-aid framework, publicised scholarship opportunities, improved access to information about education loans, and brought students and graduates into contact with employers and development programmes. These documented activities form part of the University’s continued work to broaden educational and professional opportunity. The sustainability report presents them according to their established scope, without attributing outcomes that have not been meas

2025 / ANNUAL SUSTAINABILITY REPORT

SDG 2 | Zero Hunger

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University approaches food security through sustainable food policies, nutrition-related campus provisions and international collaboration on agriculture and environmental health. During 2025, the University participated in research and knowledge-sharing activities on climate-resilient crops, sustainable farming and the links between food systems and public health. The initiatives below present the University's documented work during the reporting year.

2022	11–12 Mar	70+
Sustainable food policy adopted	SORG4NOBAL final event	One Health researchers in 2025

2.1 Research on hunger

In 2025, Khazar University strengthened its research contributions to food security, sustainable agriculture, crop resilience, and agricultural biodiversity. University-affiliated researchers contributed to **15 Scopus-indexed publications associated with SDG 2 (Zero Hunger)**, reflecting interdisciplinary engagement in agricultural sciences, environmental sustainability, and technological innovation.

Agricultural biodiversity and climate-resilient crops represented important areas of scientific investigation. Mammadova et al. (2025) examined the genetic diversity of 45 Azerbaijani bread wheat genotypes using molecular markers associated with drought tolerance, identifying genetic characteristics relevant to future crop-breeding research. Similarly, Ojaghi et al. (2025) investigated the allelic diversity of 50 Azerbaijani wheat accessions, contributing to the scientific understanding and conservation of local agricultural genetic resources. Salimov et al. (2025) further explored the genetic and morphological diversity of Azerbaijani grape varieties, supporting research on crop biodiversity and genetic resource management.

Research also addressed **climate change and sustainable agricultural production**. Tasneem et al. (2025) investigated the effects of changing climatic conditions on rice yields through machine learning models, providing insights into agricultural vulnerability and yield forecasting. Hummatov et al. (2025) examined the natural and ecological characteristics of agricultural landscapes through field surveys and remote sensing, contributing to environmental assessment approaches relevant to sustainable land management.

In the field of **agricultural innovation and resource efficiency**, Alam et al. (2025) developed a machine learning approach incorporating uncertainty quantification to improve crop recommendation systems and agricultural decision-making. Morchid et al. (2025) investigated smart irrigation technologies integrating embedded systems and predictive models to support more efficient water management and sustainable agricultural practices.

Together, these publications demonstrate Khazar University's interdisciplinary research engagement in food security, agricultural sustainability, climate adaptation, and technological innovation. Through scientific research and international academic collaboration, the University contributes knowledge relevant to resilient agricultural systems and the long-term sustainability of food production.

Selected Research Publications (2025)

1. **Mammadova et al. (2025).** *Genetic diversity analysis of Azerbaijani bread wheat (Triticum aestivum L.) genotypes with simple sequence repeat markers linked to drought tolerance.* Genetic Resources and Crop Evolution. DOI
2. **Ojaghi et al. (2025).** *Allelic diversity of Azerbaijani bread wheat (Triticum aestivum L.) by SSR markers.* Turkish Journal of Agriculture and Forestry. DOI
3. **Salimov et al. (2025).** *Inter simple sequence repeat (ISSR) based genetic and morphological polymorphism of Azerbaijani grape (Vitis vinifera) genotypes.* Genetic Resources and Crop Evolution. DOI
4. **Tasneem et al. (2025).** *Predicting rice yield and impact of climate change on rice production using machine learning models.* Theoretical and Applied Climatology. DOI
5. **Alam et al. (2025).** *An approach for crop recommendation with uncertainty quantification based on machine learning for sustainable agricultural decision-making.* Results in Engineering. DOI

6. **Morchid et al. (2025).** *An Innovative Smart Irrigation Using Embedded and Regression-Based Machine Learning Technologies for Improving Water Security and Sustainability.* IEEE Access. DOI
7. **Hummatov et al. (2025).** *Study of natural-ecological conditions in agro-landscapes based on field surveys and remote sensing.* Visnyk of V. N. Karazin Kharkiv National University, Series Geology, Geography, Ecology. DOI

On the other hand, research and international cooperation help Khazar University explore how environmental changes affect agriculture and access to food. In 2025, the Department of Life Sciences participated in the final activities of SORG4NOBAL, an international research project that examined climate-resilient sorghum as a way to reduce agricultural pollution and strengthen food security. The project brought together researchers from several countries to exchange knowledge on crop resilience, biodiversity and sustainable agricultural practices.

On 11–12 March 2025, project participants discussed nature-based solutions and agroecology, including possible uses of sorghum for animal feed and human nutrition. These exchanges connected agricultural research with practical environmental challenges and opportunities for future collaboration.

2.2 Campus food waste

Khazar University's Policy to Ensure that Food on Campus is Sustainably Farmed provides a framework for responsible food sourcing, consumption and disposal. Adopted in January 2022, the policy considers food loss and waste alongside water and soil health, biodiversity, animal welfare and workers' well-being. It applies to food and beverage provision for the University community, including contracted services and suppliers.

The policy calls for annual assessments of progress and communication of the results to University authorities. Reducing unnecessary food waste is part of the University's wider approach to managing the environmental impact of campus food services.

2.3 Student hunger

Access to nutritious and reasonably priced food contributes to students' health and well-being. Under the University's Health and Well-being Policy, which was revised in January 2024, campus nutrition and food services are expected to offer balanced, affordable meals and different dietary options, including vegetarian and allergy-sensitive choices. The policy also addresses food-safety and hygiene standards and awareness of healthy eating habits.

These provisions show how nutrition is considered in the University's campus well-being framework. They provide a policy basis for making healthy food choices more accessible to students and other members of the University community.

2.4 Proportion of graduates in agriculture and aquaculture including sustainability aspects

Khazar University's Life Sciences activities connect academic knowledge with challenges in sustainable agriculture and food production. Participation in SORG4NOBAL brought researchers into discussions on climate-resilient crops, biodiversity and the responsible use of natural resources. The University's broader scientific engagement also links food-related sustainability to environmental and public health research.

2.5 National hunger



Food security depends on the exchange of useful research and practical knowledge among universities, farmers, public institutions and other stakeholders. The SORG4NOBAL final event held in Azerbaijan on 11–12 March 2025 brought together international researchers, farmers and representatives of organisations including FAO and the Ministry of Agriculture. Sessions covered agroecology, agricultural biodiversity and possible applications of sorghum in food and feed production.

The programme included a visit to the Genetic Resources Institute and its National Genebank. Discussions highlighted the importance of knowledge exchange, farmer awareness and collaborative research for resilient agricultural practices.



On 28–29 November 2025, Khazar University hosted the 4th International Conference on "One Health: Problems and Solutions" with national and international partners, including Azerbaijan's Food Safety Agency and the Swedish University of Agricultural Sciences. A session on climate change, health and food security explored how environmental and agricultural challenges affect human well-being.

The conference brought together more than 70 researchers from seven countries and included 24 presentations. It provided a forum for exchanging research findings and discussing ways to improve cooperation among environmental, agricultural and health organisations.



At the institutional level, the sustainable food policy also sets out considerations for food purchasing, including resource use, soil and water health, nutrition, workers' rights and animal welfare. These commitments provide a framework for taking environmental and social factors into account when sourcing food for campus services.



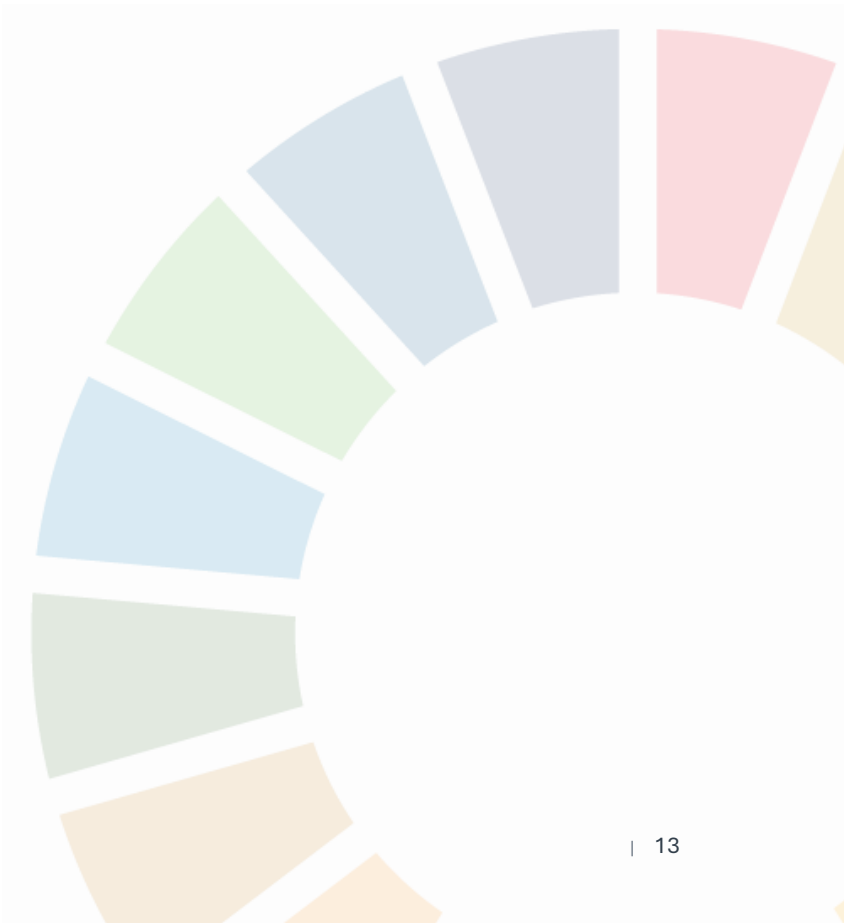
2025 event sources: SORG4NOBAL | One Health

Selected Activities in 2025

2025	ACTIVITY
11–12 Mar	Final event of the SORG4NOBAL international research project
28–29 Nov	4th International Conference on One Health: Problems and Solutions

2025 Overview

Throughout 2025, Khazar University maintained policies addressing sustainable campus food provision and food-related well-being, contributed to research on climate-resilient agriculture, and hosted dialogue linking food security, environmental change and public health. The SORG4NOBAL project and the One Health conference created opportunities for collaboration among researchers, public institutions and agricultural stakeholders. Together, these activities reflect the University's engagement with the wider goals of sustainable food systems and improved food security.



2025 / ANNUAL SUSTAINABILITY REPORT

SDG 3 | Good Health and Well-being

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University supports good health and well-being through on-campus medical and psychological services, research, health education and partnerships with health institutions. In 2025, the University strengthened cooperation and shared knowledge on mental health, disease prevention, first aid and the links between human, animal and environmental health.

204	**70+**	**24**
First-year students in mental-health research	Researchers at One Health conference	Conference presentations

3.1 Research on health and well-being

In 2025, Khazar University continued to strengthen its contribution to health-related scientific research, with **109 final-status Scopus-indexed research articles and reviews associated with SDG 3 (Good Health and Well-being)**. These publications reflect the University's interdisciplinary engagement in mental health, disease prevention, oncology, infectious diseases, and innovative healthcare technologies.

Mental health and psychological well-being constituted an important area of research. Badillo-Sánchez et al. (2025) examined the psychological impact of the COVID-19 pandemic on nursing students through a systematic review and meta-analysis. Koçak et al. (2025) investigated the relationship between social network addiction, online gaming addiction, loneliness, and suicidal ideation, contributing to research on emerging mental health challenges in digital environments.

Research on **disease prevention and non-communicable diseases** included a study by Azadi et al. (2025), which examined the effectiveness of an educational intervention in promoting breast cancer prevention behaviours among women. Amilo et al. (2025) explored the integration of machine learning and mathematical modelling to assess diabetes risk in women.

The University's research contributions also extended to **cancer treatment and medical diagnostics**. Naik et al. (2025) investigated mathematical approaches to modelling cancer treatment through radiotherapy, while Mehmood et al. (2025) explored deep learning techniques for improved classification of leukocytes in bone marrow cytology.

In the field of **infectious diseases**, Ramzan et al. (2025) developed a mathematical model examining gonorrhea and HIV coinfection, with particular attention to disease transmission and associated health risks.

Together, these publications demonstrate Khazar University's engagement in international scientific collaboration and interdisciplinary research addressing significant public health challenges. They contribute to scientific knowledge relevant to disease prevention, mental well-being, diagnostic innovation, and the development of evidence-informed healthcare approaches.

Selected Research Publications (2025)

1. **Badillo-Sánchez et al. (2025).** *Impact of the COVID-19 pandemic on the mental health of Nursing students: A systematic review and meta-analysis.* Medicine. DOI
2. **Koçak et al. (2025).** *The relationship between social network addiction, online gaming addiction, and suicide ideation: mediating and moderating role of loneliness.* BMC Psychology. DOI
3. **Azadi et al. (2025).** *Effects of an Educational Health Belief Model Program on Promoting Preventive Behaviors for Breast Cancer Among Women in Iran.* Journal of Patient Experience. DOI
4. **Amilo et al. (2025).** *An integrated machine learning and fractional calculus approach to predicting diabetes risk in women.* Healthcare Analytics. DOI
5. **Naik et al. (2025).** *Modeling and computational study of cancer treatment with radiotherapy using real data.* PLOS ONE. DOI
6. **Mehmood et al. (2025).** *Improved leukocyte classification in bone marrow cytology using convolutional neural network with contrast enhancement.* Scientific Reports. DOI

7. **Ramzan et al. (2025).** *Modeling gonorrhea and HIV coinfection with predictive analytics for disability and mortality risks*. Scientific Reports. DOI

In 2025, Psychology Department researchers presented findings on 204 first-year students at an international congress, examining psychological symptoms during the transition to university. Findings from research involving the same number of students were also published in Azərbaycan Məktəbi (Issue 1, 2025).

Research in other areas included the International Work Addiction Scale study on occupational well-being, with 31,352 employees from 85 cultures, and presentations on bioactive compounds and biomedical materials at the International Pharmaceutical Sciences Congress in May 2025. Together, these studies and scientific exchanges supported the University's work on psychological well-being and health-related innovation.





3.2 Number graduating in health professions

Khazar University provides education in psychology and related fields that can support future roles in mental-health services and research. Its Clinical Psychology and General Psychology postgraduate teaching was strengthened in 2025 through Erasmus seminars with Akdeniz University academics on grief, positive discipline and parenting. The University also expanded veterinary education and practical learning through its cooperation with Hasvet. These activities support professional preparation but are not presented as a count of graduates in health professions.



3.3 Collaborations and health services



The University's Health Care Center provides free primary medical support, first aid and access to health information for students, faculty and staff. Its guidance also includes prevention, family planning and reproductive health. The Psychological Counseling and Psychotherapy Center offers psychological support, while the University's Health and Well-being Policy describes support for student and staff well-being. These are ongoing institutional services rather than programmes first created in 2025.

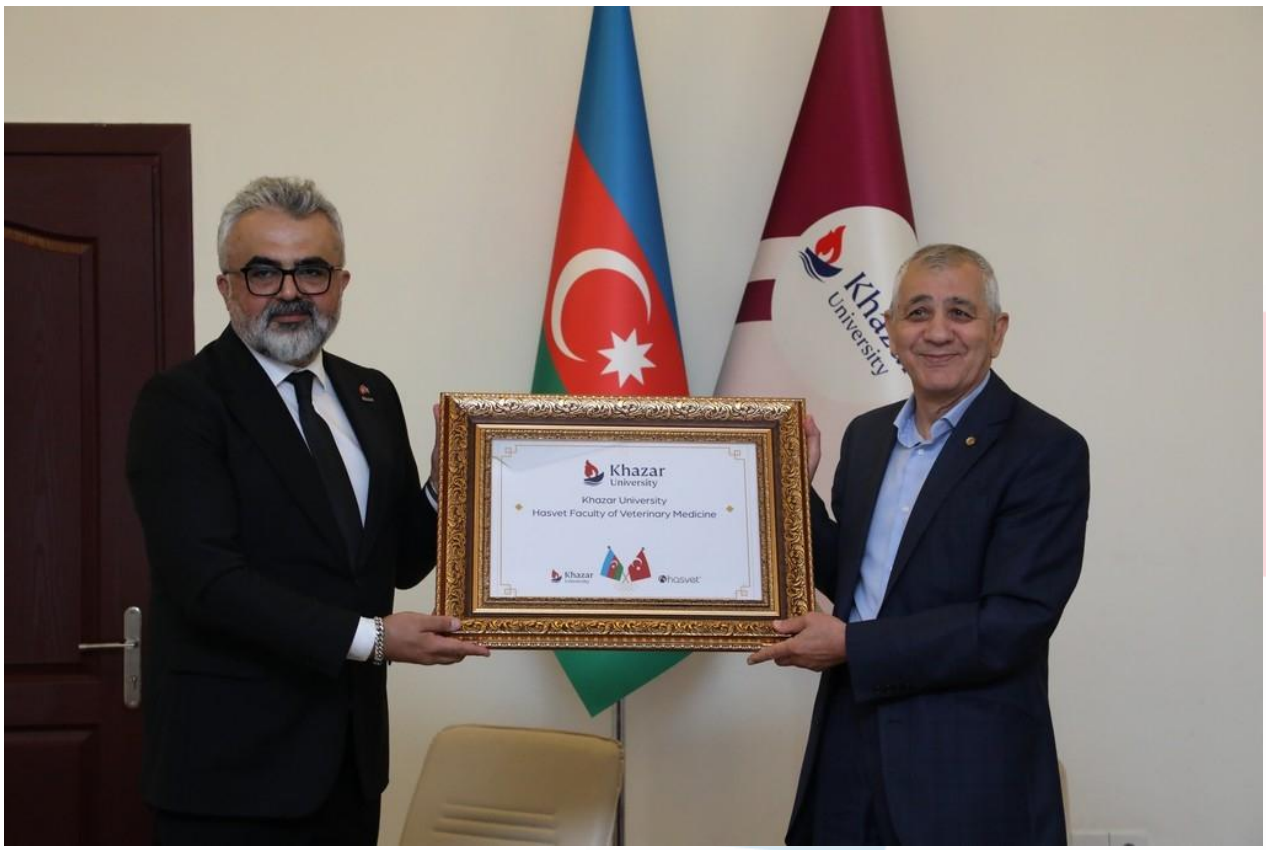
Health education and emergency preparedness remained active throughout the year. A civil defence activity in February introduced practical first-aid techniques, and a March seminar explored psychological support in emergencies. On 30 October 2025, a joint first-aid training with the Association of Private Medical Institutions and Medic School covered cardiac arrest, choking, bleeding, burns and other emergency responses. Participants received training certificates.



Khazar University also supported preventive health education beyond campus. At a Baku Youth Center seminar on 7 October, a University psychologist discussed the health and psychological risks associated with early marriage. In December, awareness sessions on substance use were conducted with public institutions, including activities at Secondary School No. 138 and Secondary School No. 42. The University also held a drug-prevention and early-marriage awareness event on campus on 4 December.



Scientific and professional partnerships contributed to the wider health agenda. On 1 May 2025, Khazar University signed a cooperation agreement with Hasvet covering veterinary education, clinical practice and research. Its School of Veterinary Medicine Hospital opened on 7 July, strengthening animal-health education and clinical infrastructure. These developments are part of the One Health approach and are distinct from human clinical care.



The University hosted the 4th International Conference on One Health: Problems and Solutions on 28–29 November 2025 with national and international health and research partners. More than 70 researchers from seven countries contributed 24 presentations on public health, food security, disease prevention and environmental challenges. The event encouraged cooperation across human, animal and environmental health.



Selected Activities in 2025

2025	ACTIVITY
2–3 Feb	Study on first-year psychological symptoms presented internationally
28 Feb / 3 Mar	Civil defence first aid and psychological assistance seminars
25–26 Apr	9th Azerbaijan International Psychology Conference
1 May	Hasvet veterinary education and clinical research cooperation
14 May	Pharmaceutical and biomedical research congress
7 Jul	Hasvet School of Veterinary Medicine Hospital opening
7 Oct	Community seminar on health effects of early marriage
30 Oct	First aid training with medical-sector partners
17–21 Nov	Erasmus psychology teaching and clinical practice seminars
28–29 Nov	4th International One Health Conference
4 / 16 / 24 Dec	Drug-prevention awareness on campus and in Baku schools

2025 Overview

In 2025, Khazar University maintained access to medical and psychological services, produced health-related research, organised practical health education and worked with public and private partners on prevention and professional learning. Its activities on campus and in the wider community supported awareness of mental health, first aid, addiction prevention and the One Health approach.

2025 / ANNUAL SUSTAINABILITY REPORT

SDG 4 | Quality Education

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University supports inclusive, high-quality education not only through formal degree programmes but also through educational research, teacher preparation, public learning resources, professional development and community outreach. The University's 2025 activities connected its teaching expertise with school teachers, research professionals, other universities, schools and youth services. Standing institutional policies on open access and non-discrimination provide a framework for these activities.

Nearly 30 Teachers joined the Teacher development programme in January	**8 azerbaijani universities** Participated in DIRNA network training	**4 main activities** Documented education outreach beyond campus

4.1 Research on early years and lifelong learning education

In 2025, Khazar University continued to advance educational research through international scientific collaboration and interdisciplinary scholarship. University-affiliated researchers contributed to **14 final-status Scopus-indexed research articles classified under SDG 4 (Quality Education)**, addressing educational innovation, digital learning, inclusive education, teaching effectiveness, student development, and educational well-being. These research contributions reflect the University's engagement with contemporary challenges in improving educational quality, accessibility, and learning experiences across diverse educational settings.

Digital transformation and technology-enhanced learning represented a significant area of research. Imran et al. (2025) examined teachers' experiences with digital learning following the COVID-19 pandemic, exploring how educational technologies have influenced teaching practices and professional adaptation. Khatami et al. (2025) investigated mindfulness and student engagement in online English language learning, contributing to research on learners' psychological and educational experiences in digital environments. In another international collaborative study, Bashir et al. (2025), including a Khazar University-affiliated researcher, examined the influence of computer-assisted language learning (CALL) and multimodal pedagogy on learner motivation and willingness to communicate in English. Together, these studies contribute knowledge relevant to more engaging and responsive digital learning environments.

Inclusive education, critical thinking, and student learning also featured prominently in the University's research activities. Karadag et al. (2025) investigated the potential of virtual reality technologies to support motor skills development among children with special educational needs, drawing on expert perspectives from five countries. Shaber et al. (2025) explored the relationship between critical thinking and creativity among university students, while Gharib et al. (2025) applied mathematical modelling to examine educational outcomes and pandemic-related challenges in secondary and high school mathematics education. Dogar et al. (2025) further contributed to literacy research through an investigation of oral reading fluency among learners of English as a second language.

Research addressing **teacher effectiveness and professional well-being** provided additional insights into educational quality. Dilekçi et al. (2025) examined the relationship between teachers' positive instructional emotions, work engagement, and job performance. Mirzapour et al. (2025) explored teachers' well-being in digital educational environments, considering the opportunities and challenges associated with technology-supported teaching. These studies highlight the importance of educators' professional experiences and well-being in supporting effective teaching practices.

Alongside internationally indexed research, Khazar University contributed to scholarship addressing **national educational development and teaching methodology**. Sevinj Qambarova's 2025 study, *Organization and Characteristics of Essay Writing*, published in *Azerbaijani Language and Literature Teaching* (Volume 71, Issue 2), examined the organisation of essay-writing activities and their relevance to developing schoolchildren's written expression, critical thinking, and creativity. Another study, co-authored by Telman Nusratoglu of Khazar University and Mehdi Ganjali of Marmara University, was published in *Milli Eğitim* (Issue 245, 2025). Drawing on Azerbaijani and Turkish archival sources, the article examined the historical development of teacher education in Azerbaijan, with particular attention to the educational contributions of Muallim Cevdet in early twentieth-century Baku.

Together, these publications demonstrate Khazar University's contribution to educational research at both national and international levels. By addressing digital transformation, inclusive teaching practices, student competencies, teacher development, and the historical foundations of education, the University contributes scientific knowledge relevant to improving educational quality and supporting lifelong learning.

Selected Research Publications (2025)

Scopus-indexed research

1. **Imran, M., Almusharraf, N., & Abbasova, M. Y. (2025).** *Digital learning transformation: A study of teachers' post-Covid-19 experiences.* Social Sciences & Humanities Open. DOI
2. **Karadag, E., et al. (2025).** *Exploring the potential of virtual reality for motor skills training in children with special educational needs: Perspectives from experts from five countries.* Education and Information Technologies. DOI
3. **Shaber, N., Shah, S. K., Imran, M., & Almusharraf, N. (2025).** *Exploring the Relationship Between Critical Thinking and Creativity in University Students: Gender Differences and the Assessment of Skills.* Education Sciences. DOI
4. **Gharib, S. I., Kaymakamzade, B., Karahan, A., & Tezer, M. (2025).** *Mathematical Modeling Approach to Assessing Math Education Levels in Secondary and High Schools: Pandemic Impact and Post-Pandemic Projections.* Systems. DOI
5. **Khatami, M., et al. (2025).** *Exploring Bangladeshi English as a foreign language learners' mindfulness and engagement in the online learning context.* Acta Psychologica. DOI
6. **Dilekçi, Ü., et al. (2025).** *The association between teachers' positive instructional emotions and job performance: Work engagement as a mediator.* Acta Psychologica. DOI
7. **Dogar, M. F., Shah, S. K., Imran, M., & Almusharraf, N. (2025).** *Evaluating oral reading fluency in English as a Second Language: A quantitative analysis.* Reading & Writing. DOI
8. **Mirzapour, F., Şengül, M., & Curle, S. (2025).** *The tone of teachers' melody and wellbeing in digital space.* Frontiers in Education. DOI

Additional educational research

9. **Bashir, A., Aziz, A., Imran, M., & Almusharraf, N. (2025).** *Effect of CALL-based multimodal pedagogy on learner motivation and willingness to communicate in English: A study from university students' perspective.* Contemporary Educational Technology, 17(2), ep568. DOI
10. **Qambarova, S. (2025).** *Organization and Characteristics of Essay Writing.* Azerbaijani Language and Literature Teaching, 71(2). University Publication News
11. **Nusratoglu, T., & Ganjali, M. (2025).** *An Ottoman in Baku: Muallim Cevdet's Activities in the Society for the Spread of Education and His Role in Azerbaijan's Educational Life.* Milli Eğitim, Issue 245. Publication

1. **Khatami, M., et al. (2025).** *Exploring Bangladeshi English as a foreign language learners' mindfulness and engagement in the online learning context.* Acta Psychologica. DOI
2. **Dilekçi, Ü., et al. (2025).** *The association between teachers' positive instructional emotions and job performance: Work engagement as a mediator.* Acta Psychologica. DOI
3. **Dogar, M. F., Shah, S. K., Imran, M., & Almusharraf, N. (2025).** *Evaluating oral reading fluency in English as a Second Language: A quantitative analysis.* Reading & Writing. DOI
4. **Mirzapour, F., Şengül, M., & Curle, S. (2025).** *The tone of teachers' melody and wellbeing in digital space.* Frontiers in Education. DOI



4.2 Proportion of graduates with teaching qualification

Khazar offers degree pathways for the teaching profession, including the Elementary School Teaching bachelor's major. In 2025 the Department of English Language and Literature delivered Pre-Service Teacher Training (27–28 January) with Michael Collins, covering classroom management, teacher identity, lesson planning, classroom discussion and vocabulary instruction. The session was designed for Khazar's English Language Teaching students and is described here as part of teacher preparation, not an unrestricted public course.

The existence of teaching programmes and delivered training demonstrates educational provision; the relevant annual graduate statistic is a distinct measure requiring verified primary-school teaching qualifications and the overall number of 2025 graduates.

4.3 Lifelong learning measures

Khazar's Open Access webpage describes educational resources and designated learning facilities available free of charge to non-enrolled learners, independent researchers and visitors. At the Neftchilar Library and Information Center, the University identifies study areas, books, computers and headphones; other libraries describe reference materials, computers or Wi-Fi. The webpage also lists libraries associated with the Downtown and Buzovna locations and the Dunya Education Complex. Access conditions may differ by branch.

Digital access is supported by the Open Access Policy (revised September 2024), which encourages institutional archiving of scholarship where permitted by copyright. The University signposts its research repository and external open educational collections, including OAPEN, the Open Textbook Library and the World Bank Open Knowledge Repository. These links expand routes to learning; they should not be interpreted as a claim that all licensed digital collections, printed books or certificate courses are freely available to everyone.

The University advertised a range of educational events welcoming interested members of the public in 2025, including World Civil Defense Day (28 February), Duolingo versus TOEFL/IELTS (14 March), a neuroscience lecture series (3 December) and a rabies research seminar (19 December). Invitations provide evidence of intended public access, while delivery and actual external attendance require separate event records.

A completed Business and Science Forum on 27 February brought together researchers, entrepreneurs, business representatives and medical specialists. Although external attendance is documented, the announcement does not establish unrestricted admission. In a school setting, a 10 March session on AI, sustainability and green skills was publicly advertised at Dunya School; this invitation is distinguished from an on-campus event report.



Publicly accessible online learning opportunities also included a history and international relations seminar (20 February), research-oriented university models (28 May), curriculum and student agency (30 July), written feedback in second-language writing (15 December), and reservoir simulation methods (17 December). Unlike an invitation alone, a subsequent news report confirms delivery of the 12 December AI-in-Education seminar. These online events are identified separately from on-campus educational events.

On 21–22 January 2025, the University delivered Teacher Professional Development led by English Language Fellow Michael Collins. Its public announcement invited educators from beyond the University. Nearly 30 teachers attended, exploring



classroom management, differentiated instruction, classroom dialogue, constructive feedback, vocabulary teaching and supplementary learning materials. Two-day participants received certificates endorsed by the U.S. Embassy in Azerbaijan.

A second substantive two-day practical programme, Analysis of Molecular Marker Data: Genetic Diversity and Population Structure (22–23 December), was delivered by Professor Abolghasem Mohammadi of the University of Tabriz. The course combined conceptual teaching with hands-on demonstrations using Cervus, MEGA, GenAlEx and STRUCTURE. Attendance included researchers and students from other higher education institutions and specialised scientific institutes; the invitation welcomed interested participants.



Additional completed capacity-building included the Erasmus+ DIRNA network's inclusive-education and copyright/plagiarism training on 27 February, which engaged staff from eight Azerbaijani universities. The University also delivered a Web of Science training session on 16 April, while the Department of English Language and Literature records a September workshop on challenges in ESL/EFL teaching attended by more than 25 teachers. Some courses served staff or project-partner audiences; these are not automatically equivalent to unrestricted public enrolment.



In 2025, Khazar educators shared university expertise in four documented educational sessions outside its campuses, addressing learning strategies and the well-being of children and young people. These activities took place in schools and a youth centre, in some cases through events organised by partner institutions.

29 April — Kaspi Lyceum: Psychology Center Director Malak Karimova advised pupils on effective study techniques, time management and managing exam anxiety. Lecturer Ulvi Babasoy explained university study and educational opportunities. The educational guidance complemented the information provided to prospective students.



7 October — Baku Youth Center: Psychology Department specialist Mirsadiq Mukhtarov contributed to an early-marriage awareness seminar organised by IPSYSO Azerbaijan, addressing psychological, physiological and social consequences. The exchange included participants' questions and discussion.



16 December — Secondary School No. 138: At an event organised by the Baku City Main Police Department's preventive work unit, Mukhtarov explained substance-dependency risks, psychological impacts and prevention. Pupils, teachers and partner professionals participated.

24 December — Secondary School No. 42: At a separate school seminar organised by the police preventive work unit, Mukhtarov discussed substance-dependency prevention, family responsibilities and the educational environment with pupils and teachers.

Khazar's Equality, Diversity and Inclusion Policy was revised in January 2025 and applies to students, employees and visitors. It prohibits discrimination based on race or ethnic origin, religion or belief, gender, disability, socio-economic circumstances and nationality or citizenship status. The policy also addresses accessible learning materials, facilities, support services, and public events open to the wider community wherever possible.



Together with the Open Access Policy, these commitments provide an institutional basis for participation beyond enrolled students. The policies set expectations; actual accessibility arrangements and the operation of particular facilities or events depend on delivery and local conditions.

4.4 Proportion of first-generation students

A commitment to widening participation is reflected in the University's inclusive access and community-learning activities. First-generation participation is a specific enrolment measure distinct from scholarship availability or general first-time university entry. This report describes the policy framework without presenting an unverified 2025 first-generation enrolment percentage.

Selected Activities in 2025

2025	ACTIVITY
21–22 Jan	Teacher Professional Development
22 Jan	DIRNA AI for education/research webinar
27–28 Jan	Pre-service teacher-training session
27 Feb	DIRNA inclusive learning and research-integrity
27 Feb	Business and Science Forum
14 Mar	Language testing seminar
16 Apr	Web of Science training
29 Apr	Kaspi Lyceum study skills and exam-anxiety outreach
28 May	Research-oriented university models webinar
30 Jul	Curriculum and student agency webinar
11 Sep	English-teaching challenges workshop
7 Oct	Baku Youth Center early-marriage awareness
25 Nov	Corpus linguistics and AI research seminar
3 Dec	Neuroscience lecture series

12 Dec	AI in Education: Responsible Use
16 Dec	School No. 138 prevention seminar
22–23 Dec	Molecular-marker analytical training
24 Dec	School No. 42 prevention seminar

2025 Overview

During 2025, Khazar University combined teacher education, practical professional development, public-facing scholarly opportunities, cross-university training and community learning. The strongest documented results include completed multi-day training, classroom-focused teacher development and four separate educational contributions beyond campus. The University's access and inclusion policies support this engagement as part of a continuing institutional commitment to quality education.

2025 / ANNUAL SUSTAINABILITY REPORT

SDG 5 | Gender Equality

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University promotes gender equality through fair access to education, a respectful learning and working environment, opportunities for women's academic development, and public discussion of issues affecting women and girls. In 2025, the University revised its equality policies, expanded dialogue on women's leadership and inclusion, and continued research and educational activities focused on gender-related experiences.

2	**204**	**60+**
Equality policies revised in Jan 2025	Students in gender-based psychology research	Delegates at Women's Congress

5.1 Research on gender equality

In 2025, Khazar University continued to contribute to research addressing gender equality, gender-related social perceptions, women's professional opportunities, psychological well-being, and gender differences in health outcomes. University-affiliated researchers participated in international scientific publications examining the social, educational, linguistic, and psychological dimensions of gender, contributing to interdisciplinary knowledge relevant to SDG 5 (Gender Equality).

Gender stereotypes and equal professional opportunities represented important areas of scientific investigation. Alotaibi, Almusharraf, and Imran (2025), in their study *Why Some Jobs Just "Sound" Male: The Arabic Language Effect*, examined how linguistic structures and educational materials influence students' perceptions of professional and political roles. Drawing on responses from 62 elementary school students in Saudi Arabia, the study highlighted the influence of gendered language on occupational stereotypes and the importance of gender-inclusive educational content.

Research also addressed **gender disparities in professional development and career advancement**. Alotaibi et al. (2025), in *Trends and Gender Dynamics in Professional Certification Growth in Saudi Arabia*, analysed professional certification trends using publicly available data. The study identified persistent differences between male and female participation, particularly in advanced professional qualifications, contributing evidence relevant to understanding gender inequalities in access to professional development opportunities.

Gender identity and psychological well-being constituted another area of research. In August 2025, Alotaibi, Almusharraf, and Imran published *Examining the Linguistic and Behavioural Patterns of Gender Identity in Women with Dissociative Identity Disorder* in *Humanities and Social Sciences Communications*. The research investigated relationships between psychological gender identity and linguistic behaviour, examining speech patterns in publicly available interviews involving six women diagnosed with dissociative identity disorder.

At the institutional level, Khazar University's Psychology Department contributed research examining **gender differences in students' psychological adjustment to university life**. In February 2025, Malak Karimova and Mirsadiq Mukhtarov presented findings from a study involving 204 first-year university students at the 9th International Marmara Scientific Research and Innovation Congress. The gender-based analysis identified higher levels of reported psychological symptoms among female students, highlighting differences in adjustment experiences during the transition to higher education. Research based on the same student sample was also published in *Azərbaycan Məktəbi* (Issue 1, 2025), contributing to academic discussion on student mental health and psychological support.

Further interdisciplinary research explored gender-related differences in healthcare. Montazeri et al. (2025) examined blood coagulation monitoring among 139 patients with mechanical heart valves, including 84 women. The study reported sex-related differences in anticoagulation control, offering evidence relevant to understanding variations in healthcare experiences and outcomes.

Together, these research contributions reflect Khazar University's engagement in gender-related scholarship across education, social sciences, psychology, and healthcare. Through international scientific collaboration and locally relevant research, the University contributes to the evidence base for understanding gender disparities, challenging occupational stereotypes, and promoting greater awareness of women's well-being and opportunities.

Selected Research Publications (2025)

Scopus-indexed research

1. **Alotaibi, T., Almusharraf, N., & Imran, M. (2025).** *Why some jobs just 'sound' male: the Arabic language effect.* Cogent Education, 12(1), Article 2530160. DOI
2. **Alotaibi, T., Almusharraf, N., Imran, M., & Gamage, K. A. A. (2025).** *Trends and Gender Dynamics in Professional Certification Growth in Saudi Arabia.* Societies, 15(2), 28. DOI
3. **Montazeri, N., Pourmehr, S., Ziapour, A., & Moghadam, R. H. (2025).** *Blood coagulation monitoring of patients with mechanical heart valve visiting Imam.* Journal of Cardiothoracic Surgery, 20, Article 68. DOI

Additional gender-related research

4. **Alotaibi, T., Almusharraf, N., & Imran, M. (2025).** *Examining the linguistic and behavioural patterns of gender identity in women with dissociative identity disorder.* Humanities and Social Sciences Communications, 12, Article 1303. DOI
5. **Karimova, M., & Mukhtarov, M. (2025).** *Research on psychological symptoms among first-year university students.* Azərbaycan Məktəbi, Issue 1, 2025. University Publication News · Conference Presentation

5.2 Proportion of first-generation female students

Khazar University's Equality, Diversity and Inclusion Policy, revised in January 2025, supports fair access to higher education regardless of gender or socioeconomic background. Its principles apply to admission and participation across the University. The policy provides a framework for considering barriers that may affect prospective students, including women from families with limited experience of higher education.

5.3 Student access measures

The University's approach to student access brings together equal-opportunity commitments and scholarship information. The Equality, Diversity and Inclusion Policy covers admissions, academic assessment and participation in university life, while the Anti-Discrimination and Anti-Harassment Policy sets out standards for fair treatment and protection from inappropriate conduct.

One education opportunity highlighted during the year was the Nailekhanim Foundation Scholarship. The 2024–2025 call accepted applications until 1 June 2025 for one full scholarship for an academically strong female applicant seeking a master's or doctoral degree, regardless of nationality. The published announcement described the application criteria and the role of women's leadership in the selection essay.

In October 2025, an online seminar within the DIRNA project, coordinated by Khazar University, brought partner institutions together to discuss gender equality, inclusive education and support systems. The exchange encouraged discussion of how educational environments can be more accessible and inclusive.



5.4 Proportion of senior female academics

Women held visible leadership positions at Khazar University during the reporting period. On 2 September 2025, the University's Scientific Council announced the appointment of Dr. Razia Isayeva as Rector, effective from 3 September 2025.



Women also chaired academic sessions during the International Turkish World Women's Congress held in October. These activities highlight women's participation in institutional leadership and scholarly exchange.



5.5 Proportion of women receiving degrees

Supporting women's academic progress is part of Khazar University's wider commitment to equal treatment in teaching, assessment and participation. Its equality policy applies across the educational experience, while gender-related teaching content, including the published Gender and Law course (LAW 542), encourages students to explore discrimination, rights and women's participation in society.

5.6 Women's progress measures

In January 2025, Khazar University reviewed both its Equality, Diversity and Inclusion Policy and Anti-Discrimination and Anti-Harassment Policy. Together, these documents describe fair treatment, prevention of discrimination and harassment, and processes for raising concerns. The anti-harassment policy allows affected individuals and witnesses to report concerns, including anonymously, through designated university offices. It also describes how complaints may be investigated and addressed.

The University supported wider discussion of women's leadership by hosting the II International Turkish World Women's Congress on 2–3 October 2025. More than 60 delegates joined discussions on women in science, academia, management, entrepreneurship and public life. The event brought together researchers, civic representatives and international partners.



Awareness-raising activities also addressed issues affecting girls and young women. On 7 October, a Khazar psychologist delivered a seminar on the effects of early marriage at the Baku Youth Center. On 4 December, the University hosted a preventive awareness event discussing early marriage and drug addiction with representatives of the Nizami District Police Department.

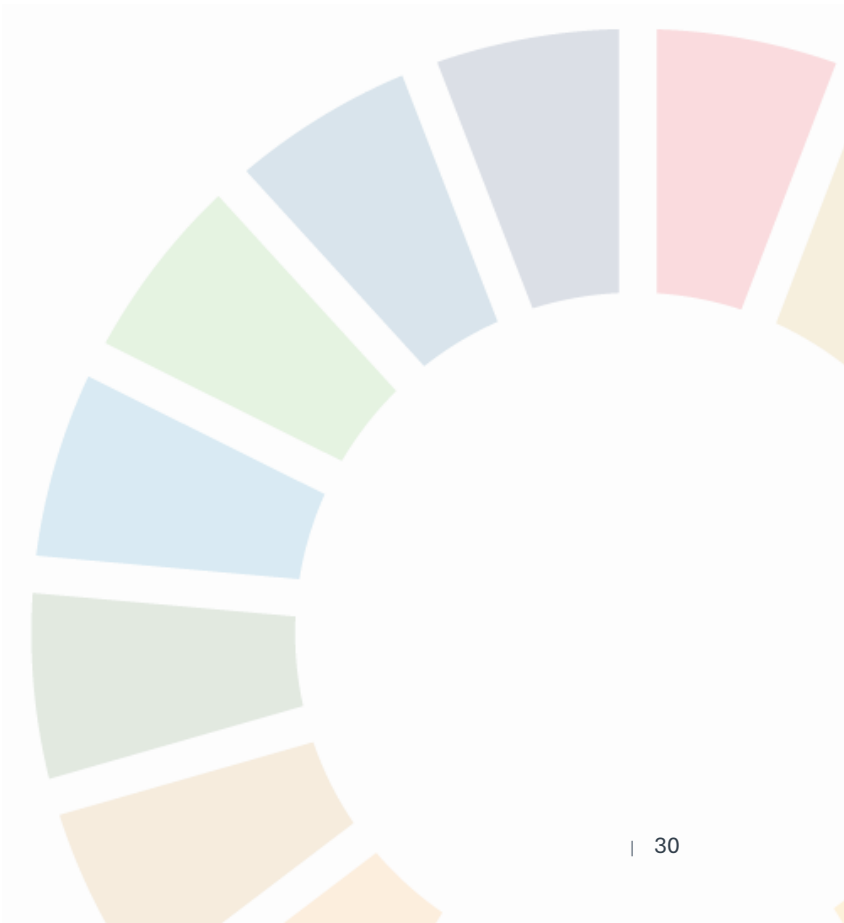
Selected Activities in 2025

2025	ACTIVITY
Jan	Equality and anti-harassment policies revised

2–3 Feb	Gender-focused student research presented
3 Sep	Female Rector appointment effective
2–3 Oct	II International Turkish World Women's Congress
4 Dec	Awareness event on early marriage

2025 Overview

Throughout 2025, Khazar University maintained institution-wide equality protections, communicated educational opportunities for women, contributed research on gender-related issues and brought partners together to discuss women's leadership and inclusion. Its policy framework, academic work and public events supported an environment in which women can take part in university life and wider social dialogue.



2025 / ANNUAL SUSTAINABILITY REPORT

SDG 6 | Clean Water and Sanitation

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University supports clean water and responsible resource use through campus environmental policies, water-related teaching, scientific research and international cooperation. In 2025, the University established a specialist water research centre, contributed to studies of river water quality and aquatic pollution, and hosted or joined discussions on water security. Existing campus facilities and policies provide a foundation for these activities.

1	**6**	**3**
Water research centre established in 2025	Sampling locations in the Kura River study	Water-focused events and exchanges in 2025

6.1 Research on water

In 2025, Khazar University continued to advance research addressing water quality, freshwater ecosystems, water resource management, and sustainable water technologies. University-affiliated researchers contributed to **46 Scopus-indexed publications associated with SDG 6 (Clean Water and Sanitation), comprising 39 research articles and seven review papers**. These publications reflect interdisciplinary research in water treatment, pollution monitoring, hydrological modelling, sustainable irrigation, and aquatic ecosystem protection.

Water quality and aquatic ecosystem health represented important areas of scientific investigation. Yolchuyeva, Hajiyeva, and Huseynli (2025) examined the physicochemical characteristics of drinking water from six sampling locations along Azerbaijan's Kura River, assessing indicators relevant to water quality monitoring. Research involving Khazar University academic Rovshan Abbasov also investigated the chronic toxicity of diflubenzuron in *Daphnia magna*, a freshwater organism used in aquatic ecotoxicology. Additionally, Mamedova and Karanis (2025) published a comprehensive review of coccidian parasites in freshwater fish, contributing knowledge relevant to aquatic biodiversity, fish health, and freshwater ecosystem monitoring.

Research on **water pollution and sustainable treatment technologies** examined innovative methods for improving water purification and wastewater management. Vatanpour et al. (2025) investigated advanced reverse-osmosis membranes designed to improve water permeability, resistance to fouling, and treatment performance. Hassan et al. (2025) reviewed electrochemical and microbial approaches to the degradation of persistent per- and polyfluoroalkyl substances (PFAS), while Castellanos et al. (2025) examined the potential of nanocellulose-based materials for removing heavy metals and other contaminants from wastewater.

Water security and data-driven resource management also featured prominently in the University's research. Morchid et al. (2025) investigated smart irrigation systems integrating embedded technologies and machine learning to support more efficient agricultural water use. Abdi et al. (2025) applied hybrid quantum neural networks to hydrological forecasting at Mile Mughan Dam on the Aras River, contributing to research on reservoir inflow prediction and water resource planning.

A significant institutional development was the establishment of the Water Sciences and Hydroinformatics Research Center on **3 November 2025**. The Center provides a dedicated framework for interdisciplinary research in hydrology, hydroinformatics, water security, irrigation, water quality, drought and flood analysis, and data-driven water resource management.

Together, these research contributions demonstrate Khazar University's engagement in addressing water-related environmental and technological challenges. Through international scientific collaboration, locally relevant research, and institutional capacity development, the University contributes knowledge supporting sustainable water management, freshwater ecosystem protection, and improved water security.

Selected Research Publications (2025)

Scopus-indexed research

1. **Mamedova, S., & Karanis, P. (2025).** *Coccidia (Apicomplexa: Eucoccidiorida) of Freshwater Fish*. Microorganisms, 13(2), 347. DOI

2. **Vatanpour, V., Al-Shaeli, M., & Behroozi, A. H. (2025).** *Enhancing the antifouling properties and permeability of polyamide TFC RO membranes via Ag_3PO_4 nanoparticle incorporation.* Desalination, 615, 119272. DOI

3. **Hassan, M., et al. (2025).** *Electro-microbial destruction of 'forever chemicals': Recent advances and imminent challenges.* Chemical Engineering Journal, 521, 166499. DOI

4. **Castellanos, H. G., et al. (2025).** *The efficacy of nano-cellulose-based composites in heavy metal removal from wastewater: A comprehensive review.* Journal of Chemical Technology and Biotechnology, 100(2), 291–312. DOI

5. **Morchid, A., et al. (2025).** *An Innovative Smart Irrigation Using Embedded and Regression-Based Machine Learning Technologies for Improving Water Security and Sustainability.* IEEE Access, 13, 100731–100751. DOI

6. **Abdi, E., Sattari, M. T., Samadianfard, S., & Ahmad, S. (2025).** *Advancing Hydrological Prediction with Hybrid Quantum Neural Networks: A Comparative Study for Mile Mughan Dam.* Water, 17(24), 3592. DOI

Additional water-related research

7. **Yolchuyeva, F., Hajiyeva, S., & Huseynli, A. (2025).** *Analysis of Physico-Chemical Parameters of Drinking Water from Kur River, Azerbaijan.* Khazar Journal of Science and Technology, 9(1), 5–14. DOI

8. **Karimova, G., et al. (2025).** *Cellular and individual toxicity of diflubenzuron for the chronic exposure in Daphnia magna: Focus on oxidative stress, chitin content, and reproductive outcomes.* Ecotoxicology. DOI

6.2 Water consumption per person

Khazar University's Environmental Policy encourages more efficient water use in toilets, cafés and gardens. At the Narimanov campus, the University has reported installing water-saving taps and toilet fittings. According to its published facilities description, these fixtures can use up to 60% less water than conventional equipment. The comparison describes equipment performance rather than the University's measured water consumption during 2025.

6.3 Water usage and care



Responsible water management includes infrastructure, sanitation and pollution prevention. The University has documented the connection of its Buzovna campus to a centralised wastewater network, replacing an earlier on-site discharge arrangement. Together with efficient sanitary fittings and environmental policies, this forms part of Khazar's approach to water stewardship on campus.

Teaching also supports awareness of water quality and protection. The Fall 2025 Water Resources Management syllabus covered integrated management, pollution sources, water quality, wastewater treatment and Azerbaijani water legislation. These topics connect sustainable water use with practical and regulatory knowledge.

6.4 Water reuse

The University's published climate-planning materials identify the use of treated greywater for irrigation, drip irrigation and other measures to reduce water demand as longer-term priorities. These proposals reflect an interest in using water resources more efficiently across campus landscapes and services.

6.5 Water in the community

In March 2025, Khazar researchers participated in the SORG4NOBAL international project's final meeting, which discussed nature-based solutions and strategies to reduce pesticide pollution and eutrophication in agricultural environments. On 25 March, Khazar academics contributed to a water-security workshop at Erasmus University Rotterdam addressing Azerbaijan and the Caspian Sea.



On 21 October 2025, the University hosted Finland's Ambassador Kirsti Narinen for a public academic talk on water diplomacy. The discussion addressed water-resource governance, international cooperation, climate-related pressures and fair access to natural resources.



These activities brought water security into educational and international dialogue.

Selected Activities in 2025

2025	ACTIVITY

11–12 Mar	SORG4NOBAL final project event
25 Mar	Erasmus Rotterdam water-security workshop
Fall 2025	Water Resources Management course syllabus
21 Oct	Finland's Water Diplomacy lecture
3 Nov	Water Sciences and Hydroinformatics Research Center

2025 Overview

In 2025, Khazar University strengthened its work on water research, water-related teaching and international knowledge exchange. A new research centre, published studies of water quality and aquatic ecosystems, and discussions with European partners added to the University's water-focused activities. Environmental policies and existing infrastructure continued to guide campus water conservation and sanitation.

2025 / ANNUAL SUSTAINABILITY REPORT

SDG 7 | Affordable and Clean Energy

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University supports the move towards affordable and clean energy through research, engineering education, campus efficiency planning and international cooperation. In 2025, researchers and students exchanged knowledge on renewable power, energy storage and smart electricity systems, while the University continued its longer-term work on responsible energy use.

2	3 days	1
Energy-related research articles published in 2025	Energy Seminars, 29 Apr–1 May	Erasmus+ 3E-Partnership consortium

7.1 Research on clean energy

In 2025, Khazar University contributed to **148 Scopus-indexed research articles and reviews related to SDG 7 (Affordable and Clean Energy)**, including 139 research articles and nine review papers. These publications addressed renewable energy development, energy efficiency, environmental sustainability, and technologies that support cleaner and more reliable energy systems.

Energy transition and sustainable energy policies

A major research direction focused on how countries can gradually move towards cleaner energy sources while maintaining economic stability.

In *Application of the Z-Information-Based Scenarios for Energy Transition Policy Development*, Nuriyev, Nuriyev, and Mammadov (2025) examined possible pathways for Azerbaijan's energy transition. The researchers developed scenarios to compare different combinations of traditional and renewable energy sources, including solar, wind, and hydropower. The study provides a framework for considering energy-policy decisions when future economic and technological conditions are uncertain.

Other research examined the relationship between clean energy and environmental sustainability. Kartal et al. (2025) investigated how clean energy consumption, economic activity, and productive capacity relate to environmental conditions in China. Another study by Kartal, Mukhtarov, and Hajiyeva (2025) explored how renewable and nuclear energy consumption interact in developed countries. These studies contribute to understanding the economic and environmental considerations involved in expanding clean energy use.

Solar and wind energy technologies

Khazar-affiliated researchers also contributed to studies exploring how renewable energy systems can operate more efficiently.

Saady et al. (2025) investigated ways to improve solar-powered water-pumping systems. Their research examined control technologies designed to make better use of available solar energy and improve pumping performance. Such systems are relevant to agricultural irrigation and water supply in locations where conventional electricity infrastructure may be limited.

Echiheb et al. (2025) studied control methods for wind turbines operating under changing wind conditions. The research examined approaches to improving turbine performance and maintaining stable operation, contributing to the development of more efficient wind energy technologies.

Integrated renewable energy and resource efficiency

Research also explored how a single renewable energy source could support several essential services.

Li et al. (2025) investigated a geothermal energy system capable of supporting electricity generation, heating, freshwater production, and hydrogen generation. The study used mathematical modelling to examine how these functions could be combined more efficiently.

Castillo et al. (2025) investigated approaches to evaluating supercapacitor technologies for renewable energy systems. These devices can store and release electrical energy quickly, making them relevant to energy storage and power-management applications.

Energy efficiency and sustainable industry

Reducing unnecessary energy consumption was another area of research.

Krishankumar et al. (2025) examined how manufacturers can evaluate investments in energy-efficient technologies. The study developed a decision-making approach to support the comparison of different investment options and their potential contribution to more sustainable industrial operations.

Further research by Kartal et al. (2025) explored how green finance, clean energy production, energy prices, and geopolitical risks relate to efforts to reduce carbon emissions across economic sectors.

Institutional research capacity

Khazar University's Energy Systems Research Center supports research in renewable energy, electricity networks, energy conversion, and energy management. The Center provides an institutional platform for interdisciplinary research and collaboration on energy-related challenges.

Overall, these research contributions demonstrate Khazar University's engagement in the scientific, technological, and economic aspects of sustainable energy development. By examining energy policy, renewable power generation, resource efficiency, and energy technologies, the University contributes knowledge relevant to improving energy systems and supporting the transition towards cleaner energy sources.

Selected Research Publications (2025)

1. **Nuriyev, M., Nuriyev, A., & Mammadov, J. (2025).** *Application of the Z-Information-Based Scenarios for Energy Transition Policy Development.* Energies, 18(6), 1437. DOI
2. **Kartal, M. T., et al. (2025).** *The effect of productive capacity changes, income, and clean energy on ecological sustainability in China by novel KRLS approach.* Scientific Reports, 15, 33642. DOI
3. **Kartal, M. T., Mukhtarov, S., & Hajiyeva, N. (2025).** *Investigation of displacement between main clean energy types: Evidence from leading developed countries through quantile approaches.* Renewable Energy, 238, 121988. DOI
4. **Kartal, M. T., et al. (2025).** *Efficiency of green bond, clean energy, oil price, and geopolitical risk on sectoral decarbonization: Evidence from the globe by daily data and marginal effect analysis.* Applied Energy, 392, 125963. DOI
5. **Saady, I., et al. (2025).** *Improving photovoltaic water pumping system performance with PSO-based MPPT and PSO-based direct torque control using real-time simulation.* Scientific Reports, 15, 16127. DOI
6. **Echiheb, F., et al. (2025).** *Experimental evaluation of an advanced predictive control technique for variable-speed wind turbine systems.* International Journal of Electrical Power & Energy Systems, 168, 110668. DOI
7. **Li, X., et al. (2025).** *Thermodynamic analysis and optimization of an optimized geothermal-driven quadruple-production system for sustainable power, heat, freshwater, and hydrogen production.* Renewable Energy, 245, 122847. DOI
8. **Castillo, O., et al. (2025).** *Assessing carbon-neutral supercapacitors in renewable energy systems with self-improving agent-based molecular fuzzy intelligent algorithms.* Scientific Reports, 15, 28234. DOI
9. **Krishankumar, R., et al. (2025).** *Analysis of energy efficiency investments in smart manufacturing via double hierarchy linguistic structure-based hybrid decision-making model.* Energy, 334, 137807. DOI

The Energy Systems Research Center brings together research on renewable energy, energy management, energy conversion and electricity networks. These activities strengthen the University’s contribution to academic discussion and applied energy research.

7.2 University measures towards affordable and clean energy

Khazar University’s Climate Action Plan sets out measures to reduce reliance on conventional energy and work towards net-zero emissions by 2050. Its energy goals include more efficient heating, lower natural-gas use, efficient lighting and equipment, and future solar installations. Several actions carry 2025 target dates within the plan.

The University also announced an energy-efficiency upgrade plan following an assessment of energy waste on campus. Proposed improvements cover LED lighting, insulation and heating, ventilation and air-conditioning systems. Together, the climate plan and the upgrade initiative outline practical steps towards more efficient university buildings.

7.3 Energy use density

Campus energy efficiency is addressed through the University's energy assessment and published plans for more efficient buildings. These activities provide a basis for tracking the energy used in University buildings and evaluating future improvements. The assessment and upgrade plans provide a starting point for evaluating energy use across University facilities and measuring improvements over time.

7.4 Energy and the community

In 2025, Khazar University shared clean-energy knowledge through teaching, seminars and international engagement. The Fall 2025 Renewable Energy course (CHE 490) covered solar and wind technologies and applied design work; the Electrical Power Systems course (ETR 535) addressed electricity networks and alternative energy systems.

From 29 April to 1 May, the Energy Seminars series brought together faculty, students and researchers to discuss renewable power, energy storage, AI-based energy control and smart grids. A seminar on piezoelectric energy harvesting on 7 November examined technologies for converting mechanical movement into electricity.



On 10 March, a seminar on "Harnessing AI to Advance Sustainability and Green Skills" at Dunya School explored the role of technology in sustainability.



Khazar also continued its participation in the Erasmus+ 3E-Partnership, supporting international work on energy-efficiency curricula and planned Energy Labs. Professor Ingilab Ahmadov attended the IEA EU4Energy Forum on Clean Energy

Storage in Copenhagen on 11–12 June.



Scientific exchanges with Fudan University and a December cooperation meeting expanded discussion of possible future work on energy technologies.





7.5 Low-carbon energy use

The University's climate planning identifies solar power and reduced dependence on conventional energy sources as long-term priorities. Research and training in 2025 also explored wind, solar, storage and other low-carbon technologies. These activities connect the University's long-term energy priorities with teaching and research into cleaner energy options.

Selected Activities in 2025

2025	ACTIVITY
10 Mar	AI, sustainability and green-skills seminar
14 Mar	Energy-transition policy research publication

29 Apr–1 May	Energy Seminars international series
11–12 Jun	IEA EU4Energy Forum on clean-energy storage
29 Sep	Research article on clean energy and ecological sustainability
7 Nov	Piezoelectric energy-harvesting seminar
8–18 Dec	Academic research exchange at Fudan University
23 Dec	Fudan University cooperation meeting and MoUs

2025 Overview

During 2025, Khazar University contributed to clean-energy research and education, convened technical discussions on emerging energy technologies, and participated in international partnerships. These documented activities complement its standing energy-efficiency and climate commitments, supporting continued work on lower-carbon energy systems and responsible campus operations.

SDG 8 | Decent work and economic growth

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University promotes decent work and sustainable economic growth through fair-employment commitments, career support, practical education and partnerships with employers. During 2025, the University revised workplace policies, connected students and graduates with professional opportunities, and encouraged cooperation between research, business and industry.

≈50	3	1
Organisations at Career Fair 2025	Policies revised in January 2025	Business–industry club introduced in 2025

8.1 Research on economic growth and employment

In 2025, Khazar University contributed to **37 Scopus-indexed research articles and reviews associated with SDG 8 (Decent Work and Economic Growth)**, comprising 34 research articles and three review papers. These publications addressed economic growth, employment opportunities, financial development, sustainable investment, labour-market challenges, and the relationship between environmental sustainability and economic development.

Economic growth and employment in Azerbaijan

An important research direction focused on the relationship between economic development and employment in Azerbaijan. In *Examining Economic Growth from the Agricultural Sector Perspective in Azerbaijan*, Huseynli and Durmuşkaya (2025) investigated the contribution of agriculture to economic growth, particularly the relationship between agricultural employment and economic performance. The study identified a significant relationship between agricultural employment and economic growth, providing evidence relevant to understanding the sector's role in Azerbaijan's economy.

Research also examined how economic development can be supported through diversification and sustainable energy policies. Nuriyev, Nuriyev, and Mammadov (2025), in *Application of the Z-Information-Based Scenarios for Energy Transition Policy Development*, explored different energy-transition pathways for Azerbaijan. Their study considered economic, technological, social, and environmental factors to help assess how traditional and renewable energy sources could be combined during the transition towards a more sustainable economy.

Employment opportunities and sustainable tourism

Khazar-affiliated researchers contributed to understanding the economic importance of tourism and its potential to support employment.

Huseynli (2025) examined South Africa's tourism sector, analysing the relationship between tourism revenues, employment, and business development. The research used economic data to investigate how tourism activity relates to job creation and wider economic opportunities.

Similarly, Baghirov and Sarkhanov (2025) investigated factors influencing tourism development in BRICS countries, contributing to research on the economic conditions that support tourism-sector growth.

Financial development and inclusive economic growth

Financial systems and their role in economic development constituted another important area of research.

Girma and Huseynov (2025) investigated the relationship between financial development and economic growth across 30 African countries. The study examined financial efficiency, liquidity, stability, and access to financial resources, demonstrating that different aspects of financial development can affect economic growth in different ways.

Research also addressed economic inequality associated with sustainable investment. Kalkavan et al. (2025) examined how renewable energy investments may create or increase economic inequalities, including through changes in land use and energy costs. The study proposed recommendations for reducing these risks while supporting sustainable development.

Green growth and sustainable economic transformation

The relationship between economic growth and environmental sustainability was also explored through international research.

Guliyev (2025) investigated the relationship between renewable energy consumption and economic growth in G7 countries. The study found that the economic effects of renewable energy differ across countries, highlighting the importance of considering national economic conditions when developing green-growth policies.

These findings complement research examining how sustainable investment, technological innovation, and environmental policies can support long-term economic development.

Skilled employment and workforce development

Research also examined factors influencing the movement and retention of skilled professionals.

Eti et al. (2025) investigated approaches to encouraging highly qualified professionals to return to their home countries. The study considered psychological factors, economic incentives, career opportunities, and expectations about the future, contributing knowledge relevant to workforce development and the retention of human capital.

Together, these publications demonstrate Khazar University's interdisciplinary engagement in research on economic growth, employment, financial systems, sustainable investment, and workforce development. Through research addressing both national and international economic challenges, the University contributes scientific knowledge relevant to inclusive and sustainable economic development.

Selected Research Publications (2025)

1. **Huseynli, N., & Durmuşkaya, S. (2025).** *Examining economic growth from the agricultural sector perspective in Azerbaijan*. Bulgarian Journal of Agricultural Science, 31(3), 431–437. Journal Publication
2. **Nuriyev, M., Nuriyev, A., & Mammadov, J. (2025).** *Application of the Z-Information-Based Scenarios for Energy Transition Policy Development*. Energies, 18(6), 1437. DOI
3. **Huseynli, N. (2025).** *South Africa's Tourism Sector: Job Creation and Employment Analysis Using the Least Squares Method*. Finance: Theory and Practice, 29(3), 83–89. DOI
4. **Baghirov, A., & Sarkhanov, T. (2025).** *Investigation of the Factors Affecting Tourism Development: Panel Causality Analysis — The Case of BRICS Countries*. GeoJournal of Tourism and Geosites, 60(2spl), 1136–1146. DOI
5. **Girma, A. G., & Huseynov, F. (2025).** *Multidimensional analysis of finance-growth nexus in Africa: evidence from a panel ARDL model*. Journal of Economics and Finance, 49, 429–449. DOI
6. **Kalkavan, H., Yüksel, S., Eti, S., Dinçer, H., Mikhaylov, A., & Pinter, G. (2025).** *Strategy recommendations for minimizing economic inequalities increased by renewable energy investments regarding sustainable development*. Sustainable Energy Technologies and Assessments, 75, 104225. DOI
7. **Guliyev, H. (2025).** *Heterogeneous panel data model with sharp and smooth changes: Testing green growth hypothesis in G7 countries*. Innovation and Green Development, 4(3), 100245. DOI
8. **Eti, S., Yüksel, S., Dinçer, H., Çetinkaya, H., & Zaralioğlu, F. B. (2025).** *Integrating psychological factors into AI-supported decision-making for reverse brain drain policies: A human-centered computing approach*. Acta Psychologica, 260, 105728. DOI

8.2 Employment practice

Khazar University's Equality, Diversity and Inclusion Policy and Anti-Discrimination and Anti-Harassment Policy, both revised in January 2025, set out expectations for equal treatment in recruitment, employment, promotion and university life. They also describe routes for reporting harassment and discrimination.

The University's Human Rights, Modern Slavery and Ethical Conduct Policy prohibits forced labour, human trafficking and exploitative employment or internships. The Sustainable Procurement Policy, revised in January 2025, promotes ethical sourcing, respect for labour rights and responsible supplier selection. Together these policies provide a framework for a fair and respectful working environment.

8.3 Expenditure per employee

As an employer and education provider, Khazar University contributes to the economy through its academic, administrative and service operations. The University's published ethical-employment and procurement policies guide how it works with employees, contractors and suppliers, linking day-to-day operations with responsible economic activity.

8.4 Proportion of students taking work placements

The Career and Alumni Center supports students and graduates with job and internship information, career advice, CV preparation, interviews and meetings with employers. On 11 April 2025, the Center met representatives of the State Employment Agency to discuss practical work experience and cooperation on youth employment.

The University's Career Fair 2025, held on 23 May at Neftchilar campus, brought together nearly 50 organisations. Participants could discuss vacancies and internships, submit CVs and meet recruiters.



Other 2025 activities included KPMG Azerbaijan's Audit – Career Day, a "Maarifchi" internship information session and career preparation for translation students. These activities expanded access to career information and practical opportunities.

University–industry dialogue also supported students' career development. The Business and Science Forum in February introduced the Khazar University Business Industry Club (KUBIC). Later, a meeting with PepsiCo explored graduate readiness, internships and employer expectations, while a SOFAZ seminar introduced students to sustainable economic development and public investment.





8.5 Proportion of employees on secure contracts

Stable and transparent employment arrangements are part of a responsible workplace. Khazar University's Human Rights, Modern Slavery and Ethical Conduct Policy calls for voluntary employment and transparent contracts and extends expectations of ethical conduct to partners and suppliers. This framework supports the University's broader commitment to decent working conditions.

Selected Activities in 2025

2025	ACTIVITY
27 Feb	Business and Science Forum; KUBIC introduced
11 Apr	Meeting with State Employment Agency representatives
16 Apr	KPMG Azerbaijan Audit – Career Day
17 Apr	“Maarifchi” internship programme information session
23 May	Career Fair 2025: nearly 50 organisations
10 Oct	Azad Mirzajanzade Development Programme session
13 Nov	Industry dialogue with PepsiCo talent teams
25 Nov	Translation career seminar and internship opportunity

2025 Overview

In 2025, Khazar University updated employment-related policies, brought students and graduates into contact with employers, introduced an industry cooperation platform, and strengthened understanding of economic development through research and education. These actions connect academic learning with professional opportunities and responsible organisational practices.

2025 / ANNUAL SUSTAINABILITY REPORT

SDG 9 | Industry, Innovation, Infrastructure

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University supports industry, innovation and infrastructure by connecting research with practical challenges, expanding digital research tools and encouraging students to develop new ideas. In 2025, the University strengthened cooperation with companies, supported technology competitions and shared new work in engineering, artificial intelligence and applied research.

1	**2nd**	**8**
Business-Industry Club launched in 2025	**AirVive at Clima Tech Hackathon**	**Azerbaijani partner universities in DIRNA**

9.1 Research on industry, innovation and infrastructure

In 2025, Khazar University contributed to **73 Scopus-indexed research articles and reviews associated with SDG 9 (Industry, Innovation and Infrastructure)**, comprising 60 research articles and 13 review papers. These publications addressed digital technologies, artificial intelligence, smart manufacturing, sustainable infrastructure, industrial efficiency, and environmentally responsible innovation.

Digital technologies and intelligent infrastructure

Digital innovation was an important area of research. Afrin et al. (2025), in *Industrial Internet of Things: Implementations, Challenges, and Potential Solutions Across Various Industries*, examined how connected sensors and intelligent monitoring systems can improve industrial operations. The study explored applications in manufacturing, construction, healthcare, agriculture, and energy systems, while identifying challenges related to cybersecurity, system compatibility, and data management.

Ahmed et al. (2025) investigated how cloud, fog, and edge computing can work together to improve Internet of Things (IoT) systems. Their research examined ways to process information more efficiently, reduce communication delays, and support the operation of intelligent devices across different environments.

Research by AzharShokoufeh et al. (2025) explored methods for improving data collection in IoT networks through federated learning and scheduled information exchange. The study examined how connected devices can share information more efficiently while reducing unnecessary data transmission and network demands.

In related digital research, Afzal et al. (2025), including a Khazar University-affiliated researcher, investigated multilingual semantic search using language models. Published in *Information*, the study assessed approaches to identifying relevant information across different languages, contributing to research on information retrieval and language technologies.

Smart manufacturing and industrial efficiency

Khazar-affiliated researchers also investigated how industries can improve productivity and make more sustainable investment decisions.

Krishankumar et al. (2025) examined energy-efficiency investments in smart manufacturing. The study developed a decision-making approach to help organisations compare investment options and identify factors affecting their effectiveness.

Liu et al. (2025) explored investment strategies combining smart manufacturing technologies with renewable energy efficiency. Their research used artificial intelligence-based decision models to examine how industrial investments can be evaluated against economic and sustainability considerations.

These studies contribute to understanding how technological innovation can support more efficient industrial processes and better-informed investment decisions.

Sustainable infrastructure and circular economy

Research also addressed the development of infrastructure that uses resources more responsibly.

Shahidi et al. (2025) investigated the use of granite-processing waste in producing cement-based artificial stone. The study examined the physical and mechanical properties of the resulting materials and assessed the environmental implications of reusing industrial waste. This research contributes to the development of alternative construction materials and more resource-efficient building practices.

Kou et al. (2025) explored how circular economy projects can be improved through advanced decision-support models. Their research examined factors such as waste management, energy efficiency, and investment planning, contributing knowledge relevant to reducing resource waste and improving industrial sustainability.

Ecer et al. (2025) investigated investment decisions for energy management in smart cities. The study examined how different investment priorities can be evaluated to support more efficient urban energy systems and sustainable infrastructure development.

Innovation and sustainable energy systems

Innovation research also extended to energy infrastructure and long-term technological development. Nuriyev, Nuriyev, and Mammadov (2025), in *Application of the Z-Information-Based Scenarios for Energy Transition Policy Development*, examined possible pathways for Azerbaijan's transition towards a more diversified energy system. The study considered how economic, technological, and environmental uncertainties can influence decisions involving traditional and renewable energy sources.

Together, these research contributions demonstrate Khazar University's engagement in the development of scientific knowledge relevant to industrial modernisation, digital transformation, sustainable infrastructure, and technological innovation. Through international research collaboration and interdisciplinary approaches, the University contributes to understanding how emerging technologies can support more resilient and resource-efficient economic systems.

Selected Research Publications (2025)

Scopus-indexed research associated with SDG 9

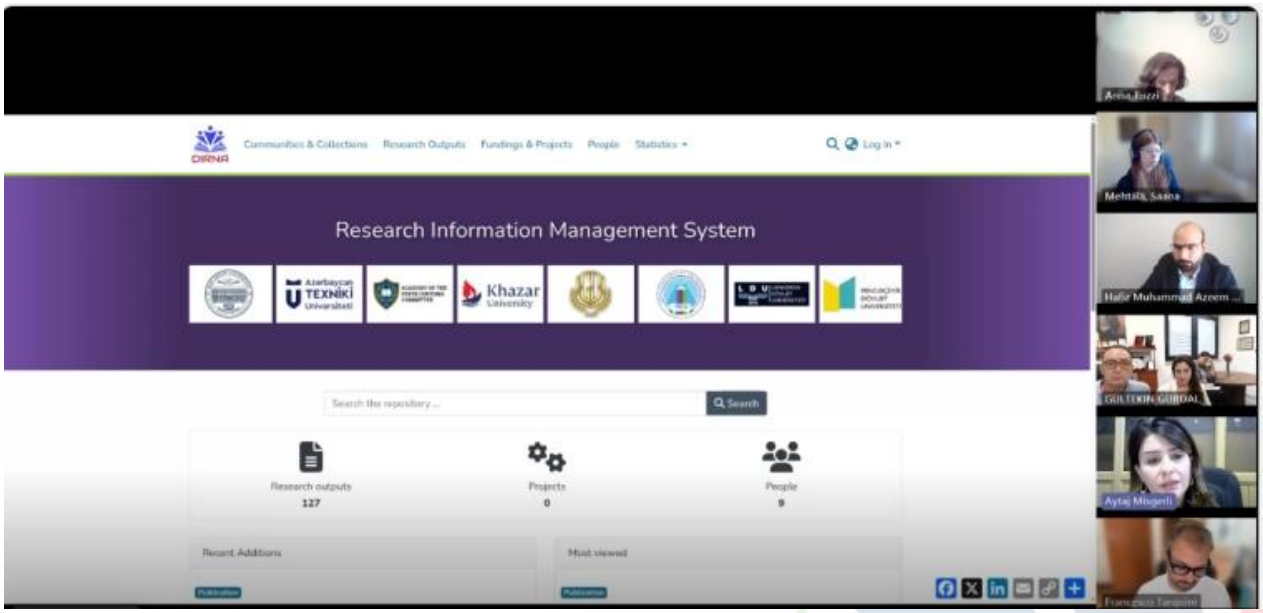
1. **Afrin, S., et al. (2025).** *Industrial Internet of Things: Implementations, challenges, and potential solutions across various industries.* Computers in Industry, 170, 104317. DOI
2. **Ahmed, S. F., et al. (2025).** *Optimising Internet of Things (IoT) Performance Through Cloud, Fog and Edge Computing Architecture*. IET Wireless Sensor Systems, 15(1), e70016. DOI
3. **AzharShokoufeh, D., DerakhshanFard, N., RashidJafari, F., & Ghaffari, A. (2025).** *Optimizing IoT data collection through federated learning and periodic scheduling.* Knowledge-Based Systems, 317, 113526. DOI
4. **Krishankumar, R., et al. (2025).** *Analysis of energy efficiency investments in smart manufacturing via double hierarchy linguistic structure-based hybrid decision-making model.* Energy, 334, 137807. DOI
5. **Liu, P., Dinçer, H., Yüksel, S., & Eti, S. (2025).** *Smart manufacturing investment strategies with renewable energy efficiency using Q-learning algorithm and molecular fuzzy Bayesian networks.* Applied Soft Computing, 185, 114007. DOI
6. **Shahidi, M. R., Reisi, M., Salahshour, S., & Baghaie, S. (2025).** *Using of granite waste as aggregates for production of high strength cement-based artificial stone.* Innovative Infrastructure Solutions, 10, Article 580. DOI
7. **Kou, G., et al. (2025).** *Enhancing circular economy project outcomes via molecular fuzzy-based decision support system.* Ain Shams Engineering Journal, 16(9), 103564. DOI
8. **Ecer, F., Saha, A., Dinçer, H., & Yüksel, S. (2025).** *Evaluating energy management investments for sustainable transition of smart cities through a new intuitionistic fuzzy consensus-based CoCoSo methodology.* Renewable Energy, 244, 122655. DOI

Additional related research

9. **Afzal, T., Abdul Rauf, S., Malik, M. G. A., & Imran, M. (2025).** *Fine-Tuning QurSim on Monolingual and Multilingual Models for Semantic Search.* Information, 16(2), 84. DOI
10. **Nuriyev, M., Nuriyev, A., & Mammadov, J. (2025).** *Application of the Z-Information-Based Scenarios for Energy Transition Policy Development.* Energies, 18(6), 1437. DOI



In September, DIRNA partners reviewed the RIMS platform and its research-management functions.



Khazar also presented a Technologies and Artificial Intelligence Center in May.



9.2 Patents citing university research

The University encourages technological work that may contribute to future industrial applications. In April 2025, the Department of Physics and Electronics held a doctoral research discussion on quantum-dot nanoparticles and photonic devices.





Technical knowledge exchange continued through the Energy Systems Research Center seminar series and industrial learning visits to FAB Group and SOCAR Polymer.

These activities connect scientific ideas with technologies and industry practice.

9.3 University spin offs

Khazar University worked to develop opportunities for entrepreneurship and student-led innovation. At the Business and Science Forum on 27 February 2025, the University introduced the Khazar University Business Industry Club (KUBIC). A follow-up meeting on 1 May brought students together with company representatives to discuss mentoring, startup acceleration and prospective project development.

Students also tested ideas through competitions and public demonstrations. The AirVive smart air-purification project won second place at the Clima Tech & Sustainability Hackathon, while GreenTech II participants from Khazar achieved third place in Digital Ecology. The BeeLance agricultural technology concept was exhibited at Rebuild Karabakh, and the SatWater team advanced to an incubation and acceleration pathway. These examples illustrate early-stage innovation and enterprise development.

9.4 Research income from industry and commerce

Connections with companies help create an environment for applied research and future collaboration. Through the 2025 Business and Science Forum and KUBIC business meeting, academic staff, students and business representatives discussed research applications, innovation needs and possible joint projects. Industry exposure was also strengthened through manufacturing visits to METAK and SOCAR Polymer.



Selected Activities in 2025

2025	ACTIVITY
10 Jan	DIRNA institutional repository demonstrated to university staff
8–9 Feb	AirVive student team won second place at sustainability hackathon
27 Feb	Business and Science Forum introduced KUBIC
17 Apr	GreenTech II award for Khazar engineering students
1 May	KUBIC met students and business representatives
30–31 May	Technologies and Artificial Intelligence Center presented
29 Sep	DIRNA partners reviewed the RIMS research platform
6–7 Dec	SatWater team reached National Space Hackathon final

2025 Overview

In 2025, Khazar University expanded opportunities for research collaboration, digital infrastructure, industry dialogue and student innovation. The introduction of KUBIC, DIRNA platform demonstrations, international academic partnerships and recognised student projects reflected an active approach to linking education, technology and industry.

SDG 10 | Reduced Inequalities

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University works to reduce inequality by improving access to education, supporting students with different needs and creating an inclusive learning environment. During 2025, this commitment was reflected in updated equality policies, disability-inclusive education activities, student support guidance and opportunities for international students to connect with the University community.

8
universities represented in the February DIRNA training

104
students in the April social-conditions survey

60+
countries represented by international students in May

10.1 Research on reduced inequalities

In 2025, Khazar University contributed to **seven Scopus-indexed research articles associated with SDG 10 (Reduced Inequalities)**. University-affiliated researchers explored issues relevant to economic inequality, educational development, inclusive growth, and access to opportunities. These contributions reflect the University's interdisciplinary engagement in understanding social and economic challenges that can affect different groups within society.

Economic inequality and sustainable development

An important research direction examined how environmental and economic investments can affect inequality.

Kalkavan et al. (2025), in *Strategy Recommendations for Minimizing Economic Inequalities Increased by Renewable Energy Investments Regarding Sustainable Development*, investigated how renewable energy projects may create economic disadvantages for certain communities. The study examined risks such as damage to agricultural land, environmental impacts, and rising energy costs. It proposed decision-making approaches to help identify and reduce these risks, contributing to research on making the transition to sustainable energy more socially equitable.

Educational opportunities and student development

Research also explored factors that can influence students' learning experiences and personal development.

Vazquez-Marin et al. (2025), including Khazar University-affiliated researcher Samantha Curle, examined the relationship between positive character strengths and educational competencies among 993 fifth- and sixth-grade students in Spain. Published in *Frontiers in Education*, the study investigated how qualities such as hope, gratitude, courage, and social responsibility relate to students' perceived competencies.

The researchers introduced the Positive Development and Assessment Competencies Theory (PDAC), offering a framework for understanding how personal strengths can support student development and well-being. The study contributes knowledge relevant to developing educational approaches that respond to students' broader learning and developmental needs.

Digital inclusion and equal opportunities

The relationship between technological development and inclusive growth formed another area of research.

Esen (2025), in *From Adopter to Innovator: Türkiye's Strategic AI Initiatives for National Security and Inclusive Growth*, examined Türkiye's development of artificial intelligence capabilities and their implications for economic growth, education, and national competitiveness.

The study considered the importance of human capital development, access to technological opportunities, and responsible data governance. It highlighted how policies supporting digital skills and broader participation in technological development can contribute to reducing the digital divide.

Research participation and knowledge exchange on educational inclusion

Alongside its scientific publications, Khazar University participated in activities supporting the collection of information on students' experiences and the exchange of knowledge on inclusive education.

On 7–8 April 2025, **104 Khazar University students**, including 96 undergraduate and eight graduate students, participated in a EUROSTUDENT-related survey. Conducted by the Center for Sociological Research at the request of Azerbaijan's Ministry of Science and Education, the survey gathered information on students' educational experiences, social circumstances, career expectations, and psychological well-being. The University's participation contributed student-level information to a broader initiative designed to support higher education analysis and policy discussions.

On 4–5 March 2025, Khazar University participated as a co-organiser in the First Republican Scientific Conference on Inclusive Education at Nakhchivan State University. University representatives presented research-informed perspectives on inclusive teaching, barriers faced by learners with disabilities, and international approaches to supporting their social integration.

Further knowledge exchange took place on 27 February 2025 through the Erasmus+ DIRNA project. A training session on inclusive education within institutional repository networks brought together representatives of eight Azerbaijani universities. Participants explored digital tools and accessible educational resources that can support more inclusive learning environments.

Together, these research publications and institutional activities demonstrate Khazar University's engagement in understanding economic inequalities, educational inclusion, and unequal access to opportunities. Through interdisciplinary research, international collaboration, and participation in educational initiatives, the University contributes knowledge relevant to reducing inequalities and supporting more inclusive development.

Selected Research Publications (2025)

1. **Kalkavan, H., Yüksel, S., Eti, S., Dinçer, H., Mikhaylov, A., & Pinter, G. (2025).** *Strategy recommendations for minimizing economic inequalities increased by renewable energy investments regarding sustainable development*. Sustainable Energy Technologies and Assessments, 75, 104225. DOI
2. **Vazquez-Marin, P., Curle, S., Gil Ortega, M. C., Medina-Gual, L., & Sandoval-Hernández, A. (2025).** *Harnessing virtues for educational success: introducing the Positive Development and Assessment Competencies Theory (PDAC)*. Frontiers in Education, 10, 1501130. DOI
3. **Esen, F. S. (2025).** *From Adopter to Innovator: Türkiye's Strategic AI Initiatives for National Security and Inclusive Growth*. Insight Turkey, 27(2), 173–198. DOI

10.2 First-generation students

Khazar University's Equal Opportunity Policy and Equality, Diversity and Inclusion Policy affirm non-discriminatory access to admission and learning opportunities. Its financial-aid framework offers support across several eligibility categories. In November 2025, an Education Student Loan Fund information session also explained study-financing options to first- and second-year students, helping them better understand available routes to financial support.

10.3 International students from developing countries

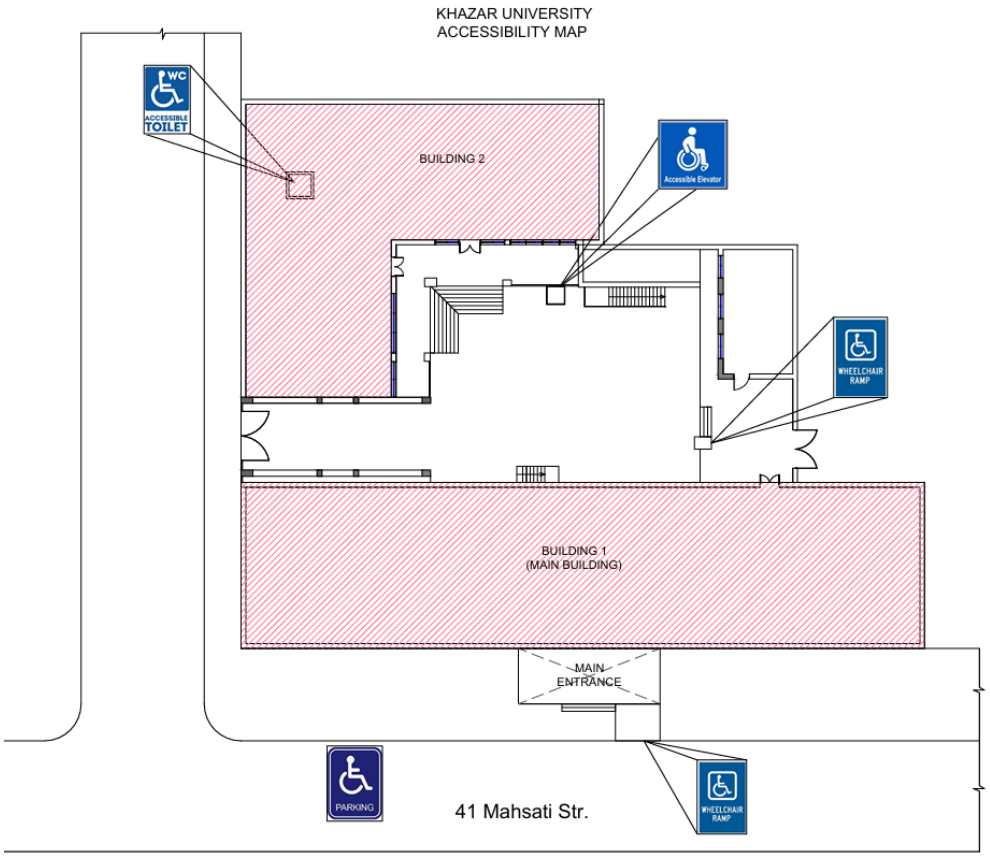
Khazar University participated as an eligible institution in Azerbaijan's 2025/26 Heydar Aliyev International Education Grant and Intergovernmental Scholarship Programmes. These were national selection programmes involving multiple universities. At Khazar, international students also received practical support through orientation sessions in October and a cultural integration visit to Guba in December. The University's 2025 Cultural Diversity Day highlighted a student community representing more than 60 countries.





10.4 Proportion of students with disabilities

Khazar University's Center for Students with Disabilities provides a structure for academic guidance, assistive support and individual adjustments. The Accommodation Policy for People with Disabilities and the published campus accessibility map describe the University's approach to accessible facilities and learning conditions. During 2025, students developed inclusive furniture concepts through the Supportive Design project, while DIRNA training introduced accessibility tools and inclusive teaching practices.



10.5 Proportion of employees with disabilities

Equal opportunity at Khazar University also applies to employment. The University's Equality, Diversity and Inclusion Policy covers fair recruitment and staff participation, while its Accommodation Policy provides a framework for adjustments for academic and administrative employees with disabilities. These policies form part of the University's broader commitment to an accessible working environment.

10.6 Measures against discrimination

In January 2025, Khazar University revised its Equality, Diversity and Inclusion Policy and Anti-Discrimination and Anti-Harassment Policy. These set out fair-treatment expectations and procedures for addressing concerns. The Ethics Committee is another institutional channel for reviewing ethical matters, while support services for underrepresented groups describe guidance, counselling and inclusion measures.

In 2025, this work was complemented by the Human Rights in Education seminar in May and an international DIRNA seminar on inclusive education in October. The latter brought Finnish partner expertise into discussions of student support, individual accommodations and the role of technology in accessible learning.

Selected Activities in 2025

2025	ACTIVITY
27 Feb	DIRNA training on inclusive education with eight Azerbaijani universities
4–5 Mar	National conference on inclusive education in Nakhchivan

7–8 Apr	EUROSTUDENT social-conditions survey with 104 Khazar students
10 Apr	Supportive Design accessible-furniture concepts presented
26 May	Cultural Diversity Day featuring international students
1 Oct	Orientation Day for new international students
27 Oct	DIRNA seminar on inclusive education and support systems
27 Nov	Student Loan Fund information session
7 Dec	Cultural integration visit for first-year international students

2025 Overview

Throughout 2025, Khazar University supported a more inclusive academic environment through policy updates, student guidance, accessibility-focused learning and intercultural events. Its efforts combined ongoing institutional support with dated training, public discussions and student participation activities.

SDG 11 | Sustainable cities and equalities

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University contributes to more sustainable cities and communities through urban-planning education, protection of cultural heritage, public knowledge resources and collaboration with regional and international partners. In 2025, its activities brought students and researchers together to explore sustainable design, historic places, creative arts and inclusive community life.

3	5	25–26 Sep
phases of the Sustainable City Project held in 2025	planning proposals presented at the first workshop	international architectural heritage conference

11.1 Research on sustainable cities and communities

In 2025, Khazar University-affiliated researchers contributed to scientific research relevant to **SDG 11 (Sustainable Cities and Communities)**. Their studies addressed sustainable urban transportation, air pollution, renewable energy integration, waste management, and smart-city development. These contributions reflect the University's interdisciplinary engagement in understanding the environmental, technological, and economic challenges associated with urban sustainability.

Sustainable urban mobility and transportation

An important research direction focused on improving urban transportation systems and understanding their environmental and economic implications.

Aliyev (2025), in *Evaluation of the Ecological and Economic Benefits Mobility Policy in Baku*, examined the potential benefits of sustainable mobility policies in Azerbaijan's capital. The study considered challenges associated with traffic congestion, air pollution, and energy consumption, highlighting the importance of public transportation, cycling, walking, and environmentally friendly vehicles.

The research discussed how sustainable mobility strategies can contribute to reducing emissions, improving urban air quality, and supporting economic efficiency through reduced transportation costs and travel delays.

Dinçer et al. (2025), in *Identifying Effective Risk Management Policies for Sustainable Urban Transportation Projects*, investigated financial and operational risks that can affect sustainable transportation investments. Using a fuzzy decision-making model, the researchers identified currency risk as a particularly important consideration, alongside operational and financing risks. The study contributed a decision-support approach for evaluating transportation projects and managing investment uncertainty.

Urban air quality and environmental monitoring

Research also addressed the role of advanced technologies in understanding and managing air pollution in urban environments.

Hani et al. (2025), including Khazar University-affiliated researcher Yashar Aryanfar, investigated the prediction of urban air pollutants using artificial neural network models.

Published in *Environmental Engineering and Management Journal*, the study analysed pollutant concentrations, including particulate matter (PM10), carbon monoxide, nitrogen dioxide, and ozone, using environmental and socioeconomic data from three major cities in Jordan.

The research explored how artificial intelligence-based prediction methods can support air quality monitoring and provide information relevant to environmental management and urban public health.

Renewable energy and sustainable smart cities

Another research direction examined the transition towards cleaner and more efficient energy systems in urban environments.

Ecer et al. (2025), in *Evaluating Energy Management Investments for Sustainable Transition of Smart Cities Through a New Intuitionistic Fuzzy Consensus-Based CoCoSo Methodology*, investigated how energy management investments can support sustainable urban development.

The study developed a decision-making framework for prioritising investment criteria and policy alternatives. Its findings highlighted the importance of risk assessment and public participation in supporting the sustainable transition of smart cities.

Kou et al. (2025), in *Addressing Hidden Challenges in Urban Renewable Energy Integration via a Hybrid-Decision Model*, explored legal and regulatory barriers affecting the integration of renewable energy into urban development. The researchers developed a hybrid decision-making model to evaluate these obstacles and identify potential strategies for addressing them.

The study emphasised the importance of financial incentives and more efficient regulatory procedures in facilitating renewable energy investments and supporting sustainable urban transformation.

Further research by Castellanos et al. (2025), in *Integrating Solar Energy in Urban Development: Strategies for Sustainable and Smart Cities*, reviewed approaches to incorporating solar energy into urban environments. Drawing on 120 research studies and urban implementation examples, the review examined the relationship between energy technologies, urban design, and policy instruments.

The researchers proposed an integrated framework linking regulatory measures, intelligent technologies, and urban characteristics such as building orientation, density, and shading. This work contributed to understanding how renewable energy systems can be incorporated into more sustainable urban planning.

Smart waste management and urban technologies

The application of emerging technologies to urban resource management formed another area of research.

Kou et al. (2025), in *Analyzing Blockchain-Based Waste Management Investments in Smart Cities Using Quantum Picture Fuzzy Rough Modelling*, investigated approaches to evaluating investment alternatives in blockchain-supported waste management systems.

The study combined artificial intelligence and multi-criteria decision-making methods to assess investment priorities under uncertainty. Its findings contributed a methodological framework for selecting waste management technologies that can support resource efficiency and sustainability in smart cities.

Research participation and knowledge exchange on sustainable urban development

Alongside scientific publications, Khazar University supported practical learning and international knowledge exchange on sustainable urban planning and environmental challenges.

From 30 May to 3 June 2025, Khazar University hosted the first phase of the Sustainable City Project, bringing together students, academic staff, planning specialists, and institutional partners from Azerbaijan and Türkiye. The multidisciplinary training focused on sustainable urban development and contemporary spatial-planning methods. Participants developed and presented **five planning projects**, combining theoretical learning with practical design activities.

The initiative continued through a second phase in October 2025, during which students worked on concepts for a selected area and a prospective university campus. A third phase, held on 12–16 November 2025 at Ankara Music and Fine Arts University, brought together 40 students from participating institutions to examine sustainable green spaces, campus planning, urban aesthetics, and the integration of art and nature.

On 30 April 2025, the Department of Architecture and Design, together with the SABAH Groups Project, organised a seminar on Environment and Urban Area Improvement. Professor Ebru Çubukçu from Dokuz Eylül University discussed sustainable development, the rehabilitation of urban spaces, and approaches to improving urban environmental quality.

Further scientific exchange took place during the SORG4NOBAL project's final meeting, held on 11–12 March 2025. Its second day, hosted at Khazar University, focused on Nature-Based Solutions and Sustainable Cities. The event brought together international researchers and institutional representatives to discuss environmental sustainability and nature-based approaches.

The University also contributed to urban climate education through a 240-minute instructional unit on Climate Change and Greenhouse Gas Reduction in Urban Environments, developed by Dr. Rovshan Abbasov and taught during the 2024–2025 academic year. The material addressed climate risks, mitigation, and adaptation in urban settings.

Together, these research publications and academic activities demonstrate Khazar University's engagement in addressing challenges associated with sustainable cities and communities. Through interdisciplinary research, international collaboration, and practical urban-planning education, the University contributes knowledge relevant to developing more environmentally sustainable, resilient, and liveable urban environments.

Selected Research Publications (2025)

1. **Aliyev, A. (2025).** *Evaluation of the ecological and economic benefits mobility policy in Baku.* Scientific Work, 19(9), 81–84. DOI
2. **Dinçer, H., Yüksel, S., & Eti, S. (2025).** Identifying effective risk management policies for sustainable urban transportation projects. In *Intelligent Urban Mobility: Decision Support Systems for Sustainable Transportation* (pp. 149–161). Elsevier. DOI
3. **Hani, E. B., Haj Assad, M. E., Aryanfar, Y., Hammoodi, K. A., Castellanos, H. G., Keçebaş, A., Ghasemlou, S. M., Alcaraz, J. L. G., & Bouabidi, A. (2025).** Predicting air pollutants in urban environments using artificial neural network models. *Environmental Engineering and Management Journal, 24*(8), 1657–1665. DOI
4. **Ecer, F., Saha, A., Dinçer, H., & Yüksel, S. (2025).** Evaluating energy management investments for sustainable transition of smart cities through a new intuitionistic fuzzy consensus-based CoCoSo methodology. *Renewable Energy, 244*, 122655. DOI
5. **Kou, G., Zavadskas, E. K., Ayata, A., Yüksel, S., Dinçer, H., & Eti, S. (2025).** Addressing hidden challenges in urban renewable energy integration via a hybrid-decision model. *Technological and Economic Development of Economy, 31*(6), 2023–2044. DOI
6. **Castellanos, H. G., Aryanfar, Y., Sadabad, A. N., & Keçebaş, A. (2025).** Integrating solar energy in urban development: Strategies for sustainable and smart cities. *International Transactions on Electrical Energy Systems, 2025*(1), 6096036. DOI
7. **Kou, G., Dinçer, H., Pamucar, D., Yüksel, S., & Simic, V. (2025).** Analyzing blockchain-based waste management investments in smart cities using quantum picture fuzzy rough modelling. *International Journal of Environmental Science and Technology, 22*(8), 6467–6490. DOI



Khazar University connects teaching and research with questions of climate resilience, urban design and sustainable infrastructure. The Sustainable City Project ran in three phases during 2025: a May–June workshop at Khazar University, a second training programme in October and a November programme at Ankara Music and Fine Arts University. Students from Azerbaijan and Türkiye developed design concepts for urban areas and university campuses, including five proposals presented at the first stage. The projects were educational design exercises rather than completed construction.

This work was supported by an April seminar on urban area improvement, a climate-change teaching unit on greenhouse-gas reduction in cities delivered during the 2024–25 academic year, and the SORG4NOBAL meeting on nature-based solutions and sustainable cities in March. These examples show academic engagement with urban sustainability without representing a complete inventory of indexed research outputs.

11.2 Support of arts and heritage



The University supports cultural learning and heritage preservation through academic events, historical-site visits, music, visual arts and publications. On 25–26 September 2025, Khazar co-organised the Architectural Heritage of the Turkic World conference, bringing together researchers and cultural partners to discuss historic architecture and urban identity. Staff and students also participated in the Preservation of Ancient Human Settlements conference, the Shusha heritage forum and a UNESCO-chair cultural

heritage meeting. Archaeological heritage was explored through a Gazakh seminar and faculty presentations in December.

Heritage was also part of student learning. Visits included Yanardag and historic castles around Baku, the Zargarpalan Bath, and the Shirvanshahs Palace and archaeology museum. A heritage and tourism session introduced international conservation principles; a House of Tolerance visit explored Albanian-Udi cultural traditions. These activities supported knowledge and appreciation of heritage, rather than university-led restoration projects.

Music and arts formed another part of the 2025 programme. The Khazar Chamber Orchestra performed at the Fikret Amirov Music Festival and accompanied performers at the Fidan Hajiyeva International Opera Festival. The Khazar Music Club concert and the Nowruz celebration brought together musicians and students. Exhibitions included From Memory to Art, Inner Voice, Pearls of the Caspian, the Music and Fine Arts year-end exhibition and Leyla Musayeva's solo exhibition. An instructor also participated in OIC 25 Cultural Fest.

Cultural documentation included Khazar University Press's Korean Folk Tales publication and the Voices of the Far East: Books and Culture event. Beyond dated events, the University's Library and Information Center publishes free visiting arrangements for members of the public at its Neftchilar Campus. This longstanding service connects university learning resources with the wider community.



11.3 Expenditure on arts and heritage

Khazar University's libraries, cultural facilities, music activities and heritage events provide a foundation for engagement with the arts and local communities. The University's 2025 programme included concerts, exhibitions, cultural publications and historical education. Financial expenditure figures are not presented in this public activity report.

11.4 Sustainable practices



The University also considers liveability in its facilities and long-term planning. Its green-space commitments describe the value of trees and safe outdoor environments, while the Climate Action Plan identifies lower-carbon travel and energy performance as institutional priorities. These are standing commitments rather than verified 2025 reductions in commuting emissions or completed construction work.

Khazar provides student accommodation near Neftchilar Campus and the metro, offering a practical connection to education and urban public transport. In 2025, the Sustainable City Project provided a forum for discussing land use, future campus planning and green public spaces with students, planners and partner organisations. Project concepts are reported as educational results and are not presented as built infrastructure or municipal development approvals.



Selected Activities in 2025

2025	ACTIVITY
12 Mar	Nature-based solutions and sustainable cities at SORG4NOBAL
30 Apr	Environment and Urban Area Improvement seminar
30 May–3 Jun	Sustainable City Project: first planning workshop
8 Mar / 28 Apr	Chamber Orchestra performances at cultural festivals
May–Jul	Museum visits, heritage learning and visual arts exhibitions
25–26 Sep	International Architectural Heritage of the Turkic World conference
27–31 Oct	Second Sustainable City Project training
12–16 Nov	Third Sustainable City Project in Ankara
30 Oct / 18 Dec	Korean Folk Tales publication and Far East literature event

2025 Overview

In 2025, Khazar University strengthened practical education in sustainable urban planning and created opportunities for cultural participation, heritage learning and artistic expression. A three-phase international design project, conferences, music performances, exhibitions and heritage publications are supported by dated university records. Public library services and longer-term campus sustainability commitments complement these activities.

SDG 12 | Responsible consumption and production

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University promotes responsible consumption and production through sustainability policies, teaching, student innovation and research partnerships. In 2025, the University updated its procurement policy, supported practical learning about waste and manufacturing, and encouraged students to explore recycling, circular design and more sustainable daily choices.

Jan 2025	11 Apr	1 Jul
Sustainable Procurement Policy revised	student learning visit to waste-management facilities	recycled-material eco-design exhibition held

12.1 Research on responsible consumption and production

In 2025, Khazar University-affiliated researchers contributed to **40 scientific publications relevant to SDG 12 (Responsible Consumption and Production)**, comprising 36 research articles, two review articles, one book chapter, and one conference paper, according to the supplied Scopus dataset. Their research addressed circular economy strategies, waste management, sustainable materials, resource recovery, and environmentally responsible production.

Circular economy and waste management

Kou et al. (2025), in *Enhancing Circular Economy Project Outcomes via Molecular Fuzzy-Based Decision Support System*, investigated how advanced decision-making models can improve circular economy investments, particularly through effective waste management and energy efficiency.

Eti et al. (2025) examined sustainable approaches to rare element waste management, proposing strategies for recycling, technological development, and resource recovery under different economic conditions.

Waste reduction and resource recovery

Kartal et al. (2025), including Khazar University-affiliated researcher Shahriyar Mukhtarov, investigated the relationship between waste-related technological innovations and greenhouse gas emissions in China. Their findings highlighted the importance of evaluating whether environmental innovations produce measurable reductions in emissions.

Aryanfar et al. (2025) explored methods of transforming food industry sludge into valuable resources, including biogas, biochar, and compost. The study demonstrated opportunities for recovering energy and materials from industrial waste.

Sustainable packaging and materials

Ebrahimi et al. (2025) developed a food packaging system incorporating potato waste starch and natural compounds to improve food preservation and freshness monitoring.

Darkak et al. (2025) investigated packaging materials produced from sunflower by-products, demonstrating their potential for monitoring food freshness and extending refrigerated food preservation.

Ghodratnama et al. (2025) examined the use of artificial intelligence to predict the strength of recycled aggregate concrete, contributing to research on resource-efficient construction materials.

Research participation and knowledge exchange

Alongside scientific publications, Khazar University promoted responsible production and consumption through practical education and environmental initiatives.

On 11–12 March 2025, researchers participated in the SORG4NOBAL international research meeting, discussing sustainable agriculture and pollution reduction.

On 11 April 2025, Chemical Engineering students visited Temiz Shahar's waste-management facilities, gaining practical knowledge of waste sorting, recycling, and treatment.

The University's EcoSteps initiative promoted awareness of individual carbon footprints, while the "Pearls of the Caspian" exhibition on 1 July demonstrated creative approaches to reusing household waste and recyclable materials.

Together, these publications and activities demonstrate Khazar University's contribution to research and knowledge exchange on resource efficiency, circular economy development, sustainable materials, and responsible production practices.

Selected Research Publications (2025)

1. **Kou, G., et al. (2025).** *Enhancing circular economy project outcomes via molecular fuzzy-based decision support system*. Ain Shams Engineering Journal. DOI
2. **Eti, S., et al. (2025).** *Scenario-driven decision models for rare element waste management by integrating Koch snowflake fuzzy sets and Euclidean expert weighting.* Sustainable Futures. DOI
3. **Kartal, M. T., et al. (2025).** *Investigating the role of waste-related patents in waste-related emissions in China.* International Journal of Sustainable Development & World Ecology. DOI
4. **Aryanfar, Y., et al. (2025).** *Transforming food industrial sludge into sustainable resources.* Business Strategy and the Environment. DOI
5. **Ebrahimi, A., et al. (2025).** *Production of a smart multilayer packaging system based on cellulose acetate nanofibers*. Industrial Crops and Products. DOI
6. **Darkak, M., et al. (2025).** *Development of active double-layer film from sunflower by-products.* Carbohydrate Polymers. DOI

Additionally, Khazar University links scientific learning with environmental protection, waste reduction and responsible use of resources. The Analytical Chemistry Research Group works on environmental monitoring, green analytical methods, heavy-metal removal and ways of reusing industrial and plastic waste. This group was established in 2024 and continued to provide an institutional setting for student research.

In March 2025, Khazar researchers participated in the international SORG4NOBAL project final meeting, discussing climate-resilient sorghum, agroecology and approaches to reducing agricultural pollution. The University also hosted the Fourth International One Health Conference on 28–29 November, where more than 70 researchers presented and discussed links between environmental risks, food safety and human health. These activities support knowledge exchange and applied research across sustainability-related fields.

Courses such as ENV 305 Health, Safety and Environment and THM 302 Sustainable Tourism offered in autumn 2025 introduced students to waste management, pollution prevention and responsible resource use across different sectors.

12.2 Operational measures

Khazar University's Sustainable Procurement Policy, revised in January 2025, guides purchasing decisions using life-cycle costs, environmental impact, ethical standards and supplier responsibilities. The University also maintains policies on sustainably sourced campus food, reducing single-use plastics and hazardous waste management. Its Environmental Policy supports waste sorting, reducing paper consumption and using electronic systems. The published policies describe institutional expectations across campus operations and relevant supplier relationships.

Practical learning strengthened this approach in 2025. Chemical Engineering students visited Temiz Shahar's waste-sorting, industrial park and incineration facilities in Balakhani on 11 April to learn about waste separation, treatment and recycling. A February visit to FAB Group manufacturing facilities introduced production processes, material efficiency and quality control. These visits connected classroom learning with operational practices in industry.



Student projects made sustainability visible through design and technology. At the Pearls of the Caspian exhibition on 1 July, students displayed eco-design and collage works made with recyclable and household waste materials. A Khazar team won third place in the Digital Ecology category at GreenTech II in April.



The student-led EcoSteps carbon-footprint platform, launched in January 2025, helped users understand the environmental impact of everyday choices. The AirVive air-purification concept also won second place at a sustainability hackathon in February.



12.3 Proportion of recycled waste

The University's Environmental Policy sets out commitments to sorting household waste, recovering paper and reducing printing, while its Plastic-Free Campus Policy encourages reusable alternatives and awareness of single-use plastics. The hazardous waste policy outlines safe handling and disposal practices. These documents provide a framework for resource management. Learning activities and recycled-material artwork illustrate students' engagement with the subject, rather than measured university-wide waste diversion.

12.4 Publication of a sustainability report

Khazar University communicates its sustainability work through publicly available reporting. Its 2024 Sustainable Development Goals Summary Report describes activities across the SDGs, while the University's sustainability webpage states that it has published annual sustainability reports since 2020. The present 2025 activity report forms part of this continuing effort to document policy commitments, educational activities and progress towards sustainable development.

Selected Activities in 2025

2025	ACTIVITY
Jan	EcoSteps carbon-footprint platform launched; procurement policy revised
8–9 Feb	AirVive project awarded second place at Clima Tech hackathon
13 Feb	FAB Group manufacturing and resource-efficiency learning visit
11–12 Mar	SORG4NOBAL research meeting on sustainable agriculture
11 Apr	Temiz Shahar waste-management and recycling site visit
17 Apr	GreenTech II Digital Ecology competition award
1 Jul	Pearls of the Caspian: recycled-material eco-design exhibition
Autumn	Health, Safety and Environment and Sustainable Tourism courses
28–29 Nov	Fourth International One Health Conference

2025 Overview

In 2025, Khazar University combined institutional policy updates with waste-management education, student-led environmental innovation, sustainable-design activities and international research dialogue. Existing policies and previous sustainability reports provide the wider institutional context for this work.

SDG 13 | Climate action

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University addresses climate change through environmental policies, research, teaching and community engagement. In 2025, the University supported climate education, student innovation and international exchanges on adaptation and clean energy, while maintaining its long-term emissions-reduction commitments.

Jan 2025	240 min	24
EcoSteps carbon-footprint calculator launched	urban climate course taught in 2024/25	presentations at One Health 2025

13.1 Research on climate action

In 2025, Khazar University-affiliated researchers contributed to scientific publications relevant to **SDG 13 (Climate Action)**. The supplied Scopus dataset contains **57 records for 2025**, including 55 research articles, reviews and book chapters, one editorial and one correction. The research covered climate policy, carbon emissions, renewable energy, green finance, and climate change adaptation.

Climate policy and carbon emission reduction

Kartal et al. (2025), in *How Can SDG-13 Be Achieved by Energy, Environment, and Economy-Related Policies?*, examined the effects of energy transition, environmental regulations, and economic policies on environmental sustainability in five emerging economies. The study highlighted the need for more effective, country-specific policies to address climate-related challenges.

Pata et al. (2025) investigated the relationship between green bonds and carbon emissions in the world's five largest emitting countries. Their findings provided insights into how sustainable financial instruments relate to emissions across different economic sectors.

Renewable energy transition and green growth

Nuriyev et al. (2025), in *Application of the Z-Information-Based Scenarios for Energy Transition Policy Development*, examined renewable energy transition strategies in Azerbaijan. The researchers developed a scenario-based approach to support energy policy decisions under uncertainty, considering the country's economic dependence on oil and gas.

Guliyev (2025) explored the relationship between renewable energy consumption and economic growth in G7 countries. The study found that the economic effects of renewable energy differed considerably between countries, highlighting the importance of national conditions and targeted policy measures.

Borowski (2025), in *Economic and Technological Challenges in Zero-Emission Strategies for Energy Companies*, reviewed the economic and technological barriers facing energy companies in transitioning towards low-emission operations. The study discussed investment requirements, renewable energy technologies, and the challenges of achieving carbon neutrality.

Climate change adaptation and agricultural resilience

Tasneem et al. (2025) investigated the impact of climate change on rice production using machine learning models. The researchers analysed historical climate and agricultural data to predict changes in crop yields, identifying temperature as a major factor influencing production. The study contributes knowledge relevant to agricultural adaptation and food security.

Research participation and knowledge exchange

Alongside scientific publications, Khazar University supported climate education, research collaboration, and environmental awareness during 2025.

In January 2025, the student-led EcoSteps: Our Carbon Footprints project launched a digital platform helping individuals calculate their carbon footprints and understand the environmental impacts of daily activities.

On 10 March 2025, the University organised the Harnessing AI to Advance Sustainability and Green Skills seminar, exploring the use of artificial intelligence in environmental protection and clean energy.

On 11–12 March 2025, researchers participated in the SORG4NOBAL international project meeting, which addressed climate-resilient agriculture, nature-based solutions, and environmental sustainability.

Climate education was further supported through a 240-minute instructional unit on climate change and greenhouse gas reduction in urban environments, developed by Dr. Rovshan Abbasov and taught during the 2024–2025 academic year.

Together, these scientific publications and institutional activities demonstrate Khazar University's contribution to climate-related research, knowledge exchange, and environmental education. Through interdisciplinary research and international collaboration, the University supports the development of knowledge relevant to climate change mitigation, adaptation, and sustainable energy transition.

Selected Research Publications (2025)

1. **Kartal, M. T., Mukhtarov, S., Depren, Ö., Ayhan, F., & Ulussever, T. (2025).** How can SDG-13 be achieved by energy, environment, and economy-related policies? Evidence from five leading emerging countries. *Sustainable Development, 33*(4), 5110–5133. DOI
2. **Pata, U. K., Kartal, M. T., Ahmed, Z., & Sinha, A. (2025).** Relationship between green bonds and carbon neutrality: Evidence from top five emitting countries' sectoral CO_2 emissions. *Financial Innovation, 11*, 10. DOI
3. **Nuriyev, M., Nuriyev, A., & Mammadov, J. (2025).** Application of the Z-information-based scenarios for energy transition policy development. *Energies, 18*(6), 1437. DOI
4. **Guliyev, H. (2025).** Heterogeneous panel data model with sharp and smooth changes: Testing green growth hypothesis in G7 countries. *Innovation and Green Development, 4*(3), 100245. DOI
5. **Borowski, P. F. (2025).** Economic and technological challenges in zero-emission strategies for energy companies. *Energies, 18*(4), 898. DOI
6. **Tasneem, K. T., Shahzad, M. U., Rashid, J., Othman, K. M., Zafar, T., & Faheem, M. (2025).** Predicting rice yield and impact of climate change on rice production using machine learning models. *Theoretical and Applied Climatology, 156*, 665. DOI

Research exchange also reached wider audiences through the March SORG4NOBAL final workshop on climate-resilient agriculture and nature-based solutions, and November's Fourth International One Health Conference on climate, health and food security.

13.2 Low-carbon energy use

Khazar University's published Greenhouse Gas Emissions Report 2024 provides an earlier reference point: 1,185.07 tonnes of CO2-equivalent emissions across Scope 1, Scope 2 and a partial Scope 3 inventory. The 2024 report also records around 480 kWh of solar generation. These are 2024 reporting figures, not 2025 emissions or energy results.

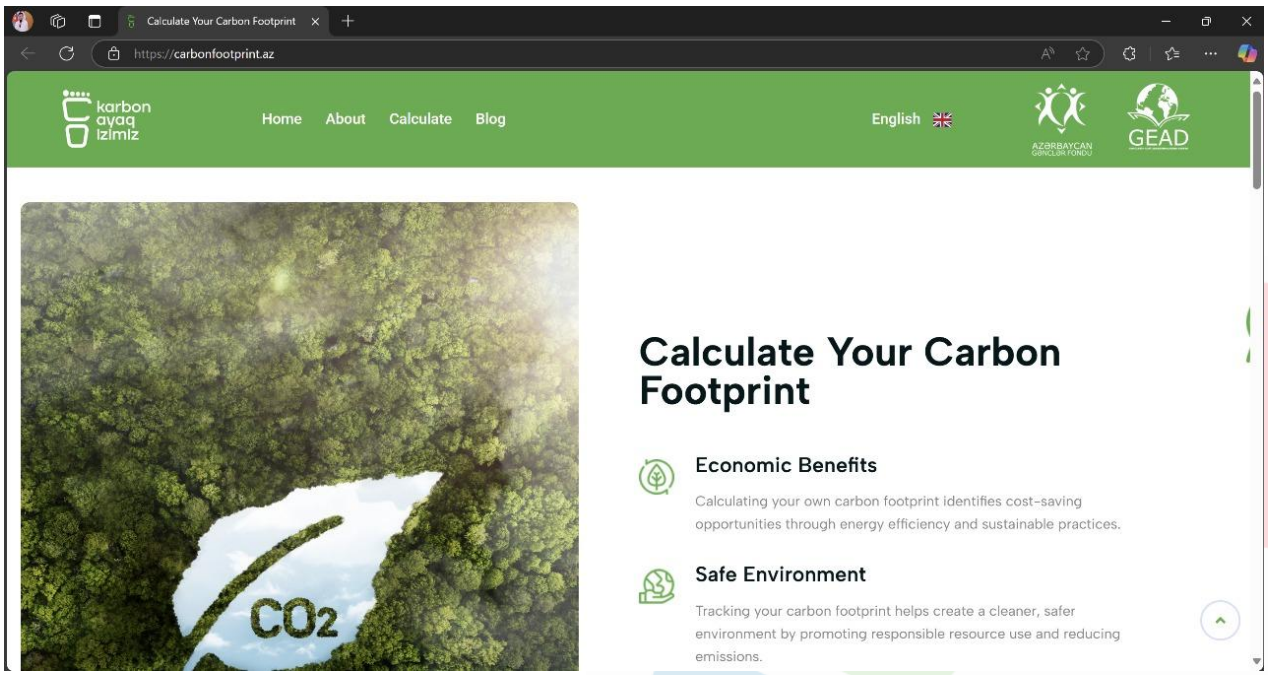
The University's Climate Action Plan and Environmental Policy identify cleaner energy, efficient buildings and lower-emission transport as long-term priorities. Their publication reflects institutional planning; a measured 2025 low-carbon energy share would require a complete energy-use record across university operations.

Knowledge exchange included the Energy Systems Research Center seminar series in April-May and a piezoelectric energy-harvesting seminar in November, examining renewable generation, smart grids and emerging technologies.



13.3 Environmental education measures

The student-led EcoSteps: Our Carbon Footprints project launched a public-facing online footprint calculator in January 2025. In March, the University organised Harnessing AI to Advance Sustainability and Green Skills for Khazar and Dunya School staff, highlighting practical approaches to cleaner energy and environmental problem-solving.



Dr. Rovshan Abbasov also developed a 240-minute urban climate-change curriculum taught during the 2024-2025 academic year, covering risks, mitigation and adaptation. The University's three-phase Sustainable City Project brought students into planning exercises on greener urban spaces and campus design.

International discussions expanded through the SORG4NOBAL research partnership, the One Health conference and an October water-diplomacy lecture. These activities advanced dialogue and skills; they are not presented as implemented municipal climate plans or measured emissions reductions.

13.4 Commitment to carbon neutral university

Khazar University's public Climate Action Plan (2015-2050) states an ambition to reach net-zero greenhouse gas emissions by 2050. The accompanying 2024 emissions inventory outlines a Scope 1, Scope 2 and partial Scope 3 accounting

approach. These sources describe the University's direction and baseline reporting, not achievement of carbon neutrality in 2025.

Selected Activities in 2025

2025	ACTIVITY
Jan	EcoSteps project and online carbon-footprint calculator launched
8-9 Feb	AirVive climate-tech project wins second place at hackathon
10 Mar	AI, sustainability and green skills seminar at Dunya School
11-12 Mar	SORG4NOBAL climate-resilient agriculture research exchange
29 Apr-1 May	Renewable-energy and smart-grid academic seminar series
May-Nov	Three-phase Sustainable City Project practical planning workshops
21 Oct	Water-diplomacy and climate challenges lecture
7 Nov	Piezoelectric energy technologies academic seminar
28-29 Nov	Fourth International One Health Conference

2025 Overview

In 2025, Khazar University connected climate science with public learning through the EcoSteps digital platform, climate-related coursework, energy seminars, applied adaptation partnerships, student innovation and international conferences. Its 2050 emissions goal and published 2024 inventory provide the longer-term institutional context for this work.

2025 / ANNUAL SUSTAINABILITY REPORT

SDG 14 | Life below water

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University contributes to the protection of aquatic ecosystems through research, water-related teaching, international cooperation and environmental policies. In 2025, its work included studies of freshwater pollution, discussion of Caspian water security and the establishment of a specialised water research centre. The University's existing policies also address sustainable seafood sourcing and the prevention of pollution that can affect rivers and seas.

2025
two Khazar-affiliated aquatic research papers

11–12 Mar
international SORG4NOBAL final workshops

3 Nov
water research centre established

14.1 Research on life below water

In 2025, the supplied Scopus dataset recorded **7 publications associated with SDG 14 (Life Below Water)**, comprising six research articles and one review article. Additional institutional records identified two further relevant publications. Khazar University-affiliated research addressed marine pollution, freshwater biodiversity, aquatic ecotoxicology, and water quality.

Marine pollution and ecosystem protection

Maeyouf et al. (2025), including Khazar University-affiliated researcher Gunel Imanova, investigated heavy metal contamination along Libya's Benghazi coastline. The study analysed 45 samples of seawater, sediments, fish, algae, and mussels, identifying significant pollution risks associated with cadmium and other heavy metals.

In another study, Maeyouf et al. (2025) examined heavy metal contamination in seawater, sediments, algae, and fish from Susah and Tobruk in the Mediterranean Sea. The researchers identified contamination and bioaccumulation risks, highlighting the importance of environmental monitoring and marine ecosystem protection.

Freshwater biodiversity and aquatic pollution

Mamedova and Karanis (2025), in *Coccidia (Apicomplexa: Eucoccidiorida) of Freshwater Fish*, reviewed parasitic organisms affecting freshwater fish. The study contributed knowledge relevant to fish health, aquatic biodiversity, and disease management in freshwater ecosystems.

Karimova et al. (2025), including Khazar University researcher Rovshan Abbasov, investigated the effects of chronic exposure to the pesticide-related substance diflubenzuron on *Daphnia magna*. Published in *Ecotoxicology*, the study identified adverse effects on survival, reproduction, and physiological health, demonstrating the risks chemical contamination can pose to freshwater organisms.

Water quality and environmental monitoring

Yolchuyeva et al. (2025), in *Analysis of Physico-Chemical Parameters of Drinking Water from Kur River, Azerbaijan*, examined water samples collected from six locations along the Kura River. The researchers assessed parameters including pH, electrical conductivity, dissolved solids, and alkalinity, contributing evidence relevant to freshwater quality assessment.

Research collaboration and knowledge exchange

Alongside scientific publications, Khazar University supported research cooperation and educational activities concerning aquatic ecosystems.

On 11–12 March 2025, researchers participated in the SORG4NOBAL international project meeting, discussing agricultural pollution, eutrophication, and nature-based solutions.

On 25 March 2025, Khazar representatives participated in a water security workshop at Erasmus University Rotterdam, addressing challenges affecting Azerbaijan and the Caspian Sea.

On 3 November 2025, the University established the Water Sciences and Hydroinformatics Research Center, creating an institutional framework for research on water resources, hydrology, and ecosystem management.

Together, these publications and academic activities demonstrate Khazar University's engagement in understanding aquatic pollution, protecting biodiversity, and supporting sustainable water resource management.

Selected Research Publications (2025)

1. **Maeyouf, H., Khattab, R. A., Temraz, T., Sami, M., Ali, I., & Imanova, G. (2025).** Assessment of heavy metal contamination in sediments, seawater, and marine organisms along the Benghazi coast, northeastern Libya (Mediterranean Sea). *Environmental Science and Pollution Research, 32*(33), 19953–19974. DOI
2. **Maeyouf, H., Khattab, R. A., Temraz, T., Sami, M., Ali, I., & Imanova, G. (2025).** Heavy metal contamination in seawater, sediments, algae, and fish from Susah and Tobruk, Mediterranean Sea. *Water Environment Research, 97*(5), e70091. DOI
3. **Mamedova, S., & Karanis, P. (2025).** Coccidia (Apicomplexa: Eucoccidiorida) of freshwater fish. *Microorganisms, 13*(2), 347. DOI
4. **Karimova, G., Na, J., An, G., Kim, H., Abbasov, R., & Jung, J. (2025).** Cellular and individual toxicity of diflubenzuron for the chronic exposure in Daphnia magna: Focus on oxidative stress, chitin content, and reproductive outcomes. *Ecotoxicology, 34*(6), 1068–1077. DOI
5. **Yolchuyeva, F., Hajiyeva, S., & Huseynli, A. (2025).** Analysis of physico-chemical parameters of drinking water from Kur River, Azerbaijan. *Khazar Journal of Science and Technology, 9*(1), 5–14. DOI

In 2025, a Khazar-affiliated research team contributed to the peer-reviewed study Cellular and individual toxicity of diflubenzuron for the chronic exposure in Daphnia magna. Published in Ecotoxicology, 34(6), the study investigated how exposure to a pesticide-related substance affects a freshwater organism important to aquatic food webs.

A second paper, Analysis of Physico-Chemical Parameters of Drinking Water from Kur River, Azerbaijan, examined water samples from six sites along the Kura River. The findings contribute to understanding freshwater quality. These publications offer concrete examples of research, rather than a measure of total research output or citation impact.

14.2 Supporting aquatic ecosystems through education

In the 2025 autumn term, Caspian Studies, Water Resources Management and Water Diplomacy courses introduced students to aquatic habitats, pollution, freshwater governance and shared water resources. These courses supported specialist education on the environmental challenges facing rivers and the Caspian Sea.

Learning also extended beyond university classrooms. On 2 June, visiting Dunya School pupils explored aquatic specimens in a Life Sciences laboratory and discussed biodiversity protection.



A visit to Tamiz Shahar waste facilities and the Pearls of the Caspian eco-design exhibition further raised awareness of pollution prevention and reuse.

14.3 Supporting aquatic ecosystems through action

The SORG4NOBAL international project concluded with workshops on 11–12 March 2025, including a session hosted by Khazar University. Researchers, farmers and partner organisations explored ways to reduce nutrient enrichment and pesticide contamination through sustainable agricultural practices.

At an Erasmus University Rotterdam workshop on 25 March, Khazar academics shared perspectives on water security and the Caspian Sea. A Finnish ambassador's water-diplomacy lecture in October and the Fourth International One Health Conference in November created further opportunities for discussion across disciplines.

The University also maintains a Sustainable Harvesting Policy for Campus Aquatic Food, which calls for responsible sourcing and traceability of aquatic food products. Its presence sets an institutional direction; documented supplier implementation is a separate matter.

14.4 Water sensitive waste disposal

Khazar University publishes a Plastic-Free Campus Policy that promotes reusable alternatives, water dispensers and awareness of single-use plastic pollution. Its Water Quality Standards and Guidelines describe parameters used to assess contamination, including nutrients, heavy metals and oil-related substances.

The University also has guidance for hazardous-waste handling and environmental protection. These documents explain its approach to managing potential pollution risks; annual discharge sampling, compliance results and measured plastic reductions require separate operational records.

14.5 Maintaining a local ecosystem

The Water Sciences and Hydroinformatics Research Center, established on 3 November 2025, brings together expertise in hydrology, water quality, ecosystem studies and river-basin management. It provides a foundation for longer-term work on water resources and nearby aquatic environments.

The University's Biodiversity Conservation Policy supports habitat protection and monitoring in principle. The 2025 research and partnerships describe important scientific capacity, while specific local monitoring programmes or habitat restoration outcomes would need to be documented separately.

Selected Activities in 2025

2025	ACTIVITY
11–12 Mar	SORG4NOBAL workshops on nature-based solutions and pollution pathways
25 Mar	Caspian water-security exchange at Erasmus University Rotterdam
15 May	Publication online of Daphnia magna ecotoxicology study
2 Jun	Aquatic biodiversity learning visit for Dunya School pupils
21 Oct	Water diplomacy and international cooperation lecture
3 Nov	Water Sciences and Hydroinformatics Research Center established
28–29 Nov	One Health conference on shared environmental challenges
2025	Kura River water-quality study published

2025 Overview

During 2025, Khazar University connected aquatic research with education, interdisciplinary partnerships and public-facing learning. Its peer-reviewed freshwater studies, international water discussions and new research centre complemented established policies intended to protect water quality and reduce pressures on aquatic ecosystems.

2025 / ANNUAL SUSTAINABILITY REPORT

SDG 15 | Life on land

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University supports the protection of land ecosystems through research on plant genetic diversity, biodiversity education, sustainable land-use activities and environmental policies. In 2025, students and faculty took part in international research exchanges, practical training and projects focused on responsible land management. The following sections present these activities together with the University's established conservation commitments.

50	**11–12 Mar**	**22–23 Dec**
Bread-wheat samples studied	SORG4NOBAL final meeting	Genetic-diversity training

15.1 Research on land ecosystems

In 2025, the supplied Scopus dataset recorded **6 research articles associated with SDG 15 (Life on Land)**. Additional university records identified a further relevant publication on plant genetic diversity. Khazar University-affiliated research addressed biodiversity conservation, endangered species, sustainable land management, plant genetics, and environmental pressures affecting terrestrial ecosystems.

Biodiversity and endangered species conservation

Hosseinian Yousefkhani et al. (2025), including Khazar University-affiliated researcher Gulbeniz Qasimova, investigated conservation priorities for *Bufo eichwaldi*, a vulnerable toad species native to the Hyrcanian forests of Azerbaijan and Iran.

The study combined genetic analysis and species distribution modelling to identify important habitats and environmental factors affecting the species. Its findings highlighted the importance of protecting forest habitats and maintaining biodiversity in the region.

Plant genetic diversity and conservation

Ojaghi et al. (2025), including Khazar University researchers Javid Ojaghi and Jamala Eldarova Mursalova, examined the genetic diversity of Azerbaijani bread wheat.

Published in the *Turkish Journal of Agriculture and Forestry*, the study analysed **50 wheat samples from six botanical varieties**, identifying 42 alleles using molecular markers. The findings contributed to knowledge relevant to the conservation of plant genetic resources and sustainable crop improvement.

Land degradation and sustainable plant management

Ahmed et al. (2025), in *Impact of Dust Storms on Plant Biomass: Model Structure and Dynamic Study*, investigated the effects of dust storms on vegetation and land degradation. The researchers developed a mathematical model examining relationships between dust pollution, plant biomass, and reforestation. Their findings highlighted conditions that may increase desertification risks and the importance of maintaining vegetation.

Bougdour et al. (2025), including Khazar University-affiliated researcher Gunel Imanova, examined the effects of untreated and treated waste-derived water on basil and alfalfa plants in Morocco. The study found that appropriate treatment methods substantially improved plant growth compared with untreated leachate, contributing knowledge relevant to safer irrigation and sustainable land management.

Research collaboration and biodiversity education

Alongside scientific publications, Khazar University supported research cooperation and educational activities promoting biodiversity conservation.

On 11–12 March 2025, researchers participated in the SORG4NOBAL international project meeting, discussing sustainable agriculture, nature-based solutions, and agricultural biodiversity.

On 2 June 2025, Dunya School students visited Khazar University's Life Sciences laboratory, where they explored biological specimens and learned about biodiversity protection.

On 22–23 December 2025, the University organised a training course on molecular marker data analysis, bringing together students and researchers from several universities and research institutions to develop skills in genetic diversity assessment.

Together, these publications and institutional activities demonstrate Khazar University's engagement in biodiversity research, species conservation, sustainable land management, and environmental education.

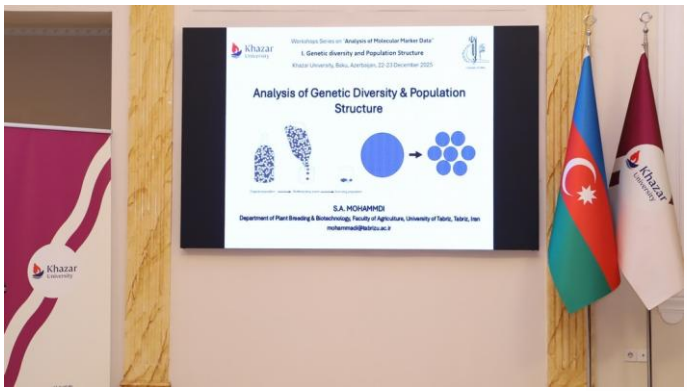
Selected Research Publications (2025)

1. **Hosseinian Yousefkhani, S. S., Naser, M., Yasser, A., Essl, F., García-Rodríguez, A., Faizi, H., Qasimova, G., & Rödder, D. (2025).** Integrating spatially-explicit and genetic analyses to identify conservation priorities for *Bufo eichwaldi* (Amphibia: Anura) in the Hyrcanian Forest. *Journal of Zoological Systematics and Evolutionary Research, 2025*, 3100655. DOI
2. **Ojaghi, J., Nuriyeva, S., Salayeva, S., Eldarov, M., Akparov, Z., & Eldarova Mursalova, J. (2025).** Allelic diversity of Azerbaijani bread wheat (*Triticum aestivum* L.) by SSR markers. *Turkish Journal of Agriculture and Forestry, 49*(2). DOI
3. **Ahmed, M., Jawad, S., Das, D., Boulaaras, S., & Osman, M. S. (2025).** Impact of dust storms on plant biomass: Model structure and dynamic study. *Alexandria Engineering Journal, 126*, 605–622. DOI
4. **Bougdour, N., Ali, I., Bakas, I., Assabbane, A., & Imanova, G. (2025).** Effects of waste and treated water irrigation on basil and alfalfa plants in Morocco. *Irrigation and Drainage, 74*(5), 2039–2050. DOI

University-affiliated researchers also contributed to the 2nd Mirza Gökgöl International Plant Genetic Resources Symposium in August 2025 through an abstract on durum wheat germplasm. This conference contribution and the peer-reviewed article are separate research outputs. The University's Environmental Research Centre also works across ecosystem services, land management and nature-based solutions.

15.2 Supporting land ecosystems through education

Khazar University encourages learning about biodiversity both in degree programmes and through activities involving external participants. The University's Fall 2025 Ecology and Evolutionary Biology course and General Biology teaching include ecological relationships, plant diversity and conservation. These courses give students a foundation for understanding and protecting land ecosystems.



On 2 June 2025, pupils from Dunya School visited the Life Sciences laboratory to observe biological specimens and learn about respect for living organisms and the importance of biodiversity. On 22–23 December, the Department of Life Sciences hosted training on molecular marker data and genetic diversity with an invited professor from the University of Tabriz. Researchers and students from several universities and specialist institutes joined the practical sessions.



Land stewardship also featured in the SORG4NOBAL project's final meeting on 11–12 March 2025. Participants from Azerbaijan and several European countries, alongside farmers and agricultural stakeholders, discussed climate-resilient sorghum, agroecology and sustainable farming. The University's sustainable food policy provides a standing framework for responsible food sourcing that considers soil, water and biodiversity.

15.3 Supporting land ecosystems through action

The University's policy on the conservation, restoration and sustainable use of terrestrial ecosystems sets out its approach to land and habitat stewardship. Its Biodiversity Conservation Policy addresses species of conservation concern, while the alien species policy describes measures intended to reduce ecological risks. These are standing institutional commitments.



During 2025, students explored nature-sensitive development through the Rural Forest Life workshop held on 27–31 October. Architecture and design teams from Azerbaijan and Türkiye developed proposals that considered landscape and ecological factors in campus and area planning. The third phase of the Sustainable City Project in November also explored the relationship between planning, green spaces and the built environment.

Student innovation complemented these activities. A Khazar team earned third place in the Digital Ecology category of GreenTech II in April. BeeLance was presented at the Rebuild Karabakh exhibition in October as a smart-environment concept related to bees and nature. A student participating in the SatWater project helped advance a satellite-informed irrigation idea in December. These projects show student engagement with environmental challenges at the concept and development stages.





15.4 Land sensitive waste disposal

Khazar University's environmental policies address waste practices that can affect soil, wildlife and surrounding ecosystems. The Plastic-Free Campus Policy promotes reduced use of single-use plastic and reusable alternatives. The Hazardous Waste Disposal Policy describes segregation, storage and safe handling of hazardous materials. The University's Water Quality Standards and Guidelines identify water-quality parameters relevant to environmental protection. These documents guide institutional practice and provide a basis for future monitoring and reporting.

Selected Activities in 2025

2025	ACTIVITY
11–12 Mar	SORG4NOBAL international project final meeting
17 Apr	GreenTech II — Digital Ecology achievement
2 Jun	Dunya School biodiversity learning visit
19–22 Aug	Plant Genetic Resources Symposium research contribution
14–16 Oct	BeeLance at Rebuild Karabakh exhibition
27–31 Oct	Rural Forest Life multidisciplinary workshop
12–16 Nov	Sustainable City Project — third phase
28–29 Nov	One Health international conference
6–7 Dec	SatWater student innovation at Space Hackathon
22–23 Dec	Molecular-marker and genetic-diversity training

2025 Overview

In 2025, Khazar University contributed to land-ecosystem knowledge through plant-genetics research, international agroecology cooperation, biodiversity education and student-led environmental design. Published conservation, sustainable food and waste-management policies continued to support the University's wider commitment to responsible land use. These activities reflect academic work, public engagement and institutional policy without treating proposals or policy statements as measured ecological restoration.



SDG 16 | Peace, justice, and strong institutions

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University promotes transparent governance, ethical conduct, academic freedom and public dialogue through its institutional structures, legal education, research and engagement with external partners. During 2025, the University held Student Council elections, published governance information and brought students, researchers and public-sector representatives together to discuss rights, institutions and policy challenges.

54%	**49**	**41**
Student Council voter turnout	Khazar University Forum presentations	Ethics cases in 2024–2025 academic year

16.1 Research on peace and justice

In 2025, the supplied Scopus dataset recorded **8 publications associated with SDG 16 (Peace, Justice and Strong Institutions)**, including five research articles, one review article, one book chapter, and one letter. Additional Khazar University publications addressed political institutions, civil society, conflict, and national sovereignty. These studies reflect interdisciplinary research on governance, institutional accountability, human rights, and social protection.

Institutional quality and governance

Mukhtarov and Aliyev (2025), in *The Role of Institutional Quality in the Transition to Renewable Energy Consumption in the Case of an Oil-Rich Country*, examined how governance quality, corruption-related indicators, and economic conditions influence renewable energy consumption in Russia. The findings highlighted the importance of effective institutions for sustainable policy implementation.

İşbilir (2025), in *Governing with Populism, Governing Against Populism: The Cases of Morocco and Algeria*, explored populism and political governance in North Africa. In another book chapter, *The Role of Civil Society Organizations in Libya's Political and Social Life*, the researcher examined the contribution of civil society organisations to political and social development.

Conflict, sovereignty and political transformation

Valiyev and Huseynov (2025), in *Post-Conflict Transformation in Azerbaijan: Rethinking the Politics of Nationalism and Rewriting History*, explored changes in national identity, sovereignty, and historical interpretation following the Second Karabakh War. Published in the *Eurasian Research Journal*, the study contributed to academic discussions on post-conflict political transformation.

Additional scholarly work examined the geopolitical and governance challenges surrounding the Trans-Caspian Pipeline, multicultural concepts in school textbooks, and Azerbaijan's foreign-policy development. These studies contributed to understanding regional cooperation, political institutions, and civic education.

Violence prevention and social protection

Maran et al. (2025), including Khazar University-affiliated researcher Murat Yıldırım, examined the consequences of stalking among students and workers. The study involved 561 participants who had experienced stalking and identified differences in psychological consequences and coping strategies, providing evidence relevant to prevention and victim support.

Korkmaz et al. (2025), also involving Murat Yıldırım, investigated cyberbullying and psychological resilience among 591 adolescents. The findings showed associations between cyberbullying, anxiety, and stress, highlighting the potential role of resilience in reducing stress among affected young people.

Research participation and institutional dialogue

Alongside scientific publications, Khazar University supported activities promoting human rights, accountable governance, and civic participation.

On 15 May 2025, the Law Department organised a Human Rights in Education seminar, discussing educational rights, non-discrimination, and students' participation in academic life.

On 30–31 May 2025, the University hosted the Khazar University Forum on Navigating Sovereignty in the Digital Age. The international forum featured **49 presentations** examining sovereignty, artificial intelligence, governance, and international cooperation.

On 9–12 December 2025, Student Council presidential elections were conducted across four campuses, with **54% student voter turnout**, providing students with an opportunity to participate in institutional representation.

These research and institutional activities contributed to knowledge exchange on governance and justice while creating opportunities for civic education, dialogue, and student participation.

Selected Research Publications (2025)

1. **Mukhtarov, S., & Aliyev, J. (2025).** The role of institutional quality in the transition to renewable energy consumption in the case of an oil-rich country. In *Renewable Energy Projects and Investments* (pp. 227–242). Elsevier. DOI
2. **Valiyev, O., & Huseynov, E. (2025).** Post-conflict transformation in Azerbaijan: Rethinking the politics of nationalism and rewriting history. *Eurasian Research Journal, 7*(4), 393–408. DOI
3. **Maran, D. A., et al. (2025).** Consequences and coping strategies among students and workers experiencing stalking. *Iranian Rehabilitation Journal, 23*(2), 217–232. DOI
4. **Korkmaz, Z., Çiçek, İ., Buluş, M., Şanlı, M. E., & Yıldırım, M. (2025).** The role of resilience in the relationship between cyberbullying and depression, anxiety, and stress in adolescents. *Brain and Behavior, 15*(10), e70916. DOI
5. **İşbilir, C. (2025).** Governing with populism, governing against populism: The cases of Morocco and Algeria. In *Otherness Between East and West: Populism in the Middle East* (pp. 355–380). İdeal Kültür Publishing. Publication details
6. **İşbilir, C. (2025).** The role of civil society organizations in Libya's political and social life. In *Civil Society in Africa: Opportunities and Limitations* (pp. 85–106). Kadim Publishing. Publication details

16.2 University governance measures

The Academic Council is Khazar University's main collegial governing body. It addressed doctoral research, examination results and teaching arrangements in its 28 February 2025 meeting, while the 4 July meeting considered graduate matters, appointments and academic procedures. Its published regulation provides for representation from the Student Council and elected faculty members.

On 9–12 December 2025, the University held a Student Council presidential election across four campuses. Three candidates took part and voter turnout was 54%. Lala Imanzade was elected with 60% of votes. The election gave students a documented opportunity to select their representative leadership.



Khazar University also maintains published Anti-Bribery and Anti-Corruption, Academic Freedom and Code of Ethics and Conduct policies, together with an Ombudsman service for confidential assistance with concerns. The 2024–2025 Ethics Committee report records 41 anonymised cases during the academic year, including employee and student matters. These policies and reporting arrangements support accountability and institutional integrity.

16.3 Working with government

On 30–31 May 2025, the Khazar University Forum on digital sovereignty brought together researchers, diplomatic representatives, government-related experts and students. Its 49 presentations explored governance, technology and international cooperation. The forum provided a setting for academic and public-sector perspectives on questions of growing importance to institutions.

Legal and civic learning also formed part of the year's activities. The Law Department held a Human Rights in Education seminar on 15 May, addressing access to education, non-discrimination and students' rights. A Tax Code Amendments seminar in January brought regulatory information to finance professionals and entrepreneurs, while faculty and students attended the Diplomacy Spring School in March.





Khazar staff took part in policy-oriented exchanges, including the September think-tank conference and a November sovereignty roundtable at the Center for the Analysis of International Relations. The University also hosted data collection for the EUROSTUDENT survey on 7–8 April: 104 students shared information about educational experience, social conditions and well-being as part of a nationally commissioned research initiative.



16.4 Proportion of graduates in law and civil enforcement

The University's Law Department contributes to legal education through instruction in civil and criminal law and related subjects. Its teaching supports students' understanding of legal principles, civic responsibility and the role of institutions in society.

Selected Activities in 2025

2025	ACTIVITY
25 Jan	Tax Code Amendments 2025 seminar
28 Feb	Academic Council meeting
24–28 Mar	Diplomacy Spring School
7–8 Apr	EUROSTUDENT student survey
15 May	Human Rights in Education seminar
30–31 May	Khazar University Forum: Digital Sovereignty
4 Jul	Academic Council meeting
29 Sep	International think-tank conference
11 Nov	AIR Center sovereignty roundtable
9–12 Dec	Student Council presidential election
17 Dec	Legal and constitutional sovereignty book event

2025 Overview

In 2025, Khazar University combined elected student leadership, Academic Council decision-making, rights education, public dialogue and governance-related research. Its published policies and ethics-reporting arrangements provided an institutional framework for these activities and continued engagement with the wider community.

2025 / ANNUAL SUSTAINABILITY REPORT

SDG 17 | Partnerships for goals

Khazar University · Baku, Azerbaijan

REPORTING PERIOD JANUARY–DECEMBER 2025

Institutional Approach

Khazar University works with universities, public institutions, civil-society organisations and industry partners to advance sustainable development. In 2025, these partnerships supported shared research infrastructure, interdisciplinary learning, public dialogue and student opportunities. This report presents documented activities and continuing institutional commitments.

8	**70+**	**3**
DIRNA partner universities	One Health researchers in 2025	AIESEC campus information sessions

17.1 Research into partnership for the goals

17.1 Research into partnerships for the goals

In 2025, the supplied Scopus dataset recorded **54 publications associated with SDG 17 (Partnerships for the Goals)**, comprising 46 research articles, five book chapters, two review articles, and one conference paper. Khazar University-affiliated research addressed international investment, sustainable finance, environmental governance, and policy cooperation.

International research and sustainable investment

Huseynli et al. (2025), in *The Environmental Footprint of Foreign Investment in Bulgaria*, examined the relationship between foreign direct investment and carbon emissions. The study contributed evidence relevant to understanding how international investment and environmental sustainability interact.

Shahbaz et al. (2025), in *A Fuzzy Decision-Making Model for Enhancing Sustainable Tourism Investments in Climate-Vulnerable Destinations*, developed a framework for evaluating sustainable investment priorities, highlighting the importance of technological infrastructure, environmental considerations, and financial support.

García Alcaraz et al. (2025) investigated how government policies and environmental attitudes influence residential solar energy adoption in Mexico. Their findings provided insights into the role of public policy in encouraging environmentally responsible investment and technology adoption.

Sustainable finance and cross-sector development

Majidah et al. (2025), in *Computational Intelligence for Sustainable Banking: A Novel Fermatean Fuzzy LOPCOW–EDAS Framework*, developed a decision-making model for identifying sustainable banking strategies. The study highlighted digital green banking and technological innovation as priorities, contributing knowledge relevant to financial-sector participation in sustainable development.

International research networks and institutional cooperation

Through the Erasmus+ DIRNA project, the University coordinated cooperation among **eight Azerbaijani partner universities**, supported by European academic institutions. The shared institutional repository presented in January 2025 and subsequent RIMS training in April strengthened institutional capacity for research management and open-access knowledge sharing.

On 11–12 March 2025, the SORG4NOBAL partnership connected researchers and agricultural stakeholders from several European countries and Azerbaijan, including representatives of international organisations. The project provided a platform for sharing research expertise and discussing future cooperation in sustainable agriculture.

On 28–29 November 2025, the Fourth International One Health Conference brought together Khazar University, national health and food-safety institutions, and international academic partners. With more than 70 researchers and 24 presentations, the conference facilitated cross-sector dialogue on environmental and public health challenges.

Public-private partnerships and civil society engagement

The Sustainable City Project connected public education institutions, Türkiye-based Horizon Planning, and universities from Azerbaijan and Türkiye through three collaborative training phases in 2025. The partnership demonstrated how academic and professional expertise can be combined in practical sustainability education.

On 22 September 2025, Khazar University signed a cooperation memorandum with AIESEC Azerbaijan, followed by student information sessions introducing international volunteering and professional development programmes.

Cooperation with the Erasmus Student Network also advanced discussions on student integration, international mobility, and institutional networking.

These initiatives strengthened research cooperation, cross-sector dialogue, and educational partnerships supporting sustainable development.

Selected Research Publications (2025)

1. **Huseynli, B., Kandemir Comoglu, G., & Huseynli, N. (2025).** The environmental footprint of foreign investment in Bulgaria. *International Journal of Energy Economics and Policy, 15*(5), 606–613. DOI
2. **Shahbaz, M., Yüksel, S., Eti, S., Dinçer, H., & Khamdamov, S.-J. (2025).** A fuzzy decision-making model for enhancing sustainable tourism investments in climate-vulnerable destinations. *Journal of Environmental Management, 380*, 125151. DOI
3. **García Alcaraz, J. L., Díaz Reza, J. R., Márquez Figeroa, L. J., Aryanfar, Y., Rodríguez Álvarez, J. L., & Realyvásquez Vargas, A. (2025).** Influence of government policies, environmental concerns, and attitudes toward solar panel purchase intention. *Journal of Cleaner Production, 491*, 144765. DOI
4. **Majidah, M., Rahadian, D., Firli, A., Kusairi, S., Eti, S., Yüksel, S., & Dinçer, H. (2025).** Computational intelligence for sustainable banking: A novel Fermatean fuzzy LOPCOW–EDAS framework. *International Journal of Advanced Computer Science and Applications, 16*(12), 747–753. DOI

17.2 Relationships to support the goals

In January 2025, the DIRNA team presented its shared institutional repository. Subsequent RIMS training in April and international partner seminars helped participating universities develop research-management and inclusive education skills. These training activities supported practical cooperation among participating universities.

On 11–12 March 2025, SORG4NOBAL brought together academics, agricultural organisations, farmers and international partners to discuss climate-resilient crops and nature-based solutions. The Fourth International One Health Conference on 28–29 November brought together more than 70 researchers and 24 presentations on public health, food systems and the environment. Both events created opportunities for dialogue across sectors.

In partnership with public and private actors, Khazar contributed to the Sustainable City Project across three 2025 stages, including the October workshop and November international phase. The University also met the State Employment Agency about student employment, supported the EUROSTUDENT survey and signed an agricultural research agreement.



Cooperation with non-governmental organisations was also part of the year's work. AIESEC Azerbaijan is a youth-led, not-for-profit organisation. It held a March information event at Khazar, signed a cooperation memorandum with the University in September, and joined the Career and Alumni Center for October and December sessions on Global Volunteer, Global Teacher and Global Talent. These activities introduced students to international volunteering and development opportunities.



In June, the University also met the international and Azerbaijani representatives of the Erasmus Student Network, an independent student non-profit organisation, to discuss student integration, ongoing initiatives and future cooperation. These exchanges supported student networking and access to international learning opportunities.



17.3 Publication of SDG reports

Khazar University makes sustainability information available through public institutional reports. Its Sustainable Development Goals 2024 Summary Report presents activities across all 17 goals and provides a reference for following progress over time.

The University is compiling its 2025 sustainability reporting around the same goal-by-goal structure, connecting activities to their dates and source records. Publication of the approved 2025 reports will provide readers with a consolidated account of that reporting year.

The University's sustainability reporting and research networks bring together information from different academic and administrative units and offer a basis for future assessment and learning.

17.4 Education for the SDGs

The University offers sustainability-related subjects in its course catalogue and degree programmes. A documented Fall 2025 Sustainable Tourism syllabus explores the environmental, economic and social dimensions of tourism. The curriculum also includes subjects on water resources, environmental science and human rights.

Learning also extends beyond enrolled students. On 2 June 2025, the Life Sciences team hosted school pupils for biodiversity education. DIRNA training and international project workshops provided further opportunities for participants to exchange knowledge about education and sustainable development.



Selected Activities in 2025

2025	ACTIVITY
10 Jan	DIRNA joint repository presentation
7 Mar	AIESEC student information event
11–12 Mar	SORG4NOBAL international project conclusion
17 Apr	DIRNA RIMS research-management training
30 May–3 Jun	Sustainable City Project, first phase
23 Jun	Erasmus Student Network cooperation meeting
22 Sep	AIESEC Azerbaijan cooperation memorandum
24 Oct	AIESEC volunteer and exchange programme session
27–31 Oct	Sustainable City Project, second phase
28–29 Nov	Fourth International One Health Conference
12 Dec	AIESEC international programme session

2025 Overview

In 2025, Khazar University advanced shared research systems, cross-sector dialogue, international education and cooperation with civil society. Completed events and training activities are distinguished from agreements that set the direction for future joint work.

