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.

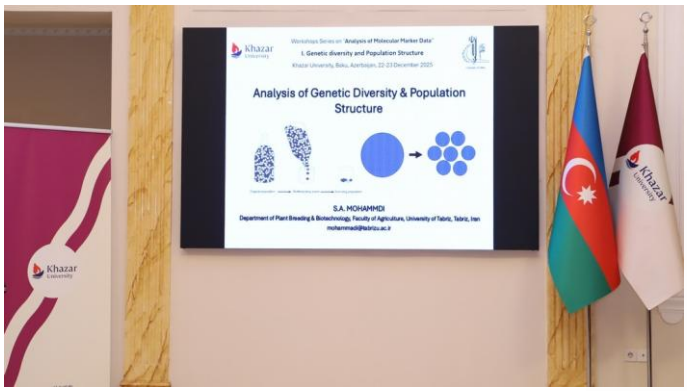
Selected Research Publications (2025)

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.