

TARAZ UNIVERSITY NAMED AFTER M.H. DULATY

Approved by the Vice-Rector for
Strategic development and
internationalization



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SUSTAINABLE DEVELOPMENT REPORT FOR 2024

TARAZ, KAZAKHSTAN

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This report provides an integrated picture of the university's sustainability efforts through 2024 and serves as a tool to enhance the university's transparency and accountability to internal and external stakeholders.

1. INTRODUCTION

NPLC "Dulaty University" (hereinafter referred to as Dulaty University) actively fulfills its social mission in the field of lifelong education and serves as an initiator of socio-public projects aimed at improving the quality of life of the population. The university's activities are based on the principles of sustainable development, including environmental responsibility, social inclusion, and economic efficiency. Dulaty University actively incorporates the ideas of sustainable development into its educational programs, scientific research, and public initiatives, contributing to the formation of a sustainability culture among students, faculty, and staff.

In 1998, Taraz State University named after M.Kh. Dulaty was established based on the merger of three higher education institutions: Zhambyl University (since 1996), Zhambyl Hydromelioration and Construction Institute (since 1962), and Zhambyl Technological Institute of Light and Food Industry (since 1958).

On June 16, 2020, Taraz State Pedagogical University and Taraz State University named after M.Kh. Dulaty were merged to form NPLC "Taraz Regional University named after M.Kh. Dulaty."

On September 20, 2024, as a result of reorganization, two institutions were created on the basis of the former university: NPLC "Dulaty University" and NPLC "Kazakh National University of Water Resources and Irrigation."

Dulaty University is one of the leading multidisciplinary universities in Kazakhstan, carrying out educational, research, and upbringing activities in accordance with License No. KZ47LAA00036894 for educational activity dated January 21, 2025, the University Charter, internal labor regulations, and other local regulatory acts, in compliance with the legislation of the Republic of Kazakhstan.

On March 19, 2024, a new Development Program of NPLC "Taraz Regional University named after M.Kh. Dulaty" for 2023–2029 was approved. This program defines the strategic goals and objectives of the university as an educational institution engaged in innovative academic, social, and research activities through a wide range of educational programs and projects in technical, pedagogical, natural, humanitarian, and social sciences.

The program pays special attention to sustainable development, including the implementation of environmentally oriented initiatives, rational use of natural resources, promotion of "green university" principles, energy saving, digitalization, and the introduction of sustainable management models within the university environment.

The program is based on the Concept for the Development of Higher Education and Science in the Republic of Kazakhstan for 2023–2029, adopted by the Government Resolution of the Republic of Kazakhstan No. 248 dated March 28, 2023. The Concept aims to ensure institutional autonomy, attract talented professionals to higher education institutions, and enhance the level of knowledge and competencies using modern educational programs based on advanced technologies and the economy of the future, while taking into account the needs of all stakeholders.

The Dulaty University Development Program incorporates modern trends. The revision of educational program content is carried out with regard to labor market demands. Innovative programs are being developed based on labor market foresight and stakeholder needs.

As part of shaping a sustainable educational environment, the university introduces courses and modules focused on sustainable development, climate change, green engineering, resource management, and environmental safety.

Dulaty University successfully develops competitive advantages that influence strategic priorities, objectives, and sustainable development.

The university's potential has grown and strengthened significantly year after year, as evidenced by international ranking agencies. Since 2023, Dulaty University has entered the QS World University Rankings for the first time, ranking between 1200–1401 among 1,500 selected universities. The evaluation is conducted among 16,000 universities worldwide, assessed by QS methodology based on 17.5 million scientific papers and expert opinions of over 240,000 academics and employers. In the QS Asia University Rankings 2024, Dulaty University ranks 601–650 (previously QS-EECA); in the QS Asia University Rankings 2024: Central Asia, it is ranked 30th. The university was also included in the Times Higher Education (THE) World University Rankings 2024 with the status of "reporter."

An important indicator confirming the quality of education is the university's high international rating from the European Scientific-Industrial Chamber (ARES-2020), where Dulaty University ranked 8th among 95 universities in Kazakhstan with an A+ category, improving its position by 25 points over the past five years. The ranking assessed high-quality teaching, scientific performance, and graduate employability.

Dulaty University comprises 1 college, 1 institute, 6 faculties, and 47 departments (51 in 2021, 52 in 2022), a scientific library, 2 museums, 2 research institutes, 10 research centers, a scientific and educational production center "Phytochemistry," and a research laboratory for engineering profile "Nanoengineering Methods of Research named after A.S. Akhmetov."

The university offers 182 educational programs: 103 bachelor's, 69 master's, and 10 doctoral programs.

Continuing education is actively developing. From 2018 to 2024, more than 50 advanced training programs were implemented in over 70 fields, involving more than 5,000 faculty and staff. More than 83 paid courses were organized, training over 2,800 individuals.

To ensure quality, the university has successfully passed institutional and specialized accreditation at the national level by NAAR and IAAR, and international specialized accreditation. The university has been in the TOP-10 of the national IAAR rankings for five consecutive years.

As of 2022, Dulaty University ranked 6th among the top multidisciplinary universities in Kazakhstan. According to the National Ranking of Pedagogical Universities by the Independent Agency for Quality Assurance in Education (IAAR), its educational programs hold leading positions. In the institutional ranking by NAAR in the field of "Pedagogical Sciences," the university ranks 3rd for bachelor's level and 3rd for the educational program "5B012300 - Social Psychology and Self-Knowledge."

In the national ranking on innovation and academic excellence by the Republican Ranking Agency of the Kazakhstan Association of Engineering Education (KAZSEE), the university entered the TOP-5 best multidisciplinary universities in the country. In the 2020 KAZSEE institutional ranking, it ranked 7th among Kazakhstan's multidisciplinary universities.

Graduate quality and employability are reflected in consistently high employment rates. On average, over 70% of graduates were employed from 2015 to 2024. In line with its strategic goal of accessible education, the university has a predominant number of students from rural schools.

One of the university's key priorities is attracting international students from both neighboring and distant countries, including Azerbaijan, Turkey, China, Mongolia, Uzbekistan, Kyrgyzstan, Russia, Korea, the United States, and countries of the Baltics and Europe.

Dulaty University successfully implements joint undergraduate and graduate programs with Lublin University of Technology (Poland), Altai State University (Russia), Braganza Polytechnic Institute (Portugal), Shadrinsk State Pedagogical University (Russia), and D.I. Mendeleev University of Chemical Technology of Russia (MUCTR).

Since 2023, a dual-degree program with MUCTR has been launched in the "2+1+1" format: two years of study at Dulaty University, one year at MUCTR, and one year at Kazphosphate. Seven students were sent to MUCTR for third-year network-based educational programs. The "Mendeleev Classes" project was also launched for 10th–11th grade school students in Taraz. A professional development, retraining, and internship plan was created for Dulaty University's teaching staff in Moscow. Core professional educational programs and curricula for bachelor's degrees were developed in the fields of "Chemical Technology" (Inorganic Substances Technology) and "Chemistry" (Analytical Chemistry). In September 2024, a branch of MUCTR opened in Taraz.

The university has successfully implemented 3 international Erasmus+ educational projects:

The first project focused on creating well-equipped and functional centers for leather production and product design (two in Uzbekistan and two in Kazakhstan). In 2023, the "Shoe Center" was opened at Dulaty University under this project.

HWCA Project – "Human Capacity Development for the Water Sector in Central Asia to Increase Climate Resilience and Support Sustainable Development, Peace, and Security."

TEX4FUTURE Project – "Textile Production of the Future in Uzbekistan and Kazakhstan."

Dulaty University has 85 educational and research laboratories equipped with modern equipment and licensed software, including a Cisco network lab. The university's innovation potential in educational and scientific activity includes organizational and human resources, material and technical base, scientific and methodological support, and research potential.

To address regional socio-economic problems, establish pilot industrial productions, and engage students in research and applied scientific activities, the university has created and maintains a number of research divisions.

Special attention is given to research aimed at sustainable use of natural resources, efficient water use, development of alternative energy sources, and recycling of industrial waste — all of which are directly aligned with the sustainable development agenda and the country's priorities. In 2024, university scientists A.A. Kabdushev and M.S. Kalmakhanova, with grant funding, plan to open: a laboratory for "Study of the Properties of Cementing Materials and Drilling Fluids" to address issues at the Amangeldy gas field (exploration and production by QazaqGaz), and a "Water Treatment and Materials" laboratory aimed at purifying water in the Zhambyl region.

An innovative structure operates in the field of research: the Research Institute for Building Materials Production, the Research Institute for Food Products, the Engineering Research Laboratory "Nanoengineering Research Methods named after A.S. Akhmetov," the Research Center "Environmental Problems of Sustainable Development," the Research Center "Dulatology and Regional History," the Research Center "Bauyrzhantanu," the Research Center "Senimdilik," the Center for Regional Studies, the Center for Physicochemical Research, the "Talas-Shu Folklore and Oral Literature" Center, the NPC "Tulpar," the NPC "Algorithm," the NPC "Creative," and the NPC "Phytochemistry."

University-based branches of professional scientific associations also operate: a branch of the National Academy of Mining Sciences of the Republic of Kazakhstan, a branch of the National Engineering Academy of the Republic of Kazakhstan, and a representative office of JSC "Kazakh Academy of Life Safety."

The university's research potential is evaluated based on R&D results achieved by scientists and specialists in solving various societal and economic problems at regional and national levels.

To attract domestic and foreign investors for the implementation of scientists' innovative projects, the university annually presents project proposals to the "Investor Services, Project Management, and Digitalization Center" of the Entrepreneurship and Industrial-Innovative Development Department of the Akimat of the Zhambyl region. These projects are aimed at solving regional problems related to industrial waste disposal, development of alternative energy sources, improvement of irrigation systems, and more. In 2024, more than 40 such projects were submitted.

These initiatives are aimed at achieving the goals of sustainable development and improving the environmental and economic resilience of the region.

Thus, Dulaty University not only maintains its status as a leading multidisciplinary university in the country but also acts as a catalyst for sustainable change in the region. Sustainable development has become an integral part of its strategy, reflected in the transformation of educational processes, scientific research, infrastructure, and partnership projects. The university is forming a responsible generation of professionals capable of effectively addressing environmental and social sustainability challenges in the future.

2. ENVIRONMENTAL SUSTAINABILITY

Environmental sustainability at Dulaty University is implemented as a cross-cutting strategy encompassing infrastructure, daily operations, education, and awareness. A central element of this strategy is the introduction of energy-efficient solutions, environmentally safe waste management practices, rational use of water and energy resources, and the development of sustainable thinking among students, faculty, and administrative staff.

The university recognizes its responsibility to society and future generations regarding the environment, particularly given the geographic location of the region, which is subject to climate stresses, including droughts, dust storms, and declining groundwater levels. The university aspires to be a model of ecological consciousness and sustainable infrastructure for educational institutions both regionally and nationally.

In 2024, the Department of Biology, in cooperation with the Department of Sustainable Development, conducted a comprehensive resource consumption audit, analyzing electricity,

water, paper use, and waste management across all 10 academic and administrative buildings. Based on the audit results, the following initiatives were implemented:

- Transition to energy-efficient lighting: over 500 lights were replaced with LED fixtures; motion sensors and automatic light shut-offs were installed in several rooms, reducing electricity consumption in academic buildings by 12%.
- Optimization of paper workflow: digital reporting, electronic signatures, and automation of internal requests reduced paper usage by 40%, equating to saving over 70 trees annually.
- Waste segregation: eco-boxes for paper, plastic, batteries, and organic waste were installed on every floor of administrative buildings. Training seminars and volunteer campaigns were held to promote waste sorting among students.

Particular attention is paid to campus biodiversity, as natural greenery not only enriches the visual environment but also contributes to a resilient micro-ecosystem in an urban setting. Within the framework of the "Community Gardens" project:

- Living hedges of juniper, rugosa rose, and cotoneaster—drought-resistant species—were planted.
- Flower beds were planted with local perennials such as echinacea, sage, and yarrow, requiring little watering and serving as food sources for pollinators.
- Landscape installations were created, including rock gardens and vertical green walls in the central part of the campus.
- Students participated in the design and maintenance of the plants, reinforcing practical application within environmental biology courses.

Additionally, pilot solutions for sustainable water use were implemented:

- A drip irrigation system was introduced on the experimental plot managed by the department.
- A project was developed for rainwater harvesting and filtration from building roofs for irrigation purposes.
- Aerator nozzles and dual-flush toilets were installed in restrooms, reducing water usage by 18%.

To foster environmental awareness, an annual "Eco Week" is held, featuring lectures, film screenings, creative competitions, and tree planting. In 2024, more than 300 students participated, along with invited guests—staff from nature parks, environmentalists, and specialists in sustainable construction.

Thus, environmental sustainability at Dulaty University is not treated as a one-off project, but as a systemic part of institutional culture, requiring constant assessment, innovation, and the engagement of all participants in the educational process.

3. SOCIAL SUSTAINABILITY

Social sustainability is a cornerstone of Dulaty University's institutional mission. The university's strategy emphasizes equity, accessibility, inclusivity, and the well-being of every member of the academic community. Dulaty University serves not only as an educational and research institution but also as a social actor impacting regional sustainable development, particularly through expanded educational opportunities and support for youth and vulnerable populations.

In 2024, the university developed and implemented specific programs aimed at strengthening social sustainability:

STUDENT SUPPORT PROGRAM FOR SOCIALLY VULNERABLE GROUPS

- Over 400 students from socially vulnerable categories (orphans, low-income students, students with disabilities) receive one-time financial assistance annually from the university and the board of trustees.
- Free access is provided to learning materials, library resources, and the university's Moodle platform.
- Emotional resilience training is conducted to help with academic adaptation and career guidance.

INCLUSIVE EDUCATIONAL ENVIRONMENT

- The campus features tactile paving, Braille information signs, ramps, and accessible restrooms.
- Lecture materials and presentations are being audio-recorded for visually impaired students.
- Online courses include subtitles and sign language interpretation in key disciplines.
- In 2024, 12 faculty members completed inclusive teaching certification in cooperation with the NGO "Inclusive Kazakhstan."

PSYCHOLOGICAL SUPPORT PROGRAM

- Two psycho-emotional relief rooms were opened, equipped with soft zones, sensory tools, and audio therapy devices.
- The number of psychologists increased to five, working full-time at the main academic building.
- Group training and workshops on stress management, burnout prevention, and time management are held regularly for students and staff.

GENDER EQUALITY

- A working group on equal opportunity was formed, comprising faculty, administrators, and student representatives.
- An internal gender audit revealed a 48/52% male/female student ratio, and a 43/57% ratio among faculty members.
- Seminars and mentoring sessions were held on "Women's Leadership in Science" and "Gender Justice in Education," featuring experts from Kazakhstan and Poland (partner: Lublin University of Technology).

VOLUNTEERISM AND STUDENT INITIATIVES

- Under the "Zhastar" movement, over 150 students participated in community service projects: helping orphanages and seniors, organizing environmental cleanups, and tree planting.
- The university implemented a credit system for participation in social and volunteer projects, which is also reflected in graduate recommendations.
- In 2024, joint training sessions with local NGOs were held for volunteers on topics such as mediation, conflict resolution, and crisis psychological support.

COMMUNITY ENGAGEMENT

- The university collaborates with the Taraz city administration, district education and labor departments, and employment centers for career guidance and early adaptation of rural school graduates.
- A mentorship project for schools in the Zhambyl Region is in place, with over 100 faculty and graduate students mentoring high schoolers.
- The university regularly hosts public lectures, career fairs, and open house days for students and parents.

Thus, Dulaty University views social sustainability as an integral part of its mission, applying a systemic approach to addressing inequality, inclusion, and student and staff well-being. The university is not just a place for acquiring knowledge, but a space for equal opportunity, social support, and active civic engagement.

4. EDUCATION AND SCIENCE FOR SUSTAINABLE DEVELOPMENT

Dulaty University's educational activities are being reimagined in response to global challenges of the 21st century—climate change, environmental degradation, growing inequality, digitalization, and labor market transformation. The university is implementing a value-based education model grounded in sustainable development, interdisciplinarity, inclusivity, and practice-oriented learning.

In 2024, sustainable development was systematically integrated into curricula, teaching materials, student research, and project activities. A new academic mindset is emerging, where students are not just recipients of knowledge, but co-creators of societal transformation.

KEY AREAS OF EDUCATIONAL TRANSFORMATION FOR SUSTAINABLE DEVELOPMENT:

- 1. Integration of the UN Sustainable Development Goals (SDGs) into educational programs:**
 - In 2024, 8 programs (bachelor's, master's, doctoral) were updated in: Ecology, Geography, Public and Local Administration, Food Technology, Construction, Chemical Technology, Pedagogy, and Biology.
 - Courses introduced include:
 - "Sustainable Development: Global Challenges"
 - "Environmental Ethics and Bioethics"
 - "Climatology and Adaptation"
 - "Ecotechnologies and Renewable Energy"
 - "Urban Sustainability and Green Architecture"
 - Methodological guides and practical manuals are being developed based on the SDG Compass and UNESCO's ESD 2030 framework.
- 2. Scientific research in the field of sustainable development:** In 2024–2025, three research projects were implemented with support from the Ministry of Science and Higher Education of the Republic of Kazakhstan (MoSHE RK), KAZGASA, and the international Central Asia Climate Initiative:
 - "Assessment of Climate Risks and Vulnerabilities of the Rural Population in Zhambyl Region"
 - "Use of Natural Entomophages for Biological Pest Control in Organic Agriculture"
 - "Food Security and Adaptation of Agro-Production to Climate Change"
 - 20 student researchers participated, 7 Scopus-indexed articles were published, 3 master's theses defended, and 2 patent applications submitted.
 - In 2024, Dulaty University applied for the "Green Skills Central Asia" regional program funded by the European Commission.

3. **Interdisciplinary student projects and applied case studies:** Practice-oriented initiatives bring together students, faculty from various departments, and external partners:
 - "Green Campus Through the Eyes of Youth": includes campus sustainability modeling, energy monitoring, landscaping, solar panel installation, and digitization of energy accounting. In 2024, the project received 4.2 million KZT in funding from Kazatomprom.
 - Urban eco-quest "Smart Taraz": students created interactive green zone maps and proposed ecotourism, waste sorting, and rainwater collection solutions.
 - "Eco-District Model": students from architecture and construction faculties built a 3D model of a zero-carbon district showcased at a national exhibition in Astana.
4. **Development of student initiatives and academic mobility:**
 - Over 10 student scientific clubs and labs operate, including:
 - "EcoYouth Lab"
 - "SDG Talks Club"
 - "GreenTech"
 - Monthly SDG debates, eco-film screenings, "Upcycled Creations" exhibitions, and sustainability hackathons are organized.
 - In 2024–2025, 8 student initiatives received business partner grants, including a startup converting plastic bottles into paving tiles.
 - In 2024, 12 students participated in academic mobility on sustainable development themes (to universities in Portugal, Turkey, Russia, and South Korea).
5. **Practical impact and long-term influence:**
 - Over 800 students in 2024–2025 completed SDG-related courses and modules.
 - 3 Dulaty University projects were included in the national registry of best sustainable development practices.
 - The university participates in Kazakhstan's "Green Universities" network, implementing campus eco-standards such as waste segregation, paperless workflow, and energy-saving technologies.
 - A Sustainable Development Competence Center is under development at the university, planned to launch in 2026.

Thus, Dulaty University's educational activities are becoming a catalyst for sustainable change. Students are empowered as active co-authors of solutions and agents of a new mindset—future-oriented, ecologically responsible, socially just, and innovation-driven.

5. GOVERNANCE

Reliable, transparent, and sustainable governance is the foundation for the effective implementation of the entire sustainable development strategy and a key condition for building trust among internal and external stakeholders.

Dulaty University is establishing a multi-level management system based on the principles of accountability, transparency, inclusiveness, and continuous improvement. This system encompasses strategic planning, operational implementation, monitoring, performance analysis, and feedback from students, faculty, partners, and society.

The main components of the university's sustainability governance system are:

1. Sustainable Development Committee. In 2024, a permanent Sustainable Development Committee was established. The committee includes representatives from:

- the teaching staff,
- the Department of Strategy and Quality in Education,
- the Student Council,
- the departments of Science, International Relations, IT, and Resources.

The Committee is responsible for:

- overseeing the implementation of ESG projects at faculty and center levels,

- assessing risks and vulnerabilities, including climate-related and social factors,
 - developing internal sustainability standards, codes of conduct and ethics,
 - annually presenting the "Sustainability Highlights: Dulaty Report."
- In 2024, the committee initiated the launch of an electronic platform to monitor SDG initiatives by faculty.

2. Annual ESG Audit. Since 2023, the university has conducted an internal ESG audit covering three key areas:

- **Environmental (E):** CO₂ emissions, energy efficiency, water consumption, waste recycling;
- **Social (S):** inclusivity, student and staff well-being, gender balance;
- **Governance (G):** process transparency, stakeholder engagement, anti-corruption measures.

Audit results:

- served as the basis for adjusting procurement policies, educational programs, and campus infrastructure;
- are used to integrate ESG indicators into the KPIs of faculties and departments;
- are included in the annual non-financial sustainability report, to be published on the university's official website in 2025.

3. Sustainable Procurement and Green Office Policy. In 2024, a Sustainable Procurement Regulation was developed and approved, which includes:

- giving priority to suppliers that meet ESG criteria,
- purchasing certified goods (FSC, Ecolabel, Energy Star),
- phasing out single-use plastic tableware in campus cafeterias and buffets.

The university signed an agreement with local solid waste recyclers and introduced separate waste collection bins in 6 academic buildings and 3 dormitories. Paper document usage has been reduced by 60% due to the transition to electronic archives, reporting systems, and workflow automation.

4. Digitalization and Data-Driven Management. Since 2023, the "Smart Dulaty Campus" project has been implemented, covering:

- electronic monitoring of resource usage (electricity, water, heating),
- electronic voting and surveys among students and staff on university development issues,
- Power BI dashboards for monitoring key ESG indicators,
- integration with EdTech and Moodle platforms to analyze student engagement.

A Monitoring and Quality Evaluation Center was also established to coordinate internal and external student satisfaction surveys, anonymous surveys on well-being, professional development, and discrimination.

5. Additional Elements of Reliable and Sustainable Governance.

- The **Code of Academic Integrity and Ethics for Sustainability**, updated in 2024, includes provisions on anti-discrimination, responsible resource use, prohibition of plagiarism, and ethical behavior in digital environments.
- The university introduced an internal mentoring and soft skills development system for faculty and administrative staff to enhance management culture and sustainable development competencies.
- A motivation and recognition system for contributions to sustainable initiatives is being implemented: the best faculties and projects are annually awarded in the categories "ESG Breakthrough of the Year," "Green Office," and "Inclusive Approach."

Thus, Dulaty University is forming an institutional culture of sustainability based not only on strategic declarations but also on clearly structured mechanisms, transparent procedures, and active participation of all stakeholders. This enables the university to be not only an academic institution but also a regional leader of sustainable transformation and an example of responsible and forward-thinking governance.

6. KEY PERFORMANCE INDICATORS (KPI)

KPIs allow you to quantitatively track the university's progress towards sustainable development and adjust the strategy if necessary. The indicators are formed on the basis of international recommendations (UN SDG, GRI, UI GreenMetric).

Indicator	Value for 2024
Green areas	5
Reducing energy consumption	-10%
Scientific publications on SDG	4
Students trained in SDG principles	235
Recycled paper and plastic	2 tons
Volunteer actions	12
Gender balance (teachers)	60% women
Number of new inclusive facilities	8

7. MAIN PROJECTS AND CASES

Sustainable development projects at Taraz University are practical in nature and cover a wide range of issues, from climate to agrobiosecurity.

Project: Community Gardens Objective: to create a green campus and involve students in landscaping and plant care. The project included planting fruit trees, flower beds with local plants, installing benches, and holding eco-lectures and master classes.

Project: LVI analysis of awareness and vulnerability of pastoralists The results formed the basis for proposals for climate risk insurance, ecotourism development and financial literacy in rural areas.

Project: Biological Plant Protection Implementation of IPM methods (integrated pest management) in the university's educational farms. Entomopathogenic fungi, crop rotation, biological insecticides are used.

8. PLANS FOR NEXT YEAR

- Development of the Green Campus 2025–2030 program
- Implementation of solar panels on administrative buildings
- Opening of the Center for Sustainable Agricultural Development
- Introduction of the online course “Fundamentals of Sustainable Development” for all students.
- Preparation and publication of the first report according to the GRI standard.