«Approved»
Al-Farabi Kazakh National University
Member of the Board – Vice Rector for the
Scientific and innovative activities
_____Zh. Aitzhanova
«___» _____2024 y.

# POLICY IN THE SPHERE OF PLASTIC WASTE MANAGEMENT AT THE UNIVERSITY

Almaty, 2024

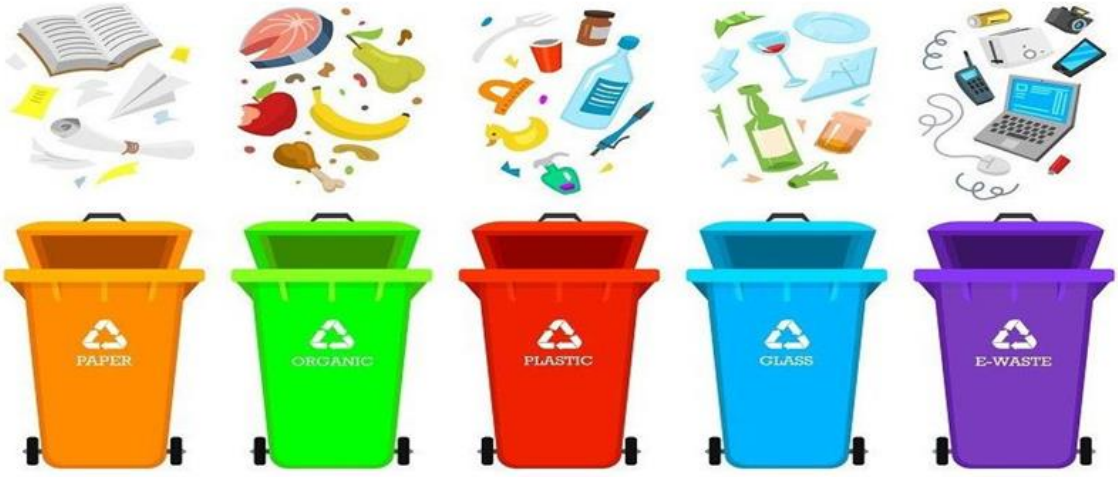
**Introduction**

Now, over 400 million tons of plastic produced per year. This figure is constantly growing and is predicted to double or even quadruple by 2050. More than 99% of all plastic in the world is made from oil, gas and coal — "dirty" non-renewable materials. If the rate at which plastic production is growing remains the same, by 2050 it will account for 20% of all oil consumed. The world leaders in plastic pollution are Coca-Cola, PepsiCo and Nestlé. A 2015 study showed that only 20% of the world's plastic waste is recycled. Scientists have calculated the decomposition rate of some types of plastic: Bag — 20 years. Coffee cup — 30 years. Drinking straw — 200 years. Plastic bottle — 450 years. Plastic cup — 450 years.

Since the invention of plastic, more than 8 billion tons of plastic products have been produced, and most of this has long been in landfills, slowly disintegrating into larger and smaller pieces. Tiny pieces of plastic fly away with air currents, washed away by water, fly with dust, settle on the bottom of reservoirs, on tree leaves and grass, and mix with soil.

Every year, 5-6 million tons of solid municipal waste are generated in Kazakhstan, which accounts over 480 thousand tons of plastic. In Kazakhstan, more plastic waste is collected than recycled: in 2018, only about 3% of plastic packaging waste was recycled. At the end of 2020, Kazakhstan environmentalists came up with a resolution: Kazakhstan needs a law on the recycling of household plastic.

Understanding the importance of the problem of plastic recycling and disposal, Al-Farabi Kazakh National University aims to support the initiatives of the state, environmental specialists, environmental organizations and public organizations. Reducing plastic and other waste on campus is an important task that contributes to environmental protection and the formation of a sustainable culture among students and staff.



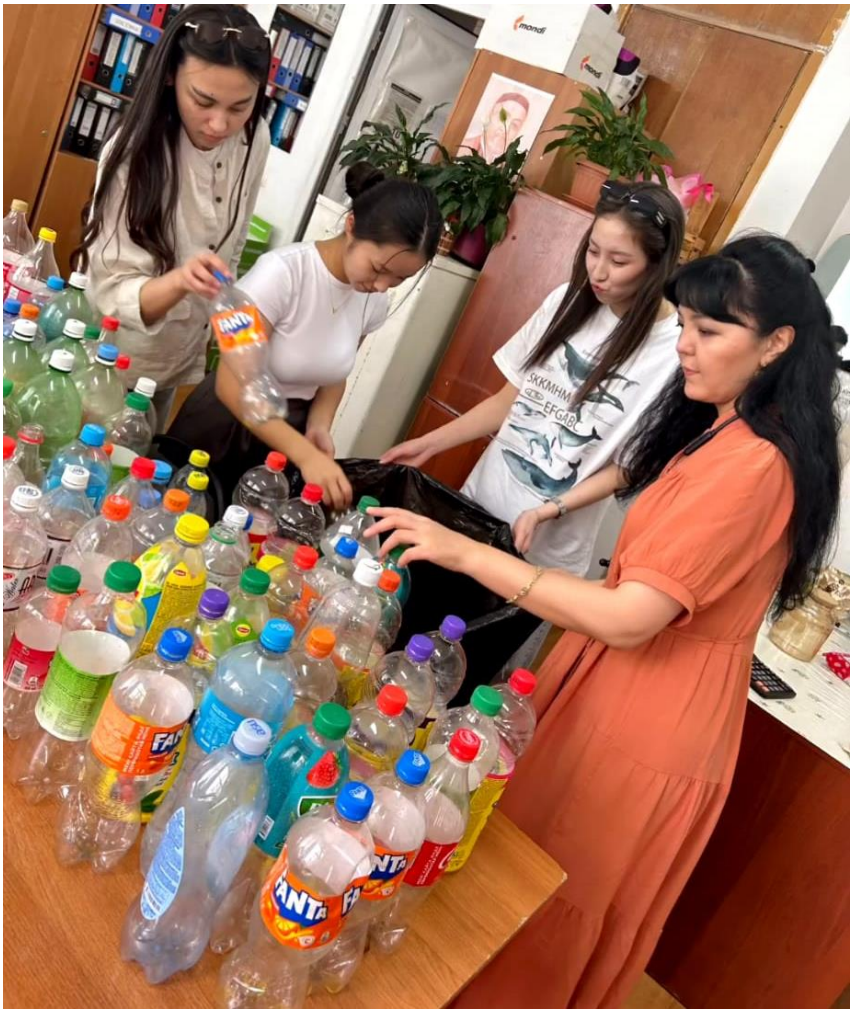
**VISION**

By 2035, the University in a partnership with government, sustainability leaders and its own communities, will be exemplary in its institutional response to the environmental emergency.

**UNIVERSITY MISSION:** To unite joint efforts and mobilize the intellectual potential of universities around the world to achieve low-carbon neutrality and implement plans to reduce plastic waste at the university, city and national levels.

**GOAL:** To transit KazNU campus into a platform for the implementation of technologies, development of competencies in the field of sustainable development, uniting students, scientists and the community around the tasks of reducing the active use of plastic, as well as its waste, promoting environmentally friendly and resource-saving technologies.

**ACTIONS:** Mobilizing joint efforts and using the accumulated scientific and managerial potential of universities to implement activities and projects to achieve sustainable development goals, especially SDG 12, which focuses on waste management issues, particularly the plastic.

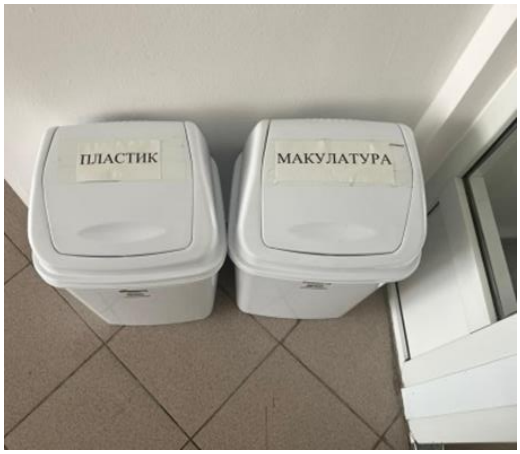


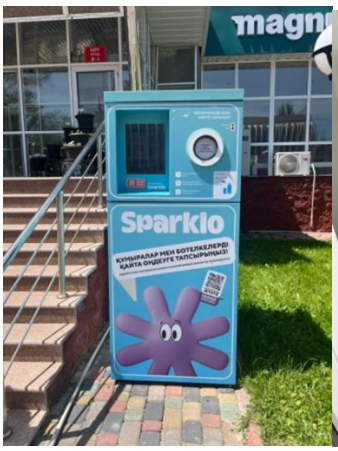
## KAZNU FOCUS

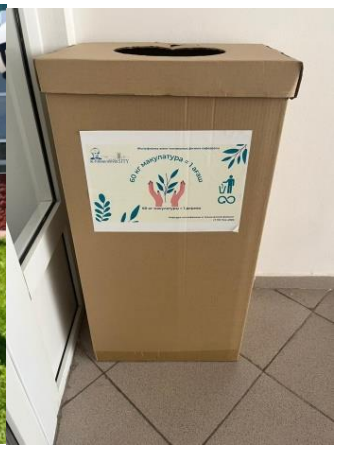
**Climate**

**Sustainable infrastructure**


**Responsible consumption and production**



# ACTION PLAN UNTIL 2035

## 1. EDUCATION

The key role of the education system, and therefore universities, in environmental awareness is that we are witnessing a growing integration of environmental issues into many disciplines and management systems. It is not only the question of curriculum delivery. This strategy affects university life in its entirety. It builds confidence that critically conceived knowledge, skills and realities can be exported to the rest of society, especially when supported by education and information campaigns on waste management.

The diversity and focus of the educational programs of the Al-Farabi Kazakh National Universit reflects its extensive experience in the field of research into the processes of excessive consumption of primary resources, environmental protection and achieving sustainability. Students and young scientists are offered internships and training courses related to the reduction of consumption of plastic and other materials, rational use of natural resources.

✓ Review of the content and implementation of existing modules and courses on a university-wide scale with the aim of increasing the content of the environmental protection and sustainable development component in the university's educational process;

✓ Development of innovative and expansion of existing educational programs on environmental protection, including plastic recycling;

✓ Expanding the coverage of the university's faculties and departments in the field of environmental protection and sustainable development;

✓ The University will continue to support the development of interdisciplinary educational programs and activities related to sustainable development;

✓ Improving the quality of human resource training and meeting the needs of society for professional personnel in the field of environmental protection and the formation of an up-to-date waste management system to increase the capacity of the economy;

✓ Expand existing opportunities for extracurricular learning about waste recycling and disposal methods, internship programs and short courses for all students.

## 2. SCIENTIFIC RESEARCH

Contribution to the implementation of sustainable development goals through carbon emission reduction and environmental protection research, which promote the acquisition of specific environmental and ethical standards, values and professional skills. Modernization and optimization of the educational and research process on environmental protection and sustainable development at the university.

● Increasement of projects and research works on plastic recycling, environmental protection and sustainable development (for example, development

of biodegradable safe tableware for the needs of the university).

- Develop infrastructure for conducting research works on environmental protection and sustainable development.
- Partnership promotion, coordination and collaboration among scientists in the field of environmental sustainability and achieving responsible consumption.
- Seek to influence the priorities of research funders to address research challenges in achieving the Sustainable Development Goals (especially SDG 12).
- Fund research into techniques and technologies aimed at reducing plastic waste and returning it to production cycles.
- Promote knowledge, events, research and projects on the replacement of plastic materials and their reuse among all groups of the population through the media and social networks.
- Resource-saving technology projects development and implementation.
- Implementation of startups on digitalization of plastic reduction processes.

## 3. SUSTAINABLE INFRASTRUCTURE

This block includes the following aspects:

**Rethinking** – moving away from the traditional consumption system to a new circulation system, in accordance with SDG 12;

**Rejection** – the desire to reduce single-use packaging;

**Waste reduction** – significantly reduce all types of waste on campus;

**Increasing the life cycle of things** – reusing high-quality things and repairing them;

**Sorting and recycling** – creating solid waste collection centers on campus;

**Youth engagement** – motivating and engaging students in waste recycling to form a sustainable culture;

**Creation of an Integrated Information Platform** – development of a centralized information platform accessible to all students, staff and university administration. The platform will provide information on waste sorting rules, waste collection schedules, recycling statistics and other useful resources;

**Installation of recycling containers** – placement of specialized containers and reverse vending machines for plastic waste in key locations on campus.

**Establishment of water charging stations** – drinking water fountains (purifiers) installation to reduce the consumption of plastic bottles;

**Collaboration with partner organizations** – Establish partnerships with environmental organizations for joint waste collection and recycling activities;

**Integration of scientific research** – development of waste management projects and startups by students and staff;

**Proper sorting training** – provide information materials on proper waste recycling and disposal (at Solid Waste Reception Centers);

**Monitoring and control** – monitor the functioning of the waste management system and impose fines for non-compliance with cleanliness (among students and employees).

## Systematization of actions

| № | Plastic Waste Reduction Area | Action | Deadlines |
|---|---|---|---|
| 1 | Organization of a centralized waste management system | Establishment of Solid Waste Reception Centers on campus | Until 2028 |
| 2 | | Development of a centralized information platform accessible to all students, staff and university administration; | Until 2028 |
| 3 | | Reuse and repair of quality items; | Until 2028 |
| 4 | | Continuously improve opportunities, programs and incentives for KazNU partners in the field of plastic reduction for generating income | Continuously |
| 5 | | Monitoring the operation of the waste management system | Continuously |
| 6 | | Introduction of fines for failure to maintain cleanliness | Until 2027 |
| 7 | Plastic waste management | Reducing single-use packaging | Until 2030 |
| 8 | | Reducing the use of disposable tableware | Until 2026 |
| 9 | | Encouraging the use of reusable tableware | Until 2026 |
| 10 | | Placement of specialized containers for plastic waste of various markings in key locations on campus | Until 2027 |
| 11 | | Placement of reverse vending machines for plastic waste (PET 1) in key locations on campus | Until 2027 |
| 12 | | Install drinking water fountains (purifiers) | Until 2026 |
| 13 | | Monitoring and control of food waste | Continuously |
| 14 | Integration of scientific projects of the university | Development of waste management projects and startups by students and staff | Continuously |
| 15 | Education | Provide information on proper waste recycling and disposal | |
| 16 | Media campaigns | Usage of social media, posters and email newsletters to spread information on sustainable waste management | Continuously |