



AL-FARABI KAZAKH NATIONAL UNIVERSITY

APPROVED

Member of the Board, Vice-Rector for
Research and Innovation
Aitzhanova Zh



CLIMATE ACTION PLAN



AL-FARABI KAZAKH NATIONAL UNIVERSITY

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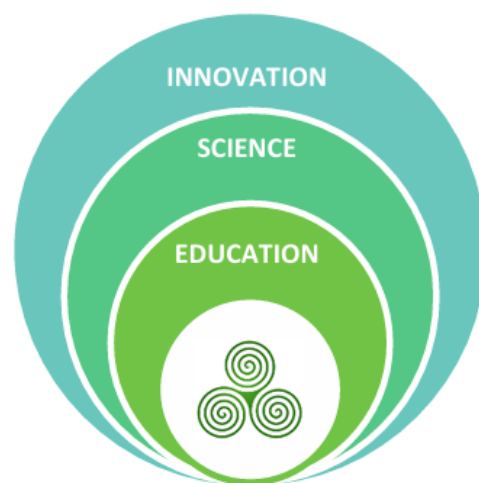


MEASURES TO IMPLEMENT CLIMATE POLICY

The University's Development Program for 2022-2026 defines goals and tasks that support the idea of achieving Sustainable Development Goals (SDGs) by providing comprehensive and equitable quality education in line with modern trends in higher education, promoting lifelong learning opportunities for all, and conducting innovative scientific research. The implementation of the University's climate policy is carried out in the following areas:

Reduction of carbon footprint

The carbon footprint caused by human activities has become one of the main challenges for our planet. Universities, as centers of knowledge and innovation, have a unique opportunity to take a leadership role in reducing their impact on climate change and lowering carbon emissions. The Carbon Footprint Reduction Program at Al-Farabi Kazakh National University is a step forward aimed at reducing the environmental impact of university activities and inspiring students and staff to adopt environmentally responsible behavior.



The implementation of the University's climate policy in the context of reducing the carbon footprint is presented through the following initiatives:

1. Improving the energy efficiency of buildings.

This direction involves a set of energy-efficient measures in all university buildings, including considerations for the installation of solar panels and enhancing heating and air conditioning systems. In particular, it is planned to:

- implement a set of measures to improve insulation and thermal protection of buildings, including conducting an audit of heat loss and identifying problematic areas, installing high quality insulation in walls and roofs, replacing windows with energy-efficient models, insulating doors and door frames, installing seals and thermostats, and more;
- enhancing the efficiency of heating and air conditioning systems. Within this approach, efforts will focus on increasing the efficiency of heating and air conditioning systems by replacing outdated systems with more efficient and modern models capable of precise temperature and ventilation control. Additionally, the implementation of automation and control systems is crucial for improving energy efficiency in buildings. Smart control systems should be introduced to effectively manage energy use and regulate lighting, heating, and cooling based on actual needs. Developing this direction requires continuous education and training for staff and students to enhance their awareness of energy efficiency and involve them in practical actions to reduce energy consumption;
- implement smart control systems to efficiently manage energy use and adjust lighting, heating, and cooling based on specific needs;
- install monitoring systems to track energy consumption, evaluate the results of our improvements, and adjust the strategy as needed;
- provide financial incentives to employees, students, and tenants to actively participate in reducing energy consumption, such as reducing rent for adhering to energy saving practices.



2) Sustainable Waste Management.

The university campus, as a place for education and the life of young generations, has a unique opportunity to serve as an example of sustainable waste management. The program for sustainable waste management in the university campus is a set of activities aimed at waste minimization, increasing recycling, and promoting student education in sustainability. The program for sustainable waste management in the university campus is aimed at achieving these goals and includes several key stages:

- conducting an audit to determine the volume and nature of waste generated on campus, including food waste, electronic waste, and other types of waste. Analyze existing waste management methods and their effectiveness;
- installing waste separation containers throughout the campus. Organizing educational programs for students and staff on waste sorting and separation rules;
- implementing a waste separation system at all levels of the University. Establishing a team to monitor and enforce sorting rules. Entering into long-term contracts with recycling companies. Creating university waste recycling incubators;
- limiting the use of single-use packaging and encouraging the use of reusable containers and tableware in cafeterias and dining facilities;
- providing students and staff with the opportunity to refill water in refillable bottles;
- implementation of a waste management monitoring system to track the volumes of collected, recycled, and disposed waste;
- regularly publishing reports on the progress of the program and the achieved results.



3) *Electric Vehicles and Public Transportation.*

The program for the use of electric vehicles and transportation in the university campus aims to reduce the carbon footprint by reducing the use of traditional internal combustion engine cars and promoting environmentally sustainable alternatives.

It involves the implementation of a series of measures, including:

- replacing the university's vehicle fleet: Gradually replacing traditional university vehicles with electric or low-emission hybrid models;
- providing financial incentives to university staff and students, such as discounts on electric vehicle purchases;
- developing charging infrastructure: Installing electric vehicle charging stations across the campus, including parking areas and public spaces, to ensure convenient and fast charging for all users;
- encouraging university staff and students to use public transportation, bicycles, and carpooling to reduce emissions from personal vehicles. Carpooling can be organized individually among friends and colleagues or using specialized online platforms and apps that help people find carpool partners with similar routes. This practice is one of the strategies to reduce the carbon footprint in the transportation sector and promotes more sustainable car use;
- supporting bicycle mobility. Creating safe and convenient bicycle lanes on campus. Providing bicycle rental options for students and staff and offering discounts on the purchase of eco-friendly transportation options.



4) Efficient resource utilization is achieved through the implementation of the "Eco Office" Program.

Inefficient office resource utilization is a characteristic that applies to many organizations. According to expert calculations, adopting an eco-friendly approach to office work can lead to monthly savings of \$500 for a staff of 15-20 people, and several thousand dollars for larger teams. When projecting these amounts over the course of a year, the savings become substantial.

The "Eco Office" is a management concept at the University aimed at reducing its negative impact on the environment through the efficient use of resources. The comprehensive "Eco Office" program includes both technical and motivational-educational initiatives, developing the University's environmental policy and fostering a responsible approach to office resources.

The creation of a green office is based on the concept of the 3R principles:

- 1) *reduction* – the principle of saving (reducing the consumption of electricity, water, and other resources);
- 2) *refinement* – the principle of reusing (reducing the amount of waste produced in the office);
- 3) *replacement* – substituting one product for another that is more environmentally friendly (minimizing the negative impact on the environment by making more responsible choices in selecting goods, services, etc.).



The University has developed its own "Eco Office" program, the originality of which has been confirmed by the corresponding patent from the Republic of Kazakhstan. This program is an integral part of our efforts to reduce the university's carbon footprint, promote environmental responsibility, and preserve nature for future generations. We invite all students, staff, and partners to join us in this important endeavor. Together, we can make a significant contribution to reducing the carbon footprint and make our university a place where environmental stewardship becomes a commitment for everyone..



5) Education and research

Education and research

The « Education and research » program in the university's climate policy aims to integrate education and research into the field of climate sustainability.

MAIN COMPONENTS OF THE PROGRAM

TRAINING COURSES AND EDUCATIONAL MODULES

- Includes the development and implementation of training courses and educational modules on climate policy, climate change and sustainability. As well as the integration of these courses across various faculties and specialties to provide a comprehensive education.

TRAINING IN CLIMATE RESEARCH

- It is based on supporting and incentivizing research projects and groups dealing with climate change, vulnerability reduction, and adaptation. Funds are allocated for research in the fields of climate, energy efficiency, and sustainability.

CONFERENCES AND SEMINARS

- An important component of KazNU's climate policy is the organization of conferences, seminars, and discussions on climate policy and related issues. This also includes engaging leading experts and researchers for presentations and knowledge exchange.

SUPPORT FOR STUDENT RESEARCH

- It is carried out through the creation of a program to support student research projects in the field of climate policy and the organization of scholarships and grants for students engaged in research in this area.

SUPPORT OF SCIENTIFIC AND EDUCATIONAL RESOURCES

- By creating online resources and a library of materials on climate policy for students and researchers. Constantly updating and expanding resources to support education and research.

COOPERATION WITH EXPERTS AND ORGANIZATIONS

- Establishing partnerships with leading climate scientists, environmental organizations and government agencies to provide access to expert knowledge and data. Participation in international research projects and climate policy initiatives.



Al-Farabi KazNU
is the only university in Kazakhstan that provides
training for meteorologists who work on climate
change issues in collaboration with the national
hydrometeorological service.

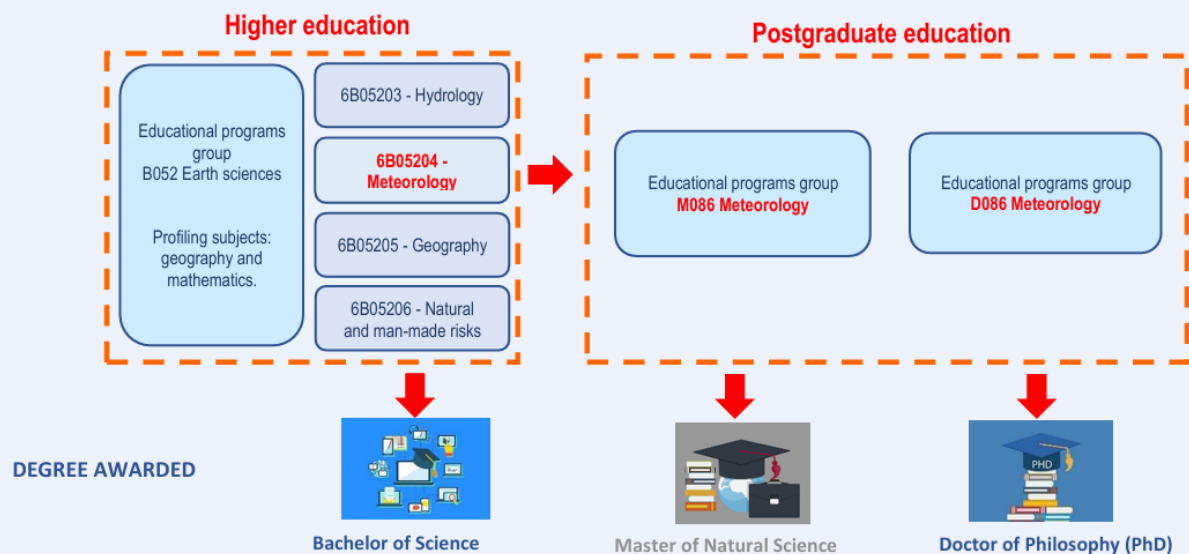


At present, the university offers meteorological training at three levels within the educational programs ("Meteorology"), which were developed and regulated by the guiding documents of the World Meteorological Organization (WMO). Special attention is given to global and national programs. These educational programs have undergone international accreditation by ACQUIN, and they are regularly updated and modernized.



**THE CONSERVATION AND ENHANCEMENT OF THE
SUSTAINABILITY OF NATURAL RESOURCES ARE KEYS
TO ENSURING A VIABLE FUTURE FOR LIFE.**

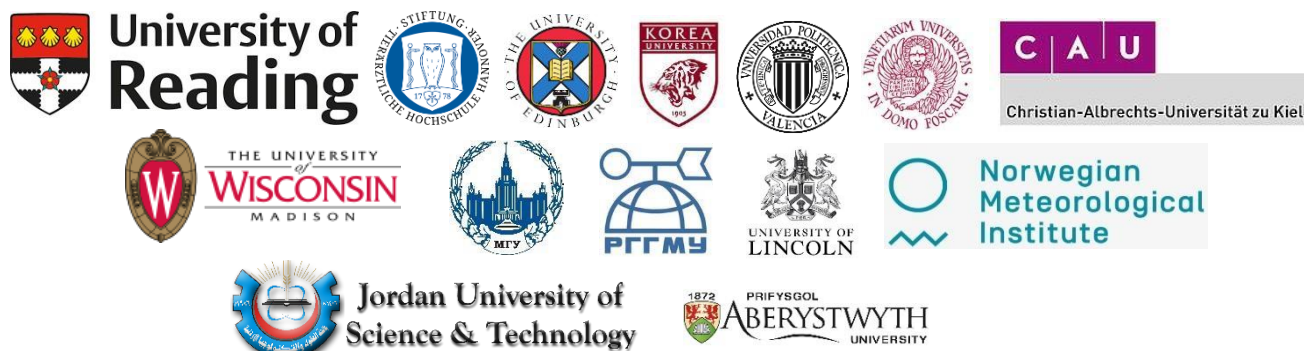
ALGORITHM FOR PREPARATION BY A METEOROLOGIST – SPECIALIST IN THE FIELD OF CLIMATE CHANGE



Domestic partners:



Foreign partners:



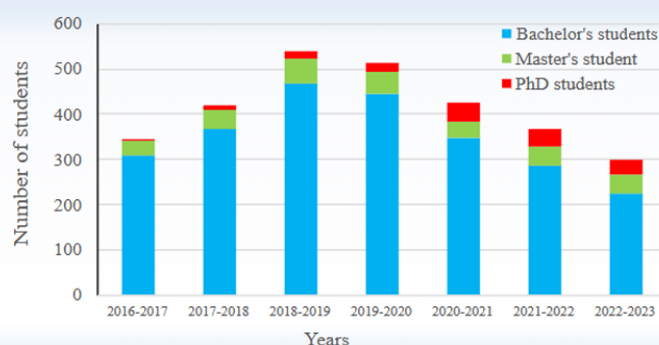


However, despite the strategic importance of training such specialists and the high quality of the "Meteorology" educational program (bachelor's degree), it does not have a guaranteed state-funded enrollment and is classified according to the Classifier of specialties of personnel training with higher and postgraduate education of 2019 in the group of educational programs "B052 Earth Sciences," the field of training 6B052 "Environment," along with programs such as "Hydrology," "Geography," and "Natural and Technogenic Risks." This significantly hinders the recruitment of motivated applicants who aim to dedicate themselves to the study of climate change and sustainable development.

In this regard, one of the strategic directions of the Climate Policy of Al-Farabi Kazakh National University is to work with the Ministry of Science and Higher Education of the Republic of Kazakhstan to secure guaranteed state-funded enrollment for the training of specialists in the educational programs "Meteorology" and "Hydrology" as indicated in the following table:

Code and classification of field of education	Code and classification of the area of training		Name of EP groups	Name of EP	Number of grants
6B05 Natural Science, Mathematics and Statistics	6B052	Environment	Hydrometeorology	Hydrology	150
				Meteorology	

The student body for the educational programs "Meteorology"



Al-Farabi Kazakh National University aims to enhance the theoretical knowledge and practical skills of students in various fields, with special attention to issues related to sustainable development. All training directions align with the goals of sustainable development.



CENTER FOR CLIMATE AND SUSTAINABILITY

Climate and sustainability research is being explored through the COMSATS Center for Climate and Resilience, established in 2018, which is a multi-stakeholder institute working through South-South, South-North, East-West and multi-stakeholder collaboration to bring innovative approaches to planning, financing and addressing climate change in accordance with the policies and practices of developing countries and their international obligations (<https://www.kaznu.kz/ru/19533/page/>).

The center focuses on the following tasks:

- enhancing scientific knowledge on climate change for appropriate climate action and advocacy;
 - assessing the impact of environmental and climate variability on livelihoods and economic development;
 - reducing impacts on the climate system by minimizing the carbon footprint and achieving carbon neutrality;
 - mitigation and adaptation to climate change for sustainable development; improving public knowledge and capacity building on climate change and environmental issues;
 - developing a knowledge bank of information and data for more effective evidence based policy making;
- developing regional and global partnerships to take effective action to ensure effective climate policy and sustainability.

To address these challenges, working groups have been established on key factors in the relationship between climate change and sustainability.

- The working group on "Climate Research and Impact Assessment" focuses on collaborative climate and ecosystem research necessary to combat climate change and achieve the long-term climate goals.
- The working group on "Climate Mitigation Actions" carries out activities aimed at preventing climate change in line with the Paris Agreement and long-term climate goals.
- The working group on "Climate Adaptation" has directed its attention towards adaptation planning and enhancing the resilience of vulnerable communities to climate change based on climate impact assessments.
- The working group on Science, Technology, and Innovation (STI) conducts sectoral assessments of technological needs in developing countries and facilitates the appropriate application of technologies for development and technology transfer.
- The working group on "Climate Governance and Policy Planning" focuses on integrating climate and environmental factors into various sectors of development, including energy, industry, agriculture, and transportation. It also emphasizes the dissemination of climate change mitigation and adaptation measures based on scientific data.
- The working group on "Climate Financing" assesses financial needs in the areas of climate change mitigation and adaptation and seeks funding from international financial organizations to implement planned activities.

- The working group on "Knowledge Management and Capacity Building" places particular emphasis on knowledge management, knowledge sharing, best practices, and capacity building.

- The working group on "Communication and Awareness" is aimed at informational and educational activities to enhance understanding of climate change and risks in support of sustainable development.

The working group on "Partnerships through Collaboration" promotes the development of cross-sector partnerships at national, regional, and global levels to intensify efforts in climate change action and sustainable development.

The University also strives to support research that promises to have a real impact on climate change mitigation.



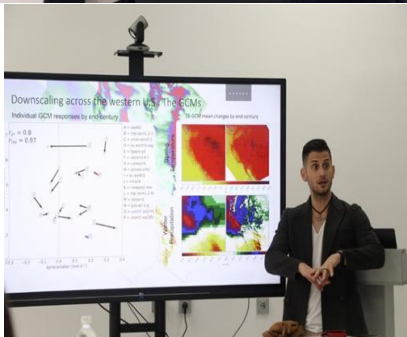
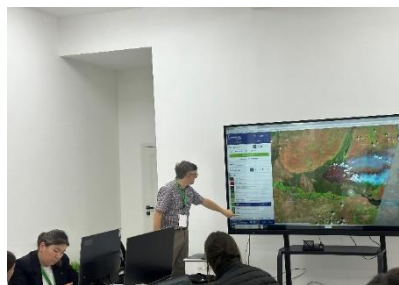
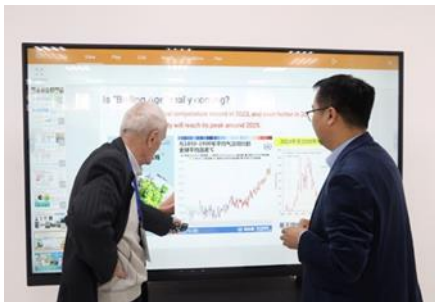
CLIMAT AND MODELING LABORATORY

The university is also committed to supporting research that promises to have a real impact on the climate change mitigation.

Laboratory objective: To study the manifestation of regional climate change on the territory of Kazakhstan.

Scientific Directions and Objectives:

- Regional climate change;
- Climate change in mountainous terrain;
- Climate change and water resources;
- Climate change and climate risk assessment for biodiversity;
- Climate modeling (CMIP 5);
- Economic modeling (COPERT MODEL, new direction);
- Climate change and adaptation (loss and damage).
- Expedition research;
- Improvement of environmental legislation;
- Expertise of offset projects;
- Analytics;
- Participation in the work of state “Working Groups” in the areas of: Climate Change, Transportation, Oil and Gas Methane Reduction, Methane Reduction from Coal Mining.



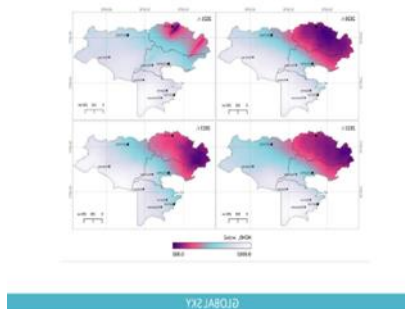
GLOBALSKY LABORATORY



The Atmospheric Research Innovation Laboratory was established to develop and implement advanced technologies and methods to better understand atmospheric processes, predict weather and the effects of climate change, and create innovative solutions for sustainability and air quality management.

The laboratory's activities focus on several very important areas for the country's economy:

1. Study of atmospheric hazards and risks associated with the effects of global and regional climatic changes, such as droughts and jute, thaws and severe frosts, and establishment of their early warning system.
2. Exploring the dynamics of the available potential of alternative energy sources in the context of reducing the carbon footprint to achieve carbon neutrality.
3. Study and testing of new methods of active influences on atmospheric processes.
4. Study of modern problems of atmospheric air pollution in order to create a system of its quality management.



PAN-EURASIAN EXPERIMENT (PEEX) PROGRAM



The PEEX “Pan-Eurasian Experiment” program is a multidisciplinary climate change, air quality, environment and research infrastructure initiative focused on the Northern Eurasian particularly arctic and boreal regions. It was founded by several European, Russian and Chinese research organizations and institutes. <https://www.atm.helsinki.fi/peex/>.

Al-Farabi KazNU since August 2024 joined the PEEX Programme ‘Pan-Eurasian Experiment’. It provides participation in joint international scientific projects, internships for bachelors, masters and doctoral students, training and participation in seminars of scientists and students of Al-Farabi KazNU.



ORGANIZATIONAL RESEARCH TOOLS ON CLIMATE CHANGE AND ACHIEVEMENT OF SDGs

CLIMATE RESEARCH CLUSTERS

The main task of these clusters will be to coordinate interdisciplinary research on complex climate issues, providing valuable and practical solutions.

Clusters will consist of interdisciplinary, cross-faculty groups of researchers whose diverse expertise is necessary to address the complex problems they aim to solve. These problems are so extensive that their solutions represent significant progress in addressing the global climate issue.

CLIMATE CHANGE ADAPTATION ACTION ACCELERATOR

It will serve as a resource and partner for all stakeholders tackling the most complex and contentious climate challenges, building consensus for research-based and best-practice climate solutions.

The accelerator will identify critical climate issues, discover promising solutions, and bring together a wide range of stakeholders with the authority and resources for action. It will be impartial, flexible in addressing emerging issues, and will trust stakeholders to facilitate dialogue on important and sensitive topics.

The Education and Research Program in the university's climate policy is an important mechanism for preparing future generations to tackle climate challenges and develop innovative solutions for a sustainable future.

Communities and collaboration

Community and collaboration play a crucial role in developing and implementing sustainable solutions, as well as supporting public initiatives in the university's climate policy. These aspects have a strong impact on shaping the educational and research environment and achieving sustainable goals.

Firstly, the university community plays a pivotal role in creating awareness and motivation among students and staff. Climate education and research are enhanced by active student engagement and their involvement in public initiatives. The university's climate policy supports these efforts by providing a platform for knowledge and experience sharing.

Secondly, collaboration with external organizations, community groups, and climate experts facilitates the exchange of resources and expertise. This enables the



university to develop and implement more effective and sustainable solutions while also providing support for external climate initiatives.

Thus, the role of community and collaboration in the university's climate policy is to ensure active participation, knowledge and experience exchange, and the establishment of strong links between educational and research institutions and external partners. These elements collectively contribute to the development and implementation of sustainable solutions and the support of climate initiatives aimed at addressing climate change and ensuring a sustainable future.

Conscious consumption

Conscious resource consumption and sustainable practices in everyday life and workplaces play a fundamental role in the university's climate policy. Universities, as centers of education, research, and innovation, have the potential to have a significant impact on reducing the carbon footprint and shaping a sustainable culture.

Firstly, conscious resource consumption includes the careful and responsible use of energy, water, materials, and other resources both in the workplace and in the daily lives of students and staff. This helps reduce the university's carbon footprint and fosters an environmentally responsible culture.

Secondly, promoting sustainable practices in workplaces and daily life involves the implementation of innovative technologies and methods aimed at reducing resource consumption and greenhouse gas emissions. This may include the use of efficient lighting systems, water-saving technologies, waste sorting and recycling, and other measures.

Universities can play a significant role in shaping environmentally sustainable lifestyles and work practices and raising awareness about climate challenges. By encouraging and supporting sustainable practices, universities aim to become leaders in the efforts to combat climate change and inspire students and staff to actively participate in this process.



Inclusion and equality

Inclusivity and equality play a significant role in the university's climate policy, making it more effective, fair, and responsive to the diverse needs of the student and faculty community. This is expressed through:

1. ***Equal participation in decision-making.*** Involving students and staff from various cultural, social, and economic backgrounds in decision-making processes related to climate policy allows for the consideration of diverse perspectives and interests. This contributes to the development of more balanced and inclusive strategies.

2. ***Accessibility of knowledge.*** The university aims to provide equal access to educational and research resources related to climate change. This includes educational

materials, lectures, research, and training programs for all, regardless of their financial status or physical ability.

3. **Inclusivity in research.** Encouraging and supporting research projects that analyze climate challenges with consideration for socio-cultural aspects leads to a deeper understanding of the impact of climate change on different population groups and the development of more precise mitigation strategies.

4. **Education and enlightenment.** We aim for the university's educational programs to emphasize aspects of social justice and equality in the context of climate change. This helps students develop critical thinking and consider diverse perspectives when analyzing issues.

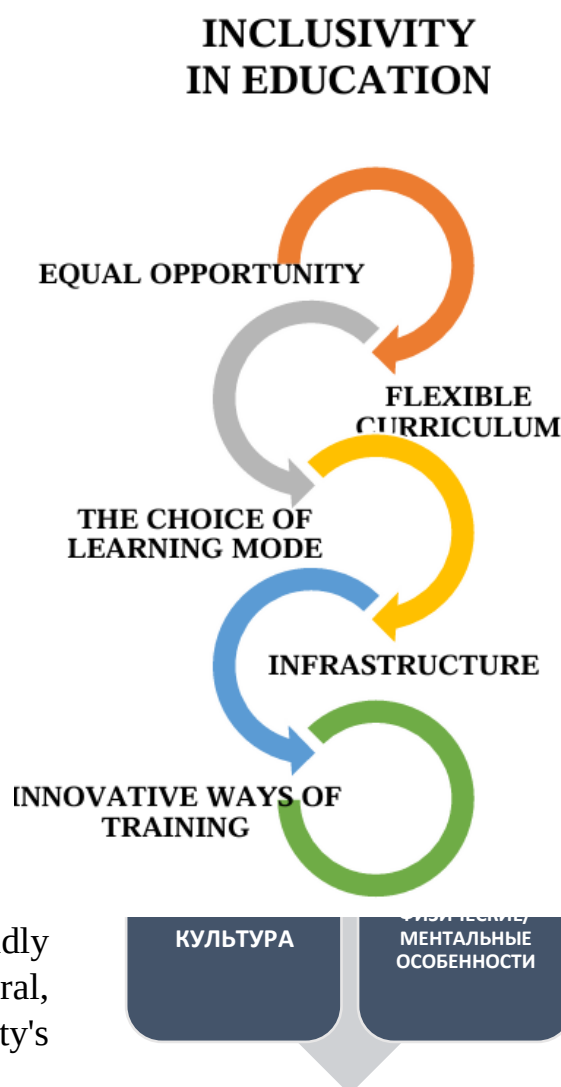
5. **Access to opportunities and support.** We also strive to provide access to financial support programs and scholarships for students who are active in climate policy, regardless of their financial status.

6. **Combating discrimination.** Universities actively oppose discrimination and provide a safe and supportive environment for all members of the university community, regardless of their race, gender, sexual orientation, or identity. Inclusivity and equality in the university's climate policy ensure that measures to reduce carbon footprints and adapt to climate change do not discriminate. These principles also help create a stronger and more cohesive university community capable of effectively addressing global climate challenges.

An inclusive culture at the university is characterized by a tolerant, humane, and safe relationship among all participants in the educational process, including the university leadership, faculty, and students. In this culture, the value of each individual serves as the foundation for collective achievements.

The formation of an inclusive culture at the university contributes to the creation of a friendly environment, which positively affects the moral, ethical, socio-economic indicators of our university's development.

Each of us comes from different nationalities, age groups, and we also form our habits, change our appearance, family status, and gain practical experience. It is in this diversity that our value lies. KazNU seeks to identify the uniqueness of each individual and leverage the diverse combination of talents for the sustainable development of society.





Thus, the university's climate policy not only shapes the educational and research environment but also has a significant impact on society, the economy, and the environment, contributing to a more sustainable and responsible future for all.