MINGACHEVIR STATE UNIVERSITY

MINGACHEVIR STATE UNIVERSITY

Report

6 CLEAN WATER AND SANITATION

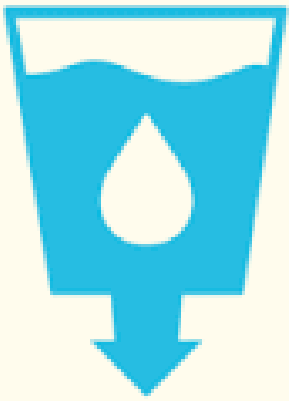
+994 242753272
www.mdu.edu.az
www.sustainable.mdu.edu.az
Dilara Aliyeva street 21.
Mingachevir, Azerbaijan

TABLE OF *Contents*

At a glance

GENERAL INFORMATION ON THE SDG

6 CLEAN WATER AND SANITATION



The United Nations Sustainable Development Goal 6 (SDG 6) – Clean Water and Sanitation, established in 2015 within the framework of the 2030 Agenda for Sustainable Development, represents a comprehensive and multidimensional commitment to ensuring the availability, accessibility, and sustainable management of water and sanitation resources for all segments of society.

This goal reflects the global recognition that water is not only a basic human necessity but also a fundamental driver of public health, environmental sustainability, economic productivity, and social equity. Accordingly, SDG 6 extends far beyond the provision of safe drinking water and encompasses a wide range of interrelated objectives, including improving water quality, reducing pollution levels, minimizing the release of hazardous substances, expanding wastewater treatment systems, promoting safe water reuse practices, and protecting water-related ecosystems such as rivers, lakes, and groundwater reserves.

In addition, SDG 6 prioritizes the achievement of universal and equitable access to safe and affordable drinking water, as well as adequate sanitation and hygiene services by 2030. It also emphasizes increasing water-use efficiency across all sectors, including agriculture, industry, and domestic consumption, while promoting the implementation of integrated water resources management at local, national, and transboundary levels.

Access to clean water and sanitation is fundamentally linked to human health, well-being, and quality of life. Despite notable progress at the global level, a significant proportion of the world's population continues to face challenges in accessing safe drinking water and basic sanitation services. This situation contributes to the spread of waterborne diseases, increases health-related vulnerabilities, and exacerbates social inequalities.

Within this context, higher education institutions play a vital role in advancing the objectives of SDG 6 through education, research, and community engagement. Academic programmes and courses in fields such as environmental science, ecology, and sustainable resource management contribute to the development of students' knowledge, skills, and competencies related to water conservation, pollution control, and sustainable environmental practices. At the same time, universities are increasingly adopting practical and operational measures aimed at improving water efficiency, reducing water consumption, preventing waste, and ensuring high standards of sanitation and hygiene across campus facilities. Awareness-raising initiatives, including seminars, workshops, campaigns, and student-led projects, further contribute to fostering a culture of environmental responsibility and sustainable behavior among students, academic staff, and the wider university community.

SDG 6 is inherently interconnected with multiple other Sustainable Development Goals, particularly those related to health and well-being (SDG 3), quality education (SDG 4), poverty reduction (SDG 1), and climate action (SDG 13). The challenges associated with water scarcity, declining water quality, and unequal access are further intensified by global trends such as climate change, rapid population growth, and urbanization. These dynamics increase pressure on existing water resources and highlight the urgent need for integrated, innovative, and sustainable water management solutions at both local and global levels. Ensuring access to clean water and sanitation is therefore not only essential for protecting natural ecosystems but also for promoting social justice, reducing inequalities, and achieving long-term economic stability.

In this regard, Mingachevir State University demonstrates a strong institutional commitment to the principles of sustainable development by actively integrating SDG 6 into its strategic priorities, academic activities, and operational practices. The university promotes responsible water consumption, environmental protection, and sustainability awareness through a combination of curriculum development, interdisciplinary research initiatives, and campus-based sustainability practices. Furthermore, the institution seeks to strengthen collaboration with governmental bodies, industry partners, and international organizations to support innovative solutions in water management and to contribute meaningfully to regional and national sustainable development efforts. Through these integrated and forward-looking approaches, the university not only enhances its educational and research capacity but also reinforces its role as an active contributor to the achievement of SDG 6 and the broader sustainable development agenda.

POLICY AND STRATEGIC ALIGNMENT

Mingachevir State University has established a comprehensive policy framework that supports the implementation of SDG 6 – Clean Water and Sanitation through its broader sustainability agenda. The university's policy ecosystem integrates environmental protection, efficient resource management, and sustainable campus operations. According to the university's official sustainability and policy platforms, several institutional policies directly and indirectly contribute to SDG 6 implementation. These include:

Clean Water Policy – https://sustainable.mdu.edu.az/wp-content/uploads/2026/03/Clean-Water-Policy.pdf

Environmental Policy – https://sustainable.mdu.edu.az/wp-content/uploads/2026/03/Environmental-Policy.pdf

Sustainable Development Policy – https://sustainable.mdu.edu.az/wp-content/uploads/2026/03/Sustainable-Development-Policy.pdf

The 2030 Development Strategy of Mingachevir State University defines the university's long-term development priorities while positioning sustainability and environmental responsibility as key pillars of its institutional framework. Within this context, SDG 6 – Clean Water and Sanitation occupies an important place in the university's strategic vision, and activities related to the protection, efficient use, and sustainable management of water resources are systematically supported. The transition toward a "green university" is presented not merely as a conceptual ambition, but as a structured development pathway supported by concrete actions and governance mechanisms.

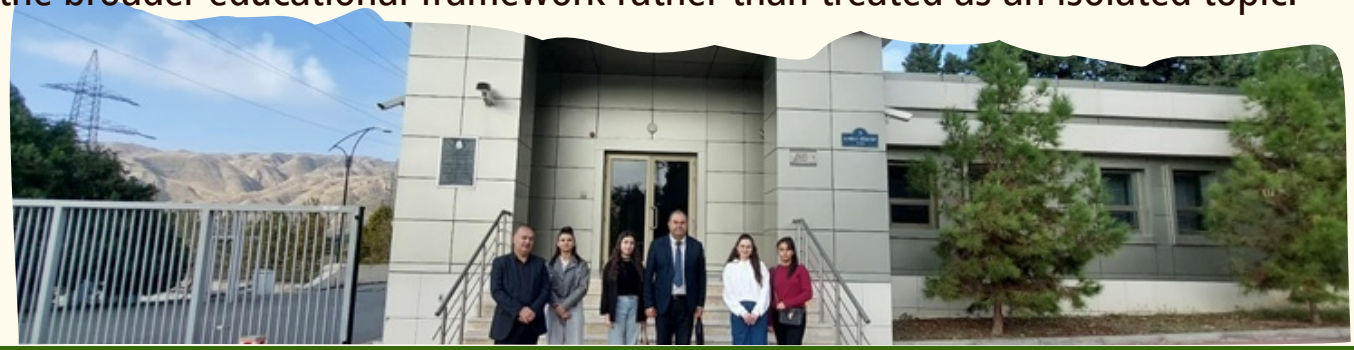
IMPLEMENTATION AND MAIN ACTIVITIES

3.1 TEACHING AND LEARNING

Mingachevir State University integrates SDG 6 – Clean Water and Sanitation into its teaching and learning activities through a range of academic programs and subject areas related to environmental protection, resource management, and sustainable development. Within relevant disciplines such as environmental engineering, ecology, energy systems, and related technical fields, students are introduced to key topics including water quality management, water resource protection, wastewater treatment, and sanitation systems. These courses are designed not only to provide theoretical knowledge but also to develop practical competencies required to address real-world environmental challenges. Particular attention is given to themes such as sustainable water use, the impact of climate change on water resources, pollution control, and environmental risk assessment.

SDG 6-related topics are not limited to standalone courses but are systematically integrated into various academic programs across the university. This interdisciplinary approach allows students to understand water and sanitation issues from multiple perspectives, including technical, environmental, and socio-economic dimensions.

In engineering-related programs, students are exposed to subjects such as water supply systems, filtration technologies, hydraulic infrastructure, and efficient water usage methods. In parallel, other disciplines incorporate sustainability principles, environmental awareness, and responsible resource management into their curricula. This ensures that SDG 6 is embedded across the broader educational framework rather than treated as an isolated topic.

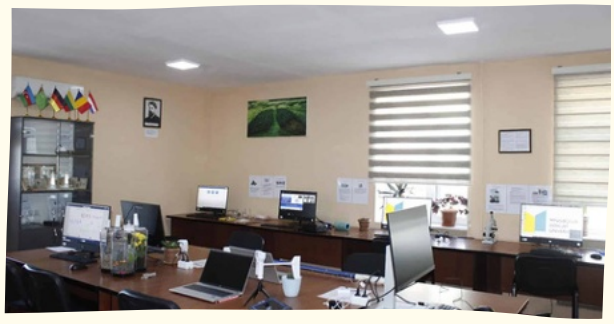


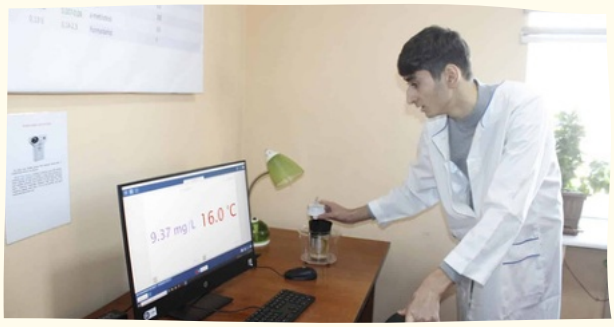
3.2 RESEARCH

Mingachevir State University actively contributes to SDG 6 – Clean Water and Sanitation through research activities focused on sustainable water management, environmental protection, and pollution reduction.

Research projects conducted within the university often emphasize practical solutions for improving water efficiency and reducing environmental risks. Particular attention is given to regional environmental conditions, including water resource management in the Kura River basin and surrounding ecosystems, which are of strategic importance for Azerbaijan.

Research activities related to SDG 6 are integrated into project work, research assignments, and independent study tasks at both bachelor's and master's levels. Students conduct research in areas such as water quality analysis, wastewater management systems, environmental risk assessment, and the sustainable use of water resources. These studies contribute both to the expansion of scientific knowledge and to the development of practical solutions to local environmental challenges. At the same time, this process supports the training of a new generation of professionals and helps develop their professional competencies in the field of water and sanitation.





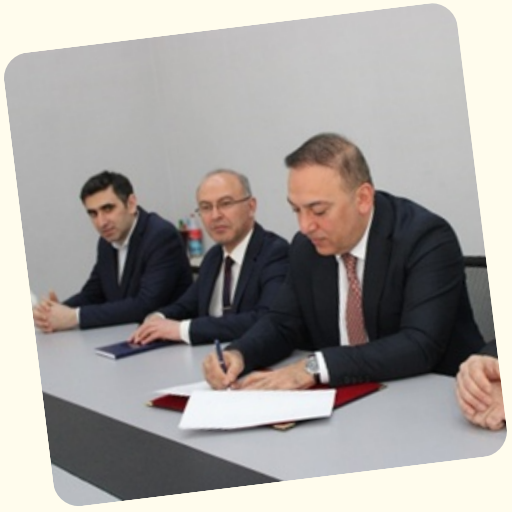
Research activities at the university are supported through relevant laboratory facilities and engineering infrastructure. These laboratories provide practical research opportunities in areas such as environmental monitoring, water quality analysis, and ecological assessment.

Although there is no separate laboratory exclusively dedicated to water studies, SDG 6-related research is conducted within the existing engineering and environmental science laboratories. This infrastructure enhances the quality of scientific work carried out by both students and academic staff and supports the development of applied research activities.

3.3 SOCIAL AND INDUSTRIAL ENGAGEMENT

Mingachevir State University actively contributes to the achievement of Sustainable Development Goal 6 (SDG 6) through strong collaboration with industry partners, public institutions, and local communities. The university integrates academic knowledge with practical experience and social responsibility to promote sustainable water management, sanitation, and environmental protection at both regional and national levels.

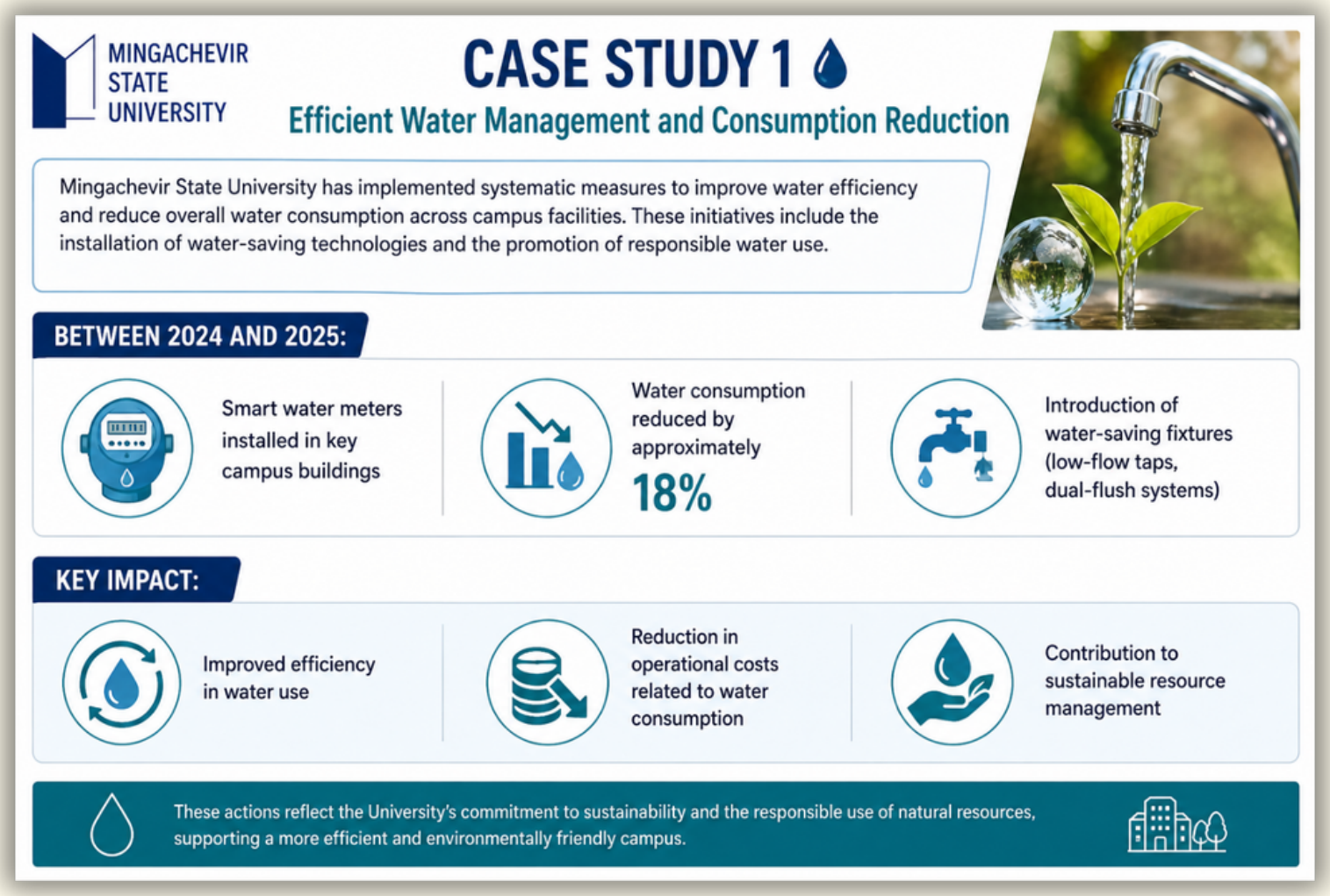
A significant example of this approach is the Memorandum of Understanding signed between MSU and "Mingachevir Hydropower Plant Cascade" LLC. Within the framework of this cooperation, the university delegation visited the enterprise, gaining firsthand insight into production facilities, technological processes, and approaches to water and energy resource management. This collaboration plays an important role in strengthening university–industry linkages, particularly in the efficient and sustainable use of water and energy resources.



MSU's collaboration model also focuses on updating curricula in line with labor market demands, increasing practice-oriented learning, and fostering sustainable human capital development. These efforts directly contribute to SDG 6 priorities, including efficient water use, pollution reduction, and environmental sustainability.

Overall, the strategic partnership between Mingachevir State University and "Mingachevir Hydropower Plant Cascade" LLC demonstrates the university's commitment to integrating education, research, and industry engagement in support of sustainable water and energy management, as well as regional ecological resilience.

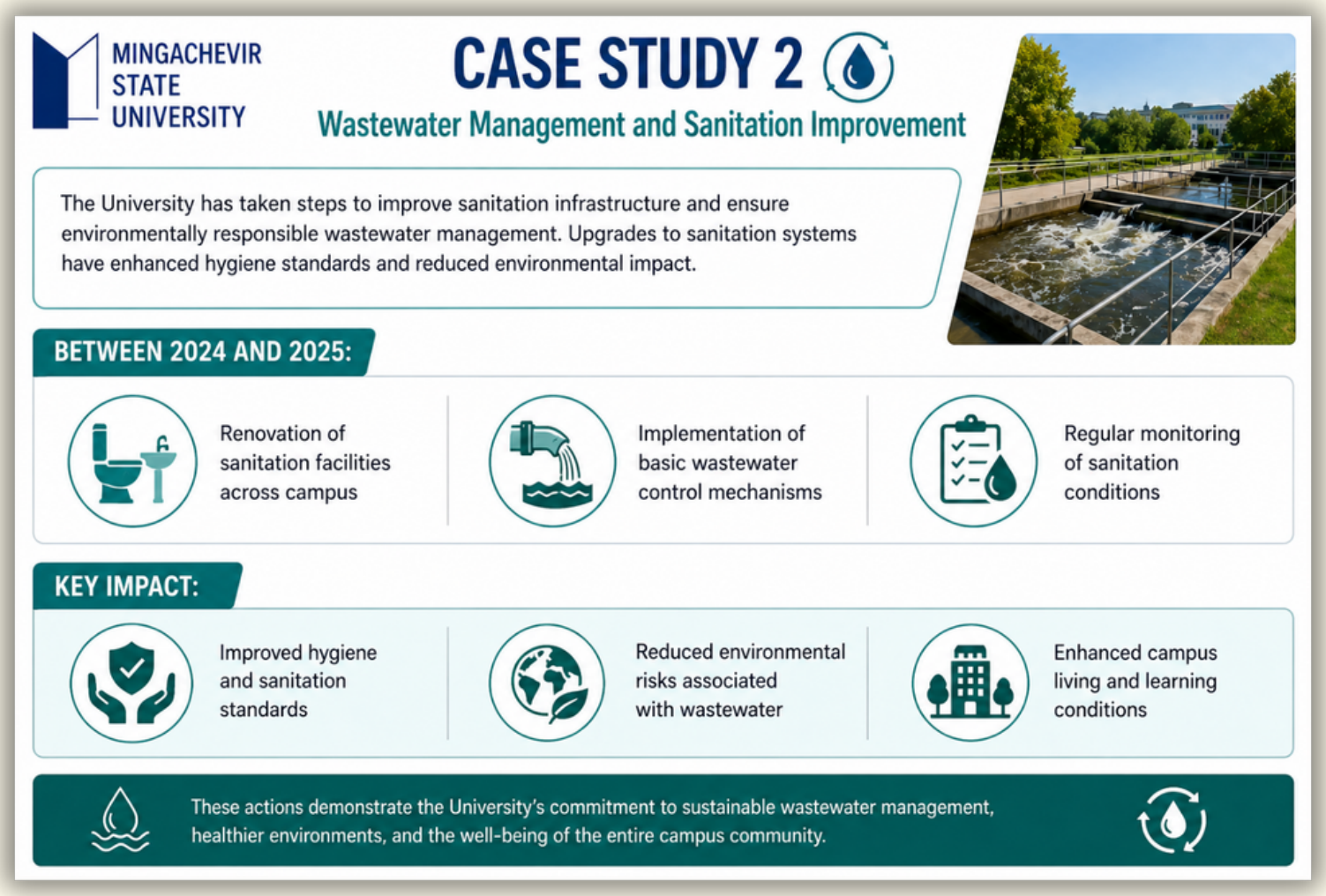
3.4 CASE STUDIES: SDG 6 IN PRACTICE



Case Study 1: Efficient Water Management and Consumption Reduction

Mingachevir State University has implemented systematic measures to improve water efficiency and reduce overall water consumption across campus facilities. These initiatives include the installation of water-saving technologies and the promotion of responsible water use.

3.4 CASE STUDIES: SDG 6 IN PRACTICE

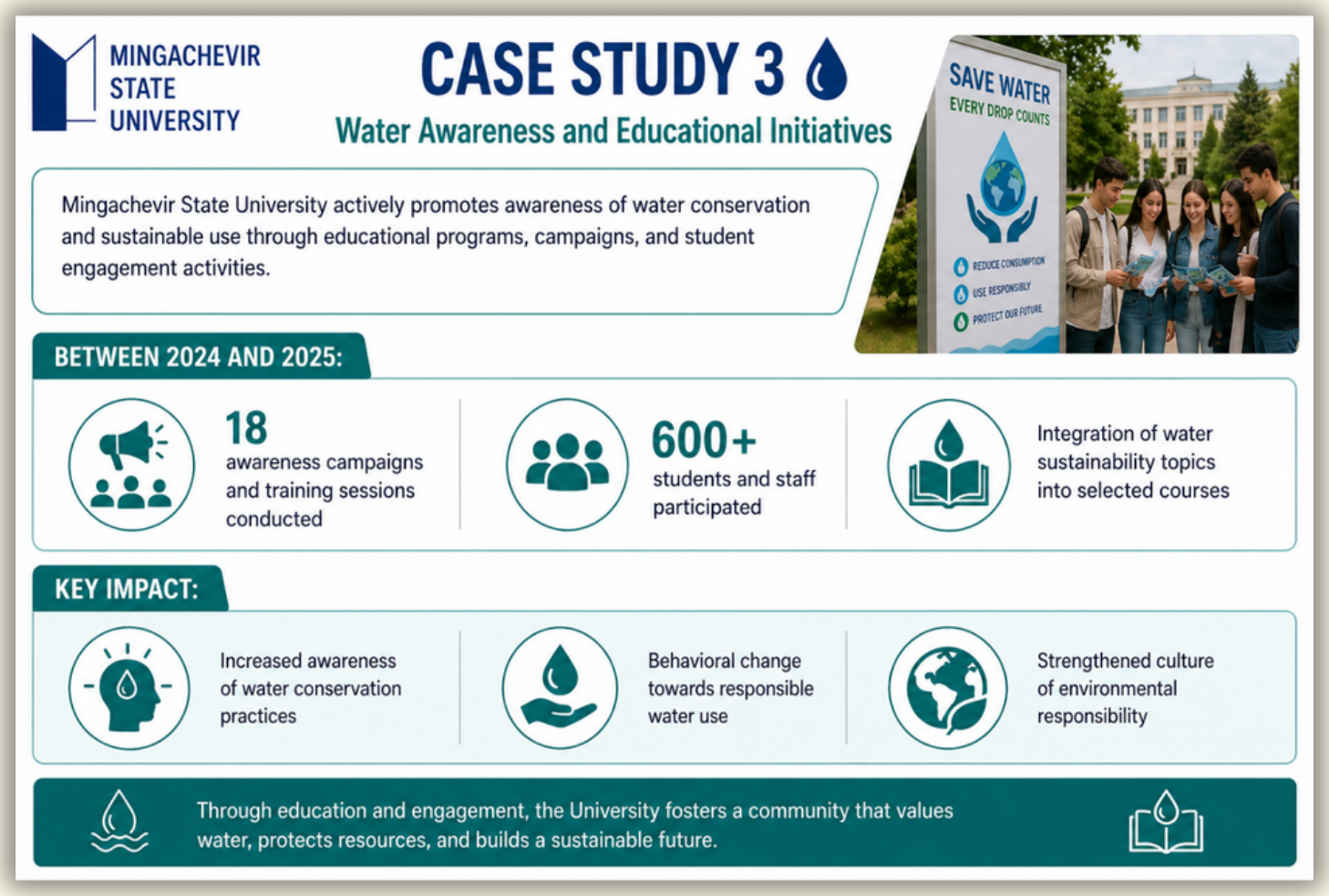


The University has taken steps to improve sanitation infrastructure and ensure environmentally responsible wastewater management. Upgrades to sanitation systems have enhanced hygiene standards and reduced environmental impact.

Key Impact:

- Improved hygiene and sanitation standards
- Reduced environmental risks associated with wastewater
- Enhanced campus living and learning conditions

3.4 CASE STUDIES: SDG 6 IN PRACTICE



Mingachevir State University actively promotes awareness of water conservation and sustainable use through educational programs, campaigns, and student engagement activities.

Key Impact:

- Increased awareness of water conservation practices
- Behavioral change towards responsible water use
- Strengthened culture of environmental responsibility

3.4 CASE STUDIES: SDG 6 IN PRACTICE

MINGACHEVIR STATE UNIVERSITY

CASE STUDY 4

Research and Innovation in Water Resource Management

The University has expanded its research activities in areas related to water resource management, including water efficiency, pollution prevention, and sustainable infrastructure solutions.

BETWEEN 2024 AND 2025:

- **5** research projects focused on water and environmental sustainability
- **15+** academic publications produced
- Collaboration with regional stakeholders and environmental experts

KEY IMPACT:

- Contribution to scientific knowledge in water management
- Support for evidence-based environmental solutions
- Strengthened research capacity in sustainability fields

Through research and innovation, the University contributes to the development of sustainable water solutions and supports a more resilient and environmentally responsible future.

The University has expanded its research activities in areas related to water resource management, including water efficiency, pollution prevention, and sustainable infrastructure solutions.

Key Impact:

- Contribution to scientific knowledge in water management
- Support for evidence-based environmental solutions
- Strengthened research capacity in sustainability fields

EVIDENCE

Within the framework of the "Protect Water Today, Protect Life Tomorrow" initiative, Mingachevir State University implemented comprehensive awareness-raising activities aimed at promoting water conservation and strengthening water security. The initiative actively engaged students, academic staff, and stakeholders in discussions, seminars, and interactive sessions focused on sustainable water management principles, including the efficient use of water resources, prevention of pollution, and protection of water ecosystems. By fostering environmental awareness and encouraging responsible attitudes toward water usage, these activities contributed to the development of a sustainability-oriented mindset within the academic community, while emphasizing the importance of safeguarding water resources for both present and future generations as a key environmental priority aligned with SDG 6. see:https://mdu.edu.az/water_27-09-25/

EVIDENCE

A practical training session was organized to enhance students' competencies in water management, environmental monitoring, and laboratory analysis (see: https://mdu.edu.az/practice_27-11-25/). The training incorporated hands-on activities, including water sampling, water quality assessment, and environmental impact evaluation, enabling students to gain direct experience in real-world conditions. Through this practice-oriented approach, students strengthened their ability to effectively integrate theoretical knowledge with practical applications, thereby improving their professional skills and preparedness in the field of water resource management in alignment with SDG 6 objectives.

EVIDENCE

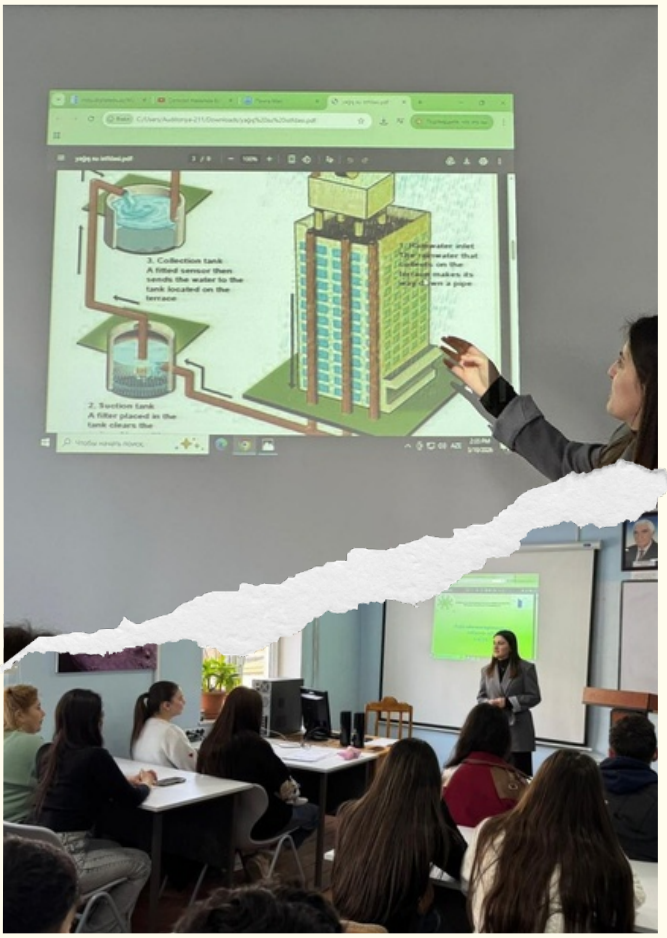
www.sustainable.mdu.edu.az

04

SDG 6 – Clean Water and Sanitation

A university-wide awareness event was conducted on the sustainable use and protection of water resources (see: https://mdu.edu.az/water_27-09-25/). The event addressed key issues such as water scarcity, the impacts of urbanization, and the effects of climate change on water systems, providing participants with a comprehensive understanding of current water-related challenges. In addition, practical approaches for reducing water waste and maintaining ecological balance through responsible water management were presented. These activities contributed to raising environmental awareness and promoting sustainable practices within the academic community in alignment with SDG 6 objectives.

A "Rainfall and Water Cycle Awareness" activity was organized to enhance understanding of the role of rainfall within the water cycle and its impact on ecosystems (see: https://mdu.edu.az/rain_04-11-25/). The session provided detailed insights into the effects of climate change on precipitation patterns and water availability, highlighting the growing challenges associated with water resource sustainability.



Through this activity, students developed a deeper understanding of the interconnections between climate systems and water resources, thereby strengthening their environmental awareness and supporting the integration of SDG 6 principles into their academic knowledge and practical perspectives.

EVIDENCE

www.sustainable.mdu.edu.az

04

SDG 6 – Clean Water and Sanitation

Focusing on sustainable water resource management and environmental safety, a scientific discussion was organized to explore key challenges and solutions in this field (see: https://mdu.edu.az/water_03-11-25/). During the session, particular attention was given to maintaining water balance, reducing pollution, and ensuring the efficient allocation and use of water resources. The discussion created an opportunity for participants to exchange knowledge and critically analyze current environmental issues. As a result, the event contributed to the advancement of scientific understanding in water governance and supported the promotion of sustainable and responsible management practices in line with SDG 6 objectives.

6 CLEAN WATER AND SANITATION

EVIDENCE

www.sustainable.mdu.edu.az

04

SDG 6 – Clean Water and Sanitation

As part of efforts to promote environmental responsibility, an information session was organized on the protection and sustainable use of water resources (see: https://mdu.edu.az/water-10-10-25/). The session provided comprehensive insights into challenges related to water scarcity, the ecological significance of water, and key strategies for sustainable water management, including the efficient use of resources and the prevention of water pollution. Participants were introduced to both global and local perspectives on water-related issues, allowing them to better understand the broader environmental context.

Through this activity, students' awareness of environmental challenges was significantly enhanced, while a stronger sense of responsibility toward the protection and sustainable use of water resources was fostered in alignment with SDG 6 principles.

6 CLEAN WATER AND SANITATION

To enhance the efficiency of campus water management systems, a seminar was conducted focusing on sustainable operational practices (see: https://mdu.edu.az/a-seminar-on-campus-water-management-system-25-09-25/). The discussions covered key aspects such as monitoring water consumption, implementing leakage reduction strategies, and integrating smart water management technologies into campus infrastructure. The seminar provided valuable insights into optimizing resource use and improving institutional performance in water management. As a result, it contributed to strengthening the university's commitment to sustainable campus operations and aligning its practices with SDG 6 objectives.

Strengthening international cooperation in the field of environmental sustainability, a study visit to Samarkand was organized with a focus on water resource management and environmental technologies (see: https://mdu.edu.az/samarkand_10-12-25/). During the visit, participants were introduced to innovative approaches, advanced technologies, and practical solutions applied in sustainable water governance, gaining valuable insights from international best practices. The programme enabled participants to observe real-world applications, exchange experiences with experts, and deepen their understanding of contemporary water management challenges and solutions. This initiative not only facilitated effective knowledge sharing but also contributed to expanding global perspectives, strengthening institutional capacity, and fostering long-term collaboration in the field of sustainable water resource management in alignment with SDG 6 objectives.

Particular emphasis was placed on ensuring compliance with environmental standards and promoting the adoption of sustainable production practices during the training (see: https://mdu.edu.az/industry_06-12-25/). The session addressed key topics such as cleaner production approaches, efficient water use, and environmental responsibility as integral components of modern industrial development. Participants were introduced to strategies that support resource efficiency while minimizing environmental impact. The activity highlighted the critical need to balance industrial growth with environmental protection, ensuring that economic development does not compromise the quality and availability of water resources. In this context, the training contributed to fostering a more responsible and sustainability-oriented approach within the industrial and academic environment in alignment with SDG 6 principles.

EVIDENCE

www.sustainable.mdu.edu.az

04

SDG 6 – Clean Water and Sanitation

A field-based scientific visit was organized by Mingachevir State University to examine the impact of industrial wastewater on water bodies in a real-world context. During the visit, students and academic staff explored the functioning of a wastewater treatment facility, where they observed key processes such as mechanical and chemical treatment. The structure of the system—including reception basins, aeration tanks, sedimentation units, pumping stations, and sludge processing facilities—was explained in detail, providing participants with a clear understanding of how pollutants are removed before water is released into natural ecosystems

(https://mdu.edu.az/scientific-practical-visit-on-reducing-industrial-wastewater-impact-on-water-bodies/).

EVIDENCE

www.sustainable.mdu.edu.az

04

SDG 6 – Clean Water and Sanitation

Addressing the interdependence of critical resource systems, a discussion was organized at Mingachevir State University to explore the relationships between water, energy, and food within the framework of sustainable development (see: https://mdu.edu.az/water-energy-food-05-11-25/). The event focused on the "water–energy–food nexus" approach, highlighting the need for integrated and coordinated management of these interconnected sectors. Participants examined the vital role of water resources in agricultural production and energy generation, as well as the importance of energy in water extraction, treatment, distribution, and food production processes. The discussion provided a comprehensive perspective on resource interlinkages, supported the development of systems thinking among participants, and contributed to promoting more efficient and sustainable resource management practices in alignment with SDG 6 objectives.

EVIDENCE

www.sustainable.mdu.edu.az

04

SDG 6 – Clean Water and Sanitation

A scientific seminar was held at Mingachevir State University focusing on sustainable water resource management and environmental protection, where key topics such as water conservation strategies, efficient use of resources, and pollution prevention methods were comprehensively discussed. Participants were introduced to modern approaches aimed at protecting water ecosystems and ensuring the long-term availability of clean water, while also examining innovative governance models, policy frameworks, and the role of institutional responsibility in effective water management. The seminar emphasized the importance of coordinated action, environmental monitoring, and stakeholder collaboration, ultimately contributing to a deeper institutional understanding of water sustainability and supporting the development of more responsible and sustainable management practices (https://mdu.edu.az/water_resources_03-12-25/).

6 CLEAN WATER AND SANITATION

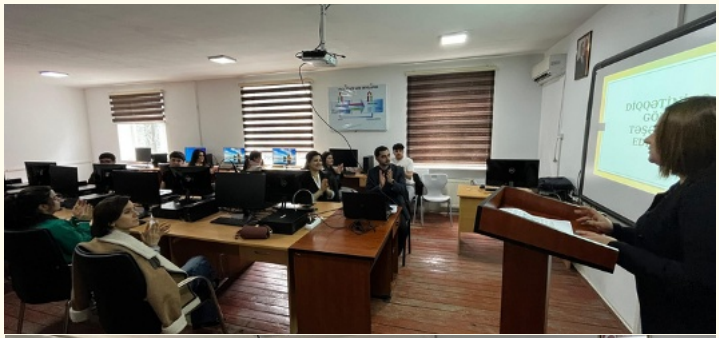
EVIDENCE

www.sustainable.mdu.edu.az

04

SDG 6 – Clean Water and Sanitation

A seminar was organized at Mingachevir State University focusing on innovative and alternative technologies in conditions of water scarcity, where key topics such as water reuse systems, advanced purification methods, and efficient water management solutions were discussed in an integrated manner. Participants were introduced to modern technological approaches designed to optimize water consumption, enhance treatment efficiency, and ensure the sustainable use of limited water resources, while also exploring practical applications of these technologies in industrial and environmental contexts. The session emphasized the critical role of technological innovation in addressing water-related challenges and highlighted its importance in supporting sustainable development and long-term water security (https://mdu.edu.az/a-seminar-on-alternative-technologies-and-innovative-solutions-in-conditions-of-water-scarcity-16-11-25/).



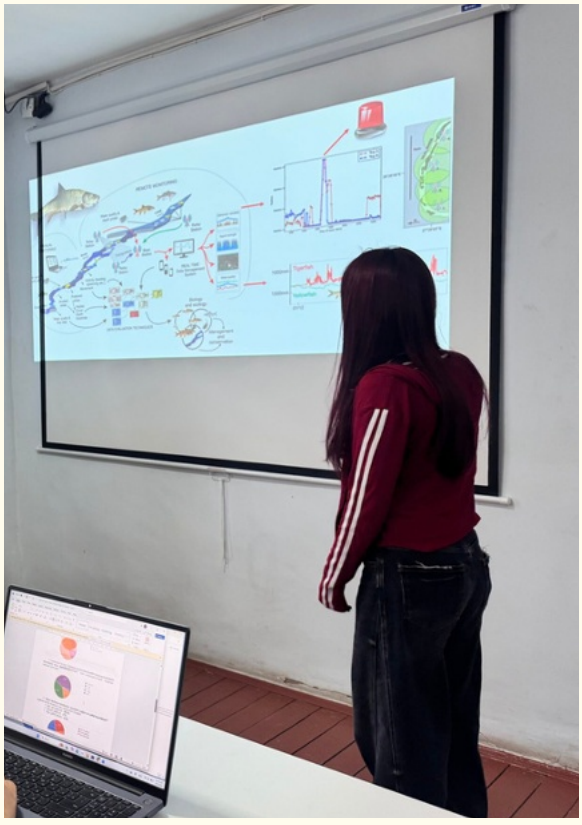
EVIDENCE

www.sustainable.mdu.edu.az

04

SDG 6 – Clean Water and Sanitation

A project focusing on the digital monitoring of water quality was implemented at Mingachevir State University using advanced sensor technologies and data analytics, enabling continuous and real-time assessment of water conditions. The system facilitated the collection and analysis of key water quality indicators, supported early detection of pollution risks, and strengthened evidence-based environmental management processes. At the same time, the initiative promoted the integration of innovative digital solutions into water monitoring practices, highlighting the role of technology in ensuring sustainability and enhancing institutional capacity to address water-related challenges more effectively (https://mdu.edu.az/digital-water-quality-19-11-25/).



6 CLEAN WATER AND SANITATION

Encouraging innovation in the field of public health and environmental sustainability, an event was organized to showcase startup ideas focused on sanitation and hygiene (see: https://mdu.edu.az/public-sanitation-and-hygiene-startups-06-10-25/). The discussions addressed key issues such as access to clean water, the development of modern sanitation systems, and improvements in public health conditions.

Participants presented creative and practical solutions aimed at enhancing hygiene standards and reducing health risks associated with inadequate water and sanitation infrastructure. The initiative contributed to promoting entrepreneurial thinking while directly supporting SDG 6 targets related to clean water and sanitation.

EVIDENCE

www.sustainable.mdu.edu.az

04

SDG 6 – Clean Water and Sanitation

Focusing on sustainable agricultural practices, a seminar was held on efficient water use and modern irrigation techniques (see: https://mdu.edu.az/water-consumption-in-agriculture-25-09-25/). The session covered important topics such as reducing water loss, implementing drip irrigation technologies, and adopting environmentally sustainable farming methods that ensure long-term productivity. Particular attention was given to the role of innovative irrigation systems and resource management strategies in addressing water scarcity challenges in agriculture. Participants gained practical insights into optimizing water consumption while maintaining crop yield and quality, as well as understanding the environmental and economic benefits of efficient water use. The activity supported improved agricultural water management, strengthened awareness of sustainable farming practices, and contributed to the promotion of resource-efficient approaches in alignment with SDG 6 objectives.

6 CLEAN WATER AND SANITATION

EVIDENCE

www.sustainable.mdu.edu.az

04

SDG 6 – Clean Water and Sanitation

Supporting environmental protection and ecosystem sustainability, a project was implemented focusing on the restoration and conservation of river and lake ecosystems (see: https://mdu.edu.az/river-and-lake-ecosystem-restoration-13-05-25/). The initiative included a comprehensive assessment of ecological conditions, identification of environmental risks, and the development of measures aimed at protecting biodiversity and restoring degraded habitats. Particular emphasis was placed on improving water quality, preserving natural habitats, and ensuring the long-term sustainability of freshwater ecosystems. Through these activities, efforts were made to enhance ecosystem resilience and strengthen the adaptive capacity of aquatic environments to environmental pressures. The project also contributed to increasing environmental awareness among participants and local communities, reinforcing the importance of conserving natural water systems and promoting sustainable ecosystem management in line with SDG 6 priorities.

6 CLEAN WATER AND SANITATION

IMPACT

At Mingachevir State University, activities implemented under SDG 6 not only address environmental challenges but also significantly contribute to improving the quality of education, developing human capital, and enhancing societal well-being. The university adopts an integrated approach by embedding water sustainability into teaching, research, and community engagement, creating a multidimensional impact.

The integration of water and environmental topics into academic curricula is a key factor in enhancing education quality. Students gain both theoretical knowledge and practical experience through participation in applied projects addressing real-world challenges.

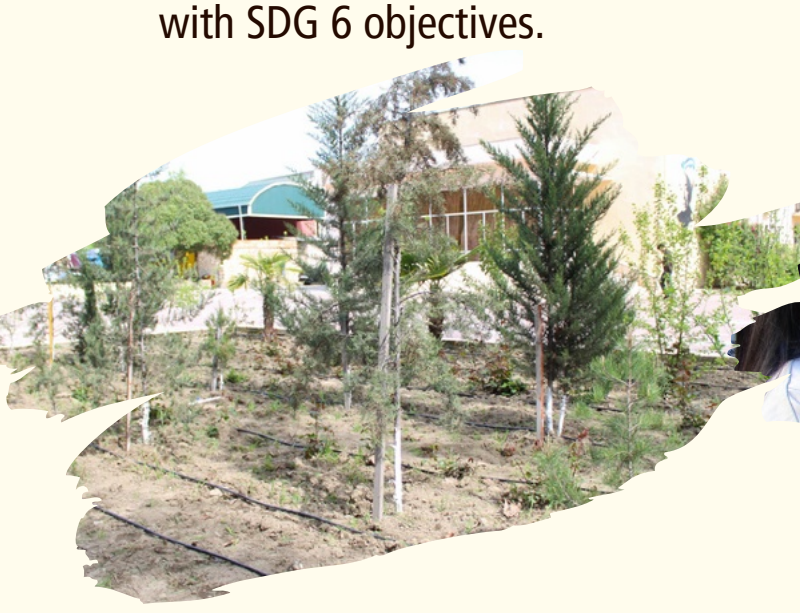
IMPACT

www.sustainable.mdu.edu.az

05

SDG 6 – Clean Water and Sanitation

The integration of water and environmental topics into academic curricula serves as a key factor in enhancing the overall quality of education. Through participation in applied projects that address real-world environmental challenges, students acquire not only strong theoretical knowledge but also valuable practical experience. The incorporation of seminars, laboratory work, and field-based activities ensures that the learning process becomes more practice-oriented, interactive, and aligned with current environmental and sustainability needs. This approach enables students to better understand complex environmental systems while actively engaging in problem-based learning. As a result, it significantly strengthens their analytical thinking, problem-solving abilities, and research competencies, while also preparing them to contribute effectively to sustainable water and environmental management in line with SDG 6 objectives.



6 CLEAN WATER AND SANITATION

Through continuous training programmes, seminars, and international collaborations, Mingachevir State University (MSU) makes a substantial contribution to the professional development of both students and academic staff. Activities focusing on water quality monitoring, innovative technologies, and sustainable resource management enable participants to acquire up-to-date theoretical knowledge while simultaneously developing essential practical skills. These initiatives are designed to bridge the gap between academic learning and real-world application, ensuring that participants remain responsive to emerging environmental challenges.

In addition, startup competitions and project-based initiatives foster creativity, innovation, and entrepreneurial thinking among students, while also expanding research opportunities, interdisciplinary collaboration, and academic productivity among faculty members.

Furthermore, the university's awareness campaigns and community-based initiatives play a crucial role in enhancing environmental awareness within society. Activities focusing on water conservation, hygiene, and sanitation not only improve public understanding of key environmental issues but also encourage responsible behavior and active civic engagement. These efforts contribute to the promotion of sustainable lifestyles and reinforce the importance of equitable access to clean water and proper sanitation as fundamental components of social well-being. At the same time, through strong and dynamic university–industry collaboration, MSU actively contributes to the development of a skilled and adaptable workforce aligned with labor market demands. By engaging with industrial partners and addressing real-life challenges related to water management and environmental protection, students gain hands-on experience, improve their technical and professional competencies, and enhance their employability. This integrated approach ultimately prepares graduates for successful careers in environmental engineering, water resource management, and related fields, while also supporting long-term sustainable development goals in alignment with SDG 6 objectives.

MINGACHEVIR STATE UNIVERSITY

WATER SUSTAINABILITY INDICATORS

Progress and Targets (2024–2027)

Indicator Category	KPI (Key Performance Indicator)	2024 (Baseline)	2025 (Current Status)	2026 (Target)	2027 (Target)
Water Management	Reduction in water consumption	15%	-18%	-20%	-23%
Smart Infrastructure	Buildings equipped with smart water meters	10%	45%	70%	100%
Sanitation Systems	Level of sanitation infrastructure on campus	Initial level	Improved	Advanced	Fully optimized
Awareness and Education	Number of water awareness activities	5	18	20	25+
Community Participation	Participants in water-related initiatives	300+	600+	800+	1000+
Research and Innovation	Number of water-related research projects	1	5	7	10+
Green Campus	Integration of water sustainability into infrastructure	Initiated	Implemented	Expanded	Fully integrated

These indicators reflect Mingachevir State University's ongoing commitment to efficient water management, sustainable infrastructure, awareness, research, and community engagement for a greener and more resilient campus.

This figure presents Mingachevir State University's progress in water sustainability, highlighting key improvements in water consumption reduction, smart infrastructure, sanitation systems, awareness activities, and research. It shows a clear upward trend from 2024 to 2025, with realistic and achievable targets set for 2026–2027. Overall, the data reflects a structured and continuous effort toward efficient resource management, increased community engagement, and the development of a more sustainable and environmentally responsible campus.

Despite the measurable progress achieved in advancing SDG 6, Mingachevir State University continues to face several structural and operational challenges that limit the efficiency, scalability, and long-term sustainability of its water and sanitation initiatives.

One of the primary challenges is the limited coverage of smart water management systems across campus. While pilot implementations such as smart meters have been introduced, their application remains partial, resulting in insufficient real-time monitoring and control of water consumption.

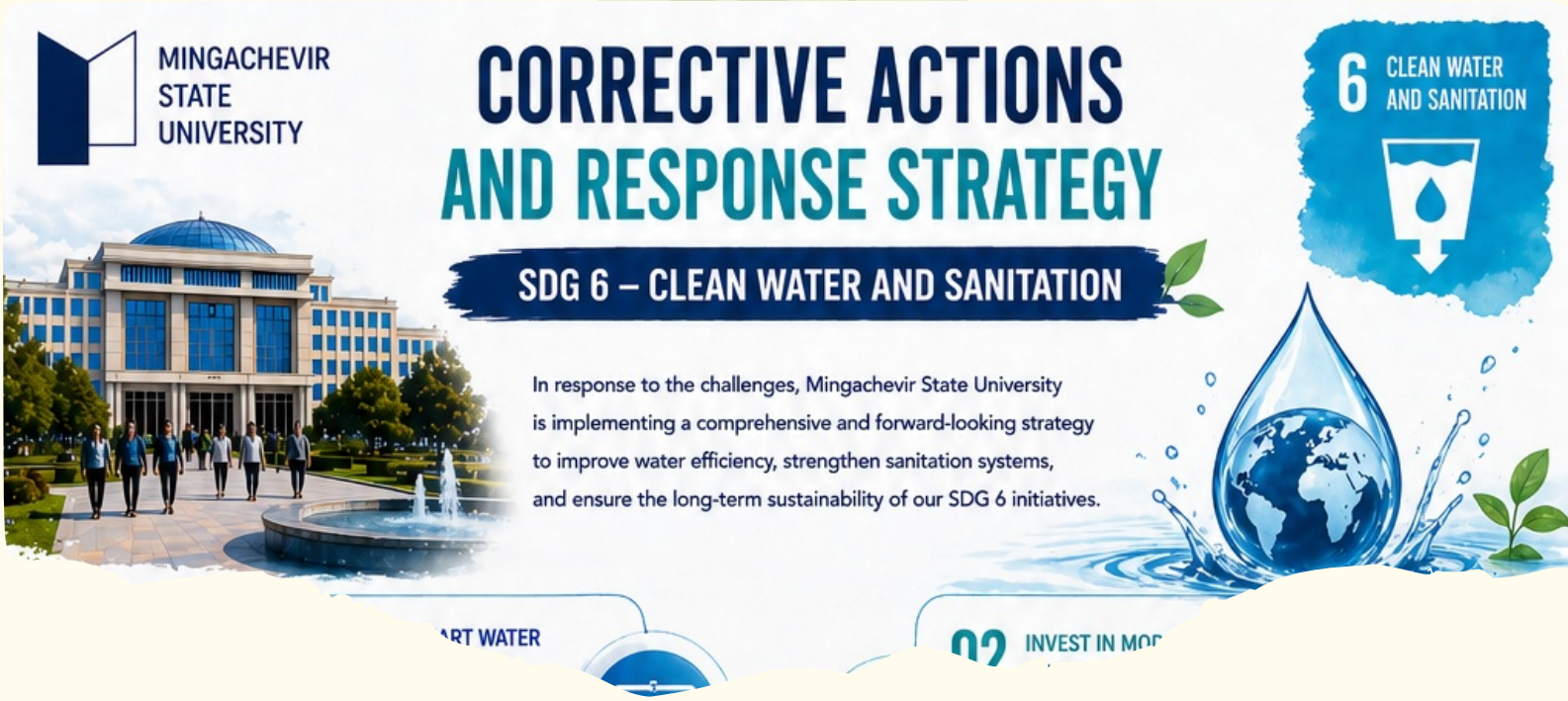
Another significant issue relates to the underdeveloped wastewater management infrastructure. Although basic control mechanisms are in place, the absence of advanced treatment, recycling, and reuse systems restricts the University's ability to minimize environmental impact and optimize water resource utilization.

The lack of a fully integrated, data-driven monitoring system also represents a key limitation. Current assessments are primarily based on aggregate consumption data rather than detailed, building-level analytics or predictive insights. This constrains the effectiveness of decision-making and long-term planning.

In addition, awareness and behavioral change initiatives, while implemented, have not yet achieved full institutional penetration. Participation levels vary, and sustained behavioral change in water usage practices remains a challenge among both students and staff.

Infrastructure-related limitations further affect the efficiency of water distribution and sanitation systems. Aging pipelines, limited automation, and insufficient integration of sustainable technologies reduce operational performance and increase the risk of water loss.

Furthermore, research and innovation activities related to water sustainability, although growing, are not yet fully aligned with large-scale practical implementation. The gap between academic research outputs and real-world application remains a critical area for improvement.



In response to the challenges identified in the previous section, Mingachevir State University has developed a comprehensive and forward-looking strategy aimed at improving water efficiency, strengthening sanitation systems, and ensuring the long-term sustainability of its SDG 6 initiatives.

To address gaps in water management infrastructure, the University will expand the installation of smart water meters across all campus buildings and establish a centralized digital water monitoring system. This will enable real-time tracking of water consumption, early detection of inefficiencies, and data-driven decision-making.

In order to improve wastewater management, the University will invest in the development of modern wastewater treatment and reuse systems. This includes the introduction of water recycling mechanisms for non-potable uses such as irrigation and facility maintenance, thereby optimizing resource utilization.

To overcome limitations in monitoring and evaluation, the University will implement a KPI-based water management framework. Key indicators such as water consumption per capita, reduction rates, reuse ratios, and sanitation performance levels will be systematically tracked through integrated digital platforms.

To strengthen awareness and behavioral change, the University will institutionalize continuous education and engagement programs. These will include curriculum integration, student-led initiatives, and incentive-based campaigns aimed at promoting responsible water use.

Addressing infrastructure constraints, the University will prioritize the modernization of aging water distribution networks and sanitation facilities. Investments will focus on efficiency, leak reduction, and improved hygiene standards across all campus areas.

To enhance research and innovation, the University will expand applied research projects in water sustainability, encourage interdisciplinary collaboration, and establish pilot projects that link research outcomes with operational practices.

CONTINUOUS IMPROVEMENT AND FUTURE PLANS

Mingachevir State University is committed to continuously strengthening its contribution to SDG 6 through strategic planning, innovation, and active stakeholder engagement. The university aims to further integrate water sustainability into academic programs, expand research in the field of water resource management, and enhance the application of modern monitoring technologies. In addition, increasing international collaboration in water-related projects remains one of the key strategic priorities.

MSU plans to initiate new projects focused on digital water management systems, smart irrigation solutions, and community-based water conservation initiatives. Particular emphasis will be placed on encouraging student-led innovation projects and startups in the field of water sustainability, fostering creativity and practical problem-solving skills.

The university also seeks to improve data collection and monitoring systems related to water usage and efficiency, strengthen partnerships with industry, and expand opportunities for practical training. At the same time, greater attention will be given to community outreach and awareness-raising activities to ensure a broader societal impact and promote responsible water use at all levels.

CONCLUSION

In conclusion, Mingachevir State University demonstrates a strong, comprehensive, and forward-looking commitment to the achievement of SDG 6 through the effective integration of education, research, innovation, and community engagement. The university has successfully embedded water sustainability principles into its academic programmes, ensuring that students acquire both solid theoretical knowledge and practical skills relevant to real-world environmental challenges. Through active collaboration with industry partners, government bodies, and public institutions, MSU contributes to addressing key issues such as water resource management, industrial wastewater treatment, and sustainable water use. At the same time, awareness campaigns, social initiatives, and capacity-building activities enhance public understanding of water conservation, hygiene, and sanitation, fostering a culture of environmental responsibility within society.

CONCLUSION

Through active collaboration with industry and public institutions, MSU contributes to addressing key issues such as water resource management, industrial wastewater treatment, and sustainable water use. At the same time, awareness campaigns, social initiatives, and capacity-building activities enhance public understanding of water conservation, hygiene, and sanitation.

The university's support for innovation—particularly through digital water monitoring projects and student-led initiatives—highlights its forward-looking approach to solving water-related challenges. Overall, MSU's efforts reflect a holistic and impactful approach to SDG 6, combining academic excellence with societal responsibility. With its ongoing commitment to continuous improvement, the university is well-positioned to further strengthen its contribution to sustainable water management and to the broader global sustainability agenda.

MINGACHEVIR STATE UNIVERSITY

6 CLEAN WATER AND SANITATION

THANK You

We sincerely thank all partners, academic and administrative staff, students, and participants for their support in implementing these initiatives. The achieved results contribute to the MSU`s progress in sustainable development.

Phone

+994 242753272

Website

www.mdu.edu.az

Email

info@mdu.edu.az

Address

D.Aliyeva st. 21. Mingachevir