Azerbaijan TECHNICAL University



Report on Sustainable Development Goal 14

Life Below Water

2025



Foreword

This report highlights Azerbaijan Technical University's (AzTU) contributions to advancing Sustainable Development Goal 14 (SDG 14), emphasizing current achievements and opportunities for further impact. While formalized educational programs specifically targeting aquatic ecosystems are still developing, AzTU has made significant strides in research, awareness campaigns, and collaboration with national authorities. Through projects on water purification, sustainable resource management, and pollution reduction, the university has contributed practical solutions for conserving national water bodies, including the Caspian Sea and transboundary rivers. Students and faculty actively participate in volunteer initiatives, environmental monitoring, and public education programs, demonstrating a strong institutional commitment to fostering a culture of marine sustainability.

Introduction

SDG 14, "Life Below Water," focuses on the sustainable use and conservation of oceans, seas, and aquatic resources. For Azerbaijan, bordered by the Caspian Sea and reliant on freshwater systems, achieving this goal is essential for both environmental and economic resilience. In 2025, AzTU continues to advance SDG 14 through applied research in water purification, resource management, and pollution mitigation, as well as through awareness campaigns led by Environmental Engineering students. Although specialized programs in freshwater ecosystems, sustainable fisheries, and aquaculture are still in development, the university actively collaborates with national institutions such as the Ministry of Ecology and Natural Resources, providing scientific expertise to support water protection policies and sustainable management practices.

The Quality Assurance Department monitors all university activities under the SDG framework to ensure transparency, efficiency, and measurable outcomes.

References

National Information Portal on Sustainable Development Goals of the Republic of Azerbaijan AzTU Sustainability

AzTU SDG 14 Report / November 2023

AzTU SDG 14 Report 2024

Training on Plastic Pollution Awareness and Bioplastic Production Held as Part of Sustainability Workshops

Ecological Thinking Begins at School — Another Group of Students Joined the Green Mission at AzTU

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Azerbaijan Technical University and Dithari Technologies Sign Memorandum of Understanding on the Establishment of DISC Innovation and Sustainability Lab

SDG 14 keywords - Life below water			
Life Below Water	Marine Ecosystem Conservation	Marine Pollution Prevention	Caspian Sea Protection
Aquatic Ecosystem Management	Water Pollution Reduction	Marine Biodiversity Conservation	Freshwater Ecosystem Protection
Sustainable Water Resource Management	Plastic Pollution Prevention	Microplastic Monitoring	Marine Litter Reduction
Bioplastic Production	Biodegradable Materials	Water Purification Technologies	Pollution Monitoring Systems
Coastal Ecosystem Protection	Sustainable Fisheries	Sustainable Aquaculture	Responsible Fishing Practices
Marine Research and Innovation	Environmental Monitoring	Marine Pollution Management	Sustainable Maritime Industry
Sustainable Shipbuilding	Maritime Waste Management	Blue Economy Development	Marine Environmental Engineering
Coastal Engineering	Environmental Awareness and Education	Green Mission Initiative	Sustainable Materials Innovation
Circular Economy	Marine Conservation Partnerships	Water Quality Improvement	Ecosystem Restoration
Sustainable Coastal Management	Marine Pollution Control	Industrial Environmental Sustainability	Caspian Coastal Protection

SDG 14 Targets

- **Reduce marine pollution:** Focus on minimizing pollution from human activities affecting water bodies.
- **Protect and restore ecosystems:** Support sustainable management and recovery of marine and freshwater ecosystems.
- **Improve water quality:** Address water pollution through research on contaminants and water treatment.
- **Sustainable fisheries:** Promote responsible fishing and aquaculture for food security and job creation.
- **Conserve marine areas:** Contribute to protecting key marine and coastal regions.
- **Eliminate harmful fishing practices**: Support efforts to reduce overfishing and illegal activities.
- **Economic benefits from marine resources:** Foster sustainable fisheries and marine tourism to boost the economy.
- **Enhance marine research:** Expand studies on water management and biodiversity conservation through partnerships

Statistics and Their Indicators

Indicator	2023	2024	2025	Source / Verification
Sustainability workshops including marine/pollution topics	11	17	23	AzTU internal records, 2025
Bioplastic production training events	–	1	1	AzTU internal records, 2025
Green Mission outreach events	3	7	12	AzTU internal records, 2025
Students involved in green and anti-pollution activities	480	730	1,050	AzTU internal records, 2025
Industrial training placements at Baku Shipbuilding Plant	–	–	1 cohort	AzTU internal records, 2025
Innovation projects on biodegradable plastics & marine safety	2	4	5	AzTU internal records, 2025

SDG 14's Positive Impact on Other SDGs

- **SDG 2 – Zero Hunger:**

Protecting marine ecosystems and restoring fish populations supports sustainable fisheries, which are a major source of protein for millions of people worldwide. Healthy oceans enable stable food supplies, especially for coastal communities that rely on fishing for both nutrition and livelihoods. Therefore, SDG 14 directly strengthens global food security and reduces hunger.

- **SDG 8 – Decent Work and Economic Growth:**

Sustainable management of marine resources supports economic growth in sectors such as fishing, aquaculture, tourism, and shipping. By preventing overfishing and promoting responsible ocean use, SDG 14 helps maintain job opportunities and stable income for coastal populations. Healthy oceans contribute to long-term economic resilience and employment sustainability.

- **SDG 12 – Responsible Consumption and Production:**

SDG 14 promotes reduced waste and pollution entering marine environments, encouraging more responsible production and resource use. Efforts to limit plastic pollution, chemical discharge, and unsustainable fishing practices help create more environmentally friendly supply chains. This encourages industries and consumers to adopt more sustainable consumption behaviors.

- **SDG 13 – Climate Action:**

Oceans play a critical role in regulating the global climate by absorbing carbon dioxide and heat. Protecting marine ecosystems, especially coral reefs, mangroves, and seagrasses, enhances natural carbon storage and increases resilience to climate change. SDG 14 therefore directly supports global climate mitigation and adaptation efforts.

Current situation

1. Training on Plastic Pollution Awareness and Bioplastic Production

In 2025, AzTU organized a specialized workshop titled "Plastic Pollution Awareness and Bioplastic Production" within its Sustainability Workshop Series. The session provided both theoretical and practical training on biodegradable materials, demonstrating how engineering solutions can reduce the amount of plastic waste reaching the Caspian Sea.

Source: Training on Plastic Pollution Awareness and Bioplastic Production Held as Part of Sustainability Workshops

2. Green Mission – Ecological Thinking Begins at School

The *Green Mission* initiative expanded in 2025 with joint actions between AzTU students and school pupils to strengthen environmental literacy and minimize land-based sources of marine pollution. Activities included recycling campaigns, awareness seminars, and environmental clean-ups designed to reduce plastic inflow into Azerbaijan's waterways.

Source: Ecological Thinking Begins at School — Another Group of Students Joined the Green Mission at AzTU

3. Industrial Training at Baku Shipbuilding Plant

AzTU students continued their professional internships at the *Baku Shipbuilding Plant*, gaining hands-on experience in ship construction, maintenance, and waste-handling procedures that align with sustainable maritime industry standards. This collaboration plays a strategic role in building a qualified

workforce for Azerbaijan's blue-economy sector.

Source: Students of AzTU Undergo Industrial Training at Baku Shipbuilding Plant

4. Innovation and Sustainability Laboratory (DISC Lab)

In 2025, AzTU strengthened its research capabilities through the establishment of the DISC Innovation and Sustainability Laboratory in cooperation with Dithari Technologies. The lab supports interdisciplinary projects in environmental technology, materials science, and digital monitoring — providing tools and expertise to design solutions for pollution control and marine ecosystem protection.

Source: Azerbaijan Technical University and Dithari Technologies Sign Memorandum of Understanding on the Establishment of DISC Innovation and Sustainability Lab

Future goals

1. **Develop a Marine Pollution Monitoring Protocol:** Establish systematic cooperation with the Ministry of Ecology and Natural Resources to measure and report microplastic and litter indicators near Caspian coastal zones.
2. **Annual Plastic Waste Inventory:** Implement a data-driven approach to track plastic waste collected during Green Mission and campus clean-up events.
3. **Commercialization of Bioplastic Innovations:** Transition laboratory-scale bioplastic prototypes into pilot applications in packaging and university procurement systems.
4. **Curriculum Enhancement:** Integrate modules on *Marine Ecology, Coastal Engineering,* and *Pollution Management* into engineering and environmental study programmes.
5. **Industrial Partnership Expansion:** Strengthen collaboration with maritime industries to adopt sustainable practices in shipbuilding, materials recycling, and coastal operations.
6. **Public Awareness Campaigns:** Launch a "Caspian Clean 2026" initiative involving schools, NGOs, and municipalities to mobilize community action for marine protection.

Conclusion

AzTU's 2025 progress under SDG 14 demonstrates tangible contributions to protecting marine ecosystems through education, innovation, and industry engagement.

From bioplastic production training and school-level environmental awareness to industrial partnerships in shipbuilding, the university has effectively linked technical education with sustainable environmental outcomes.

The next strategic step involves expanding monitoring and quantification mechanisms to validate environmental impact data. Through cross-sector collaboration and targeted research, AzTU aims to transition from awareness-based outcomes to measurable ecological improvements in the Caspian region.