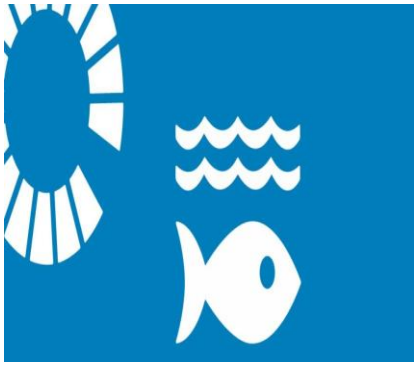
Azerbaijan TECHNICAL University

Report on Sustainable Development Goal 14

Life Below Water

2024



Foreword

This report focuses on the contribution of Azerbaijan Technical University (AZTU) to the advancement of SDG 14, highlighting both its current efforts and areas for potential growth. While the university is still in the early stages of formalizing educational programs and policies specifically related to aquatic ecosystems, notable progress has been made in research, awareness-raising activities, and collaboration with national authorities. Through its research initiatives in water purification and management, the university has contributed to the development of practical solutions for water conservation and the reduction of pollution in national water bodies, including the Caspian Sea and transboundary rivers. Students and faculty members alike are actively engaged in volunteerism, public education campaigns, and environmental monitoring, demonstrating the institution's commitment to fostering a culture of sustainability.

Introduction

Sustainable Development Goal 14 (SDG 14), "Life Below Water," focuses on the conservation and sustainable use of oceans, seas, and marine resources. For Azerbaijan, bordered by the Caspian Sea and heavily reliant on freshwater resources, addressing this goal is crucial for environmental sustainability and economic stability. Azerbaijan Technical University (AZTU) plays an important role in supporting SDG 14 through its research on water purification, resource management, and public awareness campaigns led by Environmental Engineering students. However, the university currently lacks specialized educational programs on freshwater ecosystems, sustainable fisheries, and aquaculture. Despite these gaps, AZTU collaborates with national institutions like the Ministry of Ecology and Natural Resources, providing scientific support for policies that protect water resources.

References

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

AzTU Sustainability

AzTU SDG 14 Report / November 2023

SDG 14 keywords - Life below water			
Artisanal fishers	Coral reef	Law of the Sea	Ocean temperature
Biodiversity	Ecosystem management	Marine	Overfishing
Carbon dioxide	Fisheries	Marine areas	Productive oceans
Coastal biodiversity	Fishers	Marine biodiversity	Protected areas
Coastal ecosystems	Fishing	Marine ecosystems	Sea grasses
Coastal habitats	Fishing practices	Marine fisheries	Seas
Coastal parks	Fish species	Marine parks	Sustainable ecosystems
Coastal resources	Fish stocks	Marine pollution	Unregulated fishing
Coastlines	Fish stocks and fisheries management	Marine resources	Water resources and policy
Conserve	Global warming	Ocean acidification	
Conserve oceans	Illegal fishing	Oceanography	
Coral bleaching	Kelp	Oceans	

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

1. Water Quality and Pollution:

- **Freshwater Ecosystem Pollution Level**: Proportion (%) of Azerbaijan's freshwater sources (e.g., Kura, Araz rivers) affected by pollutants like nitrogen, phenols, and heavy metals due to cross-border pollution.
- **University Research on Water Purification**: Number of projects and studies conducted by Azerbaijan Technical University (AzTU) on water purification, wastewater treatment, and pollutant removal (e.g., ongoing Okchuchay river project).

2. Sustainable Fisheries and Aquatic Resource Education:

- **Fisheries and Aquaculture Programs**: Number of educational programs or partnerships focused on sustainable fisheries and aquaculture. Current status: none at AzTU, but potential partnerships with state agencies.
- **Community Awareness on Overfishing**: Number of awareness activities (lectures, outreach events) held by AzTU to educate on overfishing, illegal fishing, and ecosystem preservation.

3. University Waste Management and Recycling:

- **Plastic and Solid Waste Recycling**: Availability of campus recycling bins and quantity of plastic waste collected/recycled monthly. Indicator: number of plastic collection campaigns led by students.
- **Waste Education Programs**: Count of university courses and initiatives educating students on waste reduction, recycling, and sustainable practices.

4. Conservation and Biodiversity Efforts:

- **Biodiversity on Campus**: Number of native, drought-resistant trees planted on campus to support local biodiversity.
- **Support for Marine Conservation Initiatives**: Number of AzTU-supported research or policy initiatives aimed at the sustainable use of oceans and freshwater resources.

5. Policy and Partnership Support for Conservation:

- **Partnerships with National Environmental Bodies**: Count of collaborations with agencies like the Ministry of Ecology to support sustainable aquatic ecosystem practices.
- **Compliance with Environmental Regulations**: Number of university projects and activities aligned with national water quality and ecosystem standards.

SDG 14's Positive Impact on Other SDGs

SDG 3 (Good Health and Well-being). Water Quality and Pollution Control: By addressing water quality through research on purification and pollutant removal, AzTU helps protect human health from harmful contaminants. Clean water is essential for preventing waterborne diseases, contributing to healthier ecosystems and communities.

SDG 6 (Clean Water and Sanitation). Sustainable Water Resource Management: AzTU's projects on wastewater treatment and pollution monitoring in rivers like the Kura and Araz support SDG 6 by advancing water management practices. These initiatives help maintain clean water sources, which are essential for both drinking water and ecosystem health.

SDG 12 (Responsible Consumption and Production). Waste Management and Recycling: The university's efforts in plastic waste collection, recycling, and student awareness programs promote responsible waste management on campus. By instilling these practices in students, AzTU supports sustainable consumption, reducing plastic pollution in oceans and landfills.

SDG 13 (Climate Action). Education on Ecosystem Preservation: AzTU's outreach programs raise awareness about the effects of human activity on water ecosystems, indirectly supporting climate action. Conserving water resources and reducing pollution help mitigate climate impacts by protecting ecosystems that act as carbon sinks and buffer against climate variability.

SDG 15 (Life on Land). Conservation of Biodiversity: AzTU's tree-planting and campus biodiversity initiatives contribute to SDG 15 by supporting terrestrial ecosystems and habitats. These actions create a balanced environment that supports both land and marine life, fostering a holistic approach to biodiversity.

SDG 17 (Partnerships for the Goals). Collaboration with National Bodies: AzTU's partnerships with entities like the Ministry of Ecology and the State Water Resources Agency amplify its impact by aligning with national and international goals for ecosystem conservation. These collaborations

strengthen efforts across multiple SDGs, reinforcing sustainable development on both local and national levels.

Current Situation on Freshwater Resource Management

Azerbaijan is confronting a severe freshwater resource crisis due to pollution from agricultural, urban, and industrial activities, alongside the effects of climate change. Pollution in transboundary rivers, such as the Kura and Araz, is exacerbated by contaminants from neighboring countries, including nitrogen compounds, phenols, and heavy metals. Over 60% of Azerbaijan's land area relies on these water sources, making this a critical issue for human health and environmental sustainability. AzTU has initiated research into water purification and pollutant removal techniques, including projects in collaboration with the German Academic Exchange Service. However, despite the relevance of such studies, current funding and resources are limited (Ministry of Ecology and Natural Resources of the Republic of Azerbaijan, eco.gov.az).

Current Situation in Fisheries and Aquatic Resource Education

Azerbaijan's 813-kilometer coastline offers substantial potential for fisheries, yet the sector remains underdeveloped. Fisheries and aquaculture could greatly contribute to food security and economic development, as highlighted by the United Nations. However, AzTU currently lacks dedicated programs on sustainable fisheries, aquaculture, or coastal tourism. This gap underscores the need for educational outreach on issues like overfishing and illegal fishing practices. Although AzTU has not yet integrated such programs, partnerships with agencies like the Ministry of Ecology and Natural Resources could help fill this gap and support awareness-raising initiatives

Current Situation in Waste Management and Plastic Pollution

Waste management, particularly plastic pollution, remains a significant environmental issue at AzTU. The university has made strides by installing bins for municipal and plastic waste across campus, creating opportunities for preliminary waste sorting and collection. Students, especially those studying environmental engineering, are involved in recycling initiatives and participate in broader efforts to

reduce plastic waste, which persists for hundreds of years in ecosystems. AzTU also educates students on waste reduction through coursework, aiming to instill sustainable practices. This is in line with the national strategy on plastic waste reduction

Current Situation in Ecosystem Conservation and Biodiversity

AzTU actively promotes ecosystem conservation on its campus by maintaining green spaces and planting drought-resistant trees, which support biodiversity and contribute to a more sustainable environment. While the university does not house animals on its grounds, these efforts help establish habitats for native plant species and improve the ecological balance. Additionally, AzTU's Department of Chemical Technology, Processing, and Ecology conducts research on water quality, studying pollutants in rivers such as the Okchuchay. These projects aim to address regional water contamination issues and contribute to Azerbaijan's broader environmental protection goals

Current Situation in Collaboration and Policy Support

AzTU collaborates with national agencies like the Ministry of Ecology and Natural Resources and the State Water Resources Agency, supporting efforts in sustainable water management and ecosystem conservation. While AzTU's primary role is research and education, these collaborations align the

university's activities with Azerbaijan's national sustainability policies. AzTU's environmental engineering students also engage in outreach programs, informing communities about water conservation and pollution control measures. However, AzTU does not currently operate a campus-specific policy for sustainable food collection from aquatic ecosystems, as these responsibilities lie with other state institutions (Water Rights, Center for Social Rights).

Future Goals for SDG 14

Azerbaijan Technical University (AzTU) is committed to advancing SDG 14: Life Below Water through enhanced focus on sustainable water resource management **and** aquatic ecosystem conservation. A key goal is to intensify research **in** water purification **and** pollutant reduction**,** particularly in the transboundary rivers Kura and Araz, where pollution impacts both ecosystems and communities. AzTU aims to strengthen partnerships with the Ministry of Ecology and Natural Resources and other bodies to expand studies **on** water quality **and** wastewater treatment. Plans also include the development of **educational programs** on **sustainable fisheries** and **aquaculture**, equipping students and local communities with skills in **marine resource management** and promoting awareness of **overfishing** and **illegal fishing practices**. To address **plastic pollution**, AzTU intends to expand its **recycling initiatives** and foster a **sustainable campus culture** by integrating **waste management education** and **plastic reduction campaigns**. AzTU will also support **biodiversity** through increased **native tree planting** on campus, creating habitats that contribute to **ecosystem resilience**. Together, these initiatives highlight AzTU's dedication to **SDG 14** and underscore its role in fostering **sustainable practices** for a healthier planet.

Conclusion

In conclusion, Azerbaijan Technical University (AzTU) is dedicated to advancing SDG 14 through targeted efforts in water resource management, pollution control, sustainable fisheries education, and biodiversity conservation. Through partnerships, research, and student engagement, AzTU aims to promote sustainable practices that support healthier aquatic ecosystems and foster environmental stewardship in the community.