SUSTAINABLE DEVELOPMENT GOAL

14 LIFE BELOW WATER

الحياة تحت الماء



REPORT 2024–2025

Assiut University

REVISED BY
International Ranking Office

SDG 14 · 2024–2025

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AIM

Assiut University seeks to contribute to the protection and sustainable use of aquatic resources, with particular relevance to the Nile River and freshwater ecosystems. The University's SDG 14 activities combine academic teaching, applied research, environmental monitoring, community outreach, student engagement, and partnerships with governmental, civil-society, and industry stakeholders.

1. Strengthening educational programmes and training related to freshwater ecosystems, fisheries, aquaculture, and aquatic animal health.
2. Encouraging research addressing water quality, pollution, biodiversity, fish health, ecological risks, and sustainable water-resource management.
3. Supporting community-based awareness and environmental activities concerning water conservation, pollution prevention, plastic waste, and protection of river ecosystems.
4. Promoting collaboration with governmental agencies, local communities, civil-society organisations, and relevant external partners.
5. Developing institutional practices and policies that support pollution prevention, sustainable aquatic-food procurement, and responsible resource use.

01

EDUCATION AND ACADEMIC PROGRAMMES SUPPORTING SDG 14

Assiut University offers a range of academic programmes that directly contribute to freshwater ecosystem sustainability.

Department of Soils and Water · Faculty of Agriculture

Plays a critical role in advancing education and research in soil-water interactions and sustainable resource management. Its programmes equip students with in-depth knowledge of soil properties, water dynamics, and modern irrigation techniques essential for agricultural productivity. The department conducts applied research to improve water-use efficiency, combat soil degradation, and promote environmentally friendly farming. Through collaborations with governmental agencies, local communities, and research institutions, it develops innovative solutions for water conservation and sustainable agriculture, and its training workshops and extension activities prepare farmers and professionals to meet the challenges of water scarcity and climate change.

Department of Geology · Faculty of Science

Advances education and research in earth sciences with a strong emphasis on water. Its programmes explore hydrogeology, groundwater resources, and the geological factors influencing freshwater ecosystems. Research focuses on assessing water quality, understanding aquifer systems, and developing strategies for sustainable groundwater management in arid and semi-arid regions. With modern laboratories and fieldwork facilities, it builds practical skills to address water scarcity, pollution, and climate-induced changes in water availability, and through partnerships with governmental agencies and environmental organisations it contributes to policy development and resource planning for long-term water security.

Department of Zoology and Entomology · Faculty of Science

Its programmes focus on aquatic biodiversity, ecological interactions, and the impact of environmental changes on freshwater habitats. Through theoretical and practical training, it equips students and researchers to address challenges in water conservation, ecosystem management, and sustainable resource use.

Department of Aquatic Animals Medicine and Management · Faculty of Veterinary Medicine

Its programmes cover fish physiology, disease diagnosis and treatment, and best practices for aquaculture management. It conducts applied research on water quality, pathogen control, and the impact of environmental changes on aquatic animal health, aiming to improve productivity and ensure ecological balance. With specialised laboratories and experimental facilities, it provides hands-on training in fish farming, aquatic veterinary care, and ecosystem monitoring, and through collaboration with fisheries, aquaculture enterprises, and environmental agencies it contributes to food security, biodiversity conservation, and sustainable freshwater resource management.

STUDENT AND COMMUNITY ENVIRONMENTAL ENGAGEMENT

Assiut University involves students in environmental awareness and stewardship activities addressing water sustainability, pollution prevention, plastic pollution, and protection of the Nile River. These activities connect academic knowledge with practical environmental responsibility and contribute to wider community awareness.



Students take part in a campaign to clean the Nile River in Bosra village, 10 April 2025.

Student-led campaigns on plastic pollution and improper waste disposal

Activities protecting the Nile River

Awareness linking students and communities to responsible water use

02

SUSTAINABLE FISHERIES, AQUACULTURE, AND TOURISM PROGRAMMES

Assiut University offers specialised academic courses such as Fish Biology (Z280) and Fish Farming (Z295). The Aquatic Animals Medicine and Management Unit provides practical training in aquaculture management, fish disease diagnosis, and water-quality testing.

Z280
Fish Biology course

Z295
Fish Farming course

Fish Biology and Fish Farming educational content

Training in fish farming, aquaculture system management, and aquatic veterinary care

Applied research on water quality, pathogen control, and environmental effects on aquatic animal health

Collaboration with fisheries, aquaculture enterprises, and environmental agencies

03

EDUCATIONAL OUTREACH ON OVERFISHING AND IUU FISHING

The University conducts outreach campaigns raising awareness of:

Overfishing | **Illegal, unreported, and unregulated (IUU) fishing** | **Destructive fishing practices**

Workshops engage local farmers, fish growers, and community members along freshwater systems. These activities provide platforms for scientific communication, community engagement, and awareness of water sustainability:

- Nile River protection and sustainability seminar, April 2025, in collaboration with CEMEX and the Ferry Nile environmental initiative.
- World Water Day awareness seminar, “Water: The Resource of Life and the Wealth of the Future”.
- Activities of the Aquatic Animals Medicine and Management Unit addressing aquatic ecosystem conservation and sustainable management.

RELATED LINKS

→ Awareness seminar on protecting the Nile River and promoting sustainability
→ World Water Day seminar (Arabic news)
→ International Ranking Office evidence page

04

EVENTS TO PROMOTE CONSERVATION OF WATER RESOURCES

Assiut University organises conferences, seminars, and community events promoting sustainable use of rivers, lakes, and aquatic resources. Examples:

Seminars on freshwater ecosystem health

Water-resources management conferences

World Water Day awareness seminar



World Water Day seminar invitation, 14 April 2025.

05

RESEARCH SUPPORTING AQUATIC ECOSYSTEMS AND BIODIVERSITY

The University conducts extensive research on local ecosystems, focusing on the conservation of threatened species and the renovation of degraded habitats. For example, its faculties collaborate with local environmental agencies to study and maintain ecosystems and their biodiversity, including native plant species at risk of extinction. Key research projects include:

- **Degradation of harmful pollutants and antibiotics**
- **Heavy metals in soil-water systems**
- **Marine and freshwater fungal responses to contamination**
- **Microplastics, chemical pollutants, and aquatic toxicity**

FEATURED PUBLICATION · BOOK CHAPTER

Responses of Marine Fungi to Heavy Metal Contamination

Ghada Abd-Elmonsef Mahmoud, Nitika Thakur, and Mohamed Hefzy. In Current Status of Marine Water Microbiology, pp. 263–277, first online 10 December 2023. The chapter reviews sources of heavy-metal pollution in the marine environment, their risks to marine life, and the mechanisms by which marine fungi respond to contamination.

06

REDUCING DAMAGE TO AQUATIC ECOSYSTEMS

Assiut University collaborates with industries and agencies to develop:

- **Pollution-mitigation technologies**
- **Toxicity-assessment frameworks**
- **Ecosystem-monitoring methods**
- **Training through the Aquatic Animals Medicine and Management Unit**
- **Policy and industry approaches to waste management and water-quality monitoring**

Studies include microplastic impacts, pollutant toxicity, and ecological stress indicators.

07

WATER-QUALITY STANDARDS AND ENVIRONMENTAL PROTECTION POLICIES

The University maintains policies based on WHO and Egyptian standards for:

Drinking-water quality | Water-discharge guidelines | Ecosystem protection

Assiut University monitors water quality in local wells, the Nile basin, and campus facilities.

08

MINIMISING AQUATIC ECOSYSTEM ALTERATIONS

Assiut University maintains an official plan to minimise physical alterations, chemical pollution, and biological changes in freshwater ecosystems. Efforts include biodiversity conservation, pollution control, and ecological monitoring.

Physical	Chemical	Biological
Alterations minimised	Pollution minimised	Changes minimised

FEATURED RESEARCH · EGYPTIAN SUGAR JOURNAL (2023), 20: 34–41

Monitoring the changes in the quality of drinking water through nine years in Assiut governorate, Egypt

Zeinab F. Ateya, Mohsen A. Gameh, Mohamed M. Abd El-Wahab, Mohamed Abdelgaber ·
doi.org/10.21608/esugj.2023.203322.1036

37,789
Drinking-water samples

9 years
2009–2017

11
Districts plus East and West Assiut

Drinking water by total dissolved solids (TDS)



Excellent 54% Good 38.5% Acceptable 7.5%

Water hardness



Hard 38.5% Very hard 61.5%

09

MONITORING AQUATIC ECOSYSTEM HEALTH

Monitoring systems include:

- **Water-chemistry monitoring**
- **Groundwater-quality studies**
- **Long-term water-quality change analysis**
- **Pathogen and contamination tracking**

DAAD

Environmental research project funded by the German Academic Exchange Service

The University President congratulated faculty members who won DAAD funding for a project using green environmental analysis methods to protect water resources.

10

COLLABORATION WITH LOCAL COMMUNITIES

Assiut University partners with:

Ministry
of Environment

Ministry
of Water Resources and Irrigation

Communities
Local agricultural and fishery communities

CEMEX
Industry partner

Misr El-Kheir
Foundation · civil society

Activities include irrigation training, ecosystem preservation, and pollution mitigation.

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