UNIVERSITY OF JOHANNESBURG

2023 ANNUAL REPORT: SDG REPORT

SDG 14: LIFE BELOW WATER

Our Future Reimagined

UJ SDG REPORT 2023
SDG 14: LIFE BELOW WATER

Report on the University of Johannesburg's Contribution to Sustainable Development Goal 14 SDG 14: Life Below Water

OVERVIEW: EXECUTIVE SUMMARY

This report outlines the University of Johannesburg's (UJ) contributions to the United Nations' Sustainable Development Goal 14 (SDG 14) on Life Below Water during the 2023 academic year. UJ has made significant contributions towards achieving SDG 14, by focusing on ocean conservation, sustainable fisheries, marine pollution, and biodiversity preservation. Throughout 2023, UJ leveraged its expertise in marine biology, research, and community engagement to address critical issues impacting marine ecosystems and aquatic life.

Key activities have included collaborative research aimed at improving water quality, enhancing coastal ecosystem protection, and supporting sustainable aquatic management practices. The university's role as an academic leader in South Africa has enabled it to partner with national and international organisations, contributing to scientific knowledge and practical solutions for the protection of marine resources.

The efforts detailed in this report reflect UJ's commitment to advancing SDG 14 through interdisciplinary research, partnerships, and education

on the importance of preserving life below water. These initiatives are integral to the university's broader mission of sustainability, community engagement, and global leadership in marine conservation.

INTRODUCTION

SDG 14 emphasises the need to conserve and sustainably use oceans, seas, and marine resources. The global decline in marine biodiversity, ocean pollution, and unsustainable fishing practices represent major challenges that require collective global action. At the University of Johannesburg (UJ), the commitment to SDG 14 is reflected in ongoing research, partnerships, and community engagement efforts focused on marine conservation, water quality, and sustainable practices that protect aquatic ecosystems.

UJ's work in contributing to SDG 14 extends beyond traditional academic study to include hands-on research, policy advocacy, and collaborative projects aimed at improving the health of the oceans and freshwater bodies. The university's involvement in marine biology, marine pollution, and coastal ecosystem conservation aligns with global priorities to protect and restore marine life.

In 2023, UJ's activities continued to strengthen its commitment to sustainable water management and marine biodiversity, particularly through research projects focused on the impact of human activity on marine environments. This report explores the university's major contributions to SDG 14 by detailing key initiatives, collaborative research efforts, and community outreach that focus on the conservation of marine and freshwater ecosystems.

KEY ACTIVITIES AND INITIATIVES

UJ's contribution to SDG 14 has been multifaceted, encompassing research, education, community engagement, and partnerships. The university's ongoing efforts in water quality research, sustainable fisheries, and ocean conservation have placed it at the forefront of academic institutions contributing to SDG 14 in South Africa and beyond.

1. Collaborative Marine Research

The university's Faculty of Science, particularly through its Water and Health Research Centre (WHRC), has been involved in several significant research projects related to marine ecosystems and water quality. In 2023, UJ's researchers continued to explore the impact of pollution on aquatic environments, conducting studies on marine waste, plastic pollution, and the effects of chemical runoff on water bodies. These projects aim to identify solutions to reduce contamination and improve the quality of water in coastal and freshwater ecosystems.

UJ's marine research collaborations with local and international institutions have facilitated significant advancements in understanding the link between human activity and the degradation of marine ecosystems. One such collaboration was with

the Water Research Commission (WRC), which provided funding for a real-time water quality testing system developed at UJ. This system, using drone technology, enables researchers to monitor and manage water bodies in real-time, providing data that can be used for the early detection of pollutants and for promoting sustainable water management.

Another area of research that has gained momentum in 2023 is marine biodiversity conservation. UJ's researchers, particularly from the Centre for Ecological Genomics and Wildlife Conservation, have focused on the conservation of endangered marine species and the restoration of marine habitats. Collaborative studies with national marine conservation agencies have focused on identifying critical marine areas in need of protection and on developing strategies for restoring degraded marine environments.

2. Promoting Sustainable Fisheries

Sustainable fisheries are vital to the well-being of global marine ecosystems, and UJ's research in this area has made significant strides in 2023. UJ's involvement in sustainable fisheries research has included studies on overfishing, illegal fishing practices, and marine resource management. The university has collaborated with local government bodies and international agencies to develop strategies aimed at ensuring the sustainability of fisheries in South Africa and surrounding regions.

One notable project was the university's involvement in the Marine Protected Areas (MPAs) programme, aimed at creating and managing sustainable fisheries through the establishment of protected marine zones. UJ's research has contributed to improving fisheries management practices, providing guidance on how to protect marine species while maintaining a viable fishing industry. Additionally, UJ researchers have worked on sustainable aquaculture practices, focusing on the cultivation of fish and shellfish in controlled environments that have minimal impact on the surrounding ecosystem.

Through these efforts, UJ has helped raise awareness about the importance of responsible fishing and the need for marine spatial planning to ensure the long-term sustainability of both marine ecosystems and local fishing communities.

3. Water and Marine Pollution Research

One of UJ's central contributions to SDG 14 in 2023 has been its research on water and marine pollution, particularly the impacts of plastic waste and chemical pollutants on ocean ecosystems. The university's Environmental Science and Technology teams conducted in-depth studies on the sources, distribution, and impact of pollutants in South African coastal waters, where industrial, agricultural, and urban pollution are significant concerns.

The Centre for Environmental Science at UJ has been leading efforts to identify ways to mitigate the negative effects of marine pollution. In particular, UJ's work on microplastics has gained global recognition, as researchers have developed innovative methods to track and remove plastic waste from marine environments. By utilizing bioremediation techniques, UJ has explored the potential of using natural organisms to break down harmful pollutants, contributing to the restoration of contaminated marine environments.

In addition, UJ has been involved in public education and outreach campaigns to raise awareness about the consequences of marine pollution and the importance of reducing plastic waste. These initiatives have helped promote sustainable consumption patterns and plastic recycling practices in South African communities.

4. Capacity Building and Community Engagement

UJ's contribution to SDG 14 has also been driven by its efforts to engage and empower local communities in the conservation of water resources and marine ecosystems. The Water and Health Research Centre (WHRC) has been instrumental in leading community outreach programmes that focus on water conservation, wastewater treatment, and the importance of protecting aquatic life. In 2023, UJ collaborated with local schools, community groups, and NGOs to provide educational workshops on sustainable water use and the impacts of pollution on local aquatic systems.

The Funda UJabule School, in collaboration with the Gauteng Department of Education, has also integrated marine science into its curriculum, encouraging young students to engage in research projects on marine ecosystems and water quality. These educational initiatives serve as a model for promoting environmental stewardship among the next generation.

In addition, UJ facilitated several volunteer programmes where students and staff worked directly with communities to promote sustainable practices. This included initiatives such as clean-up campaigns at local beaches, the installation of eco-friendly waste disposal systems, and the promotion of sustainable agricultural practices that reduce water pollution and chemical runoff.

CONCLUSION

The University of Johannesburg has made significant contributions to the achievement of SDG 14: Life Below Water through a combination of research, community engagement, and global partnerships aimed at ocean conservation, sustainable fisheries, and marine pollution prevention. UJ's continued focus on sustainable water management and marine biodiversity has positioned the university as a leading academic institution in South Africa dedicated to preserving marine ecosystems for future generations.

Looking ahead, UJ remains committed to advancing research on marine conservation, promoting sustainable water practices, and fostering collaborative partnerships to address the challenges facing aquatic ecosystems globally. Through continued efforts in education, research, and community outreach, UJ is poised to play an even greater role in advancing SDG 14 and contributing to the global movement for sustainable development.

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