SDG 14: Life Below Water

Progress Report

2024 – 25

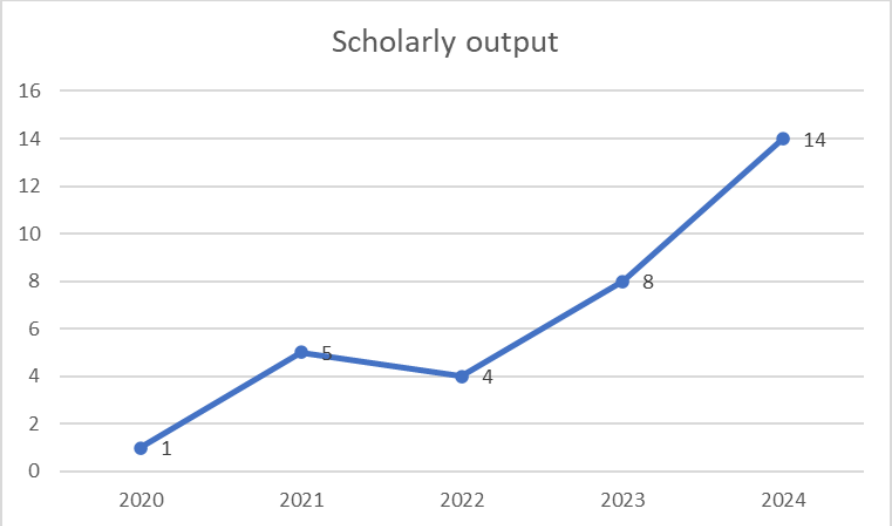
Introduction

Sustainable Development Goal 14, Life Below Water, focuses on conserving oceans, seas, and marine resources. While JGU is an inland institution, its environmental scholarship, blue-carbon research, water governance studies, and interdisciplinary sustainability efforts significantly contribute to advancing SDG 14 at national and global levels.

With oceans producing over half of the world's oxygen, storing 50 times more carbon than our atmosphere, and supporting the livelihoods of 3 billion people, SDG 14 stands at the core of climate resilience and ecological stability. JGU's engagement in coastal ecosystems, especially through mangrove conservation and blue-carbon research, aligns with cutting-edge global sustainability science.

1. Scholarly Output

The scholarly output for SDG 14 at JGU has shown a strong upward trajectory over the past five years. From just 1 publication in 2020, research contributions have expanded steadily, reaching 14 outputs in 2024. This growth reflects the university's increasing emphasis on marine sustainability, blue-carbon systems, and water–ecosystem research. The rising trend demonstrates JGU's strengthening academic commitment to advancing SDG 14.



2. Research Contributions to SDG 14

Even though SDG 14 is a specialised domain, JGU has active contributions, particularly through environment-focused faculty and specialised centres.

A major contribution to SDG 14 comes from research led by JGU environmental scientists on coastal and estuarine ecosystems, especially the Indian Sundarbans. One

of JGU's prominent researchers, Professor Abhiroop Chowdhury, undertakes extensive work on:

- Mangrove restoration initiatives
- Blue carbon sequestration and its optimisation
- Impact of development activities on coastal ecosystems
- Monitoring soil-based carbon stocks in tidal forests

In the Sundarbans, the carbon stored in mangrove soil is four times higher than in boreal or rainforest systems, indicating enormous mitigation potential. This work directly advances global priorities around blue-carbon accounting and coastal ecosystem resilience.

This research places JGU at the forefront of SDG 14-aligned science, supporting conservation strategies, community-based livelihood alternatives, and long-term climate pathways for vulnerable deltaic ecosystems.

3. Academic Integration of SDG 14

JGU's interdisciplinary curriculum integrates themes essential for SDG 14 through various electives and academic programmes. One relevant offering includes:

Maritime Environmental History – A course that examines human-ocean interaction, maritime ecological change, and the socio-environmental histories of coastal regions.

Other environment-focused courses develop foundational knowledge in:

- Biodiversity Conservation
- Environmental Governance
- Water Systems
- Ecological Policy and Sustainability

Together, these programmes strengthen students' awareness of marine and aquatic sustainability from a socio-ecological perspective.

4. Campus Stewardship and Indirect Support to SDG 14

While SDG 14 focuses primarily on marine ecosystems, inland institutions contribute through water conservation, pollution prevention, and sustainable resource use—all of which directly benefit downstream aquatic environments.

JGU implements several initiatives that ensure minimised freshwater extraction and reduced contamination risk:

- 59 groundwater recharge pits that maintain aquifer levels
- RO filtration systems ensuring safe drinking water
- Sewage Treatment Plants (STPs) that recycle wastewater for irrigation—dramatically reducing the strain on local water systems

- Free drinking-water stations to cut down single-use plastics, reducing potential pollution load on waterways

These initiatives contribute indirectly to SDG 14 by reducing land-based pollution sources.

JGU follows a three-bin waste segregation system, biomedical waste protocols, and an expanding circular-economy framework. Controlled waste streams and reduced landfill dependency prevent harmful contaminants from entering soil and water systems.

Climate change is a leading threat to oceans. JGU's actions, such as generating over 11,82,486 kWh of renewable energy in 2024, shifting to EVs, and reducing Scope 1 and 2 emissions by 45%.

5. Partnerships and Policy Engagement Relevant to SDG 14

JGU's climate and sustainability networks enhance its contribution to ocean-related sustainability:

- Collaboration with global policymakers and researchers on climate resilience and environmental governance.
- Participation in global accords such as CANIE, reinforcing climate action and integrated environmental policymaking.

These alliances strengthen holistic environmental outcomes that inevitably support marine ecosystems.