

## **[CORE] Social Responsibility (SR)**

### **Sub Criterion: 5.3**

#### **SR4 Environmental impact**

#### **Sustainability Report**

#### **Life Below Water (SDG 14)**

Sustainable Development Goal 14 (SDG 14) – *Life Below Water* – emphasizes the conservation and sustainable use of oceans, seas, and marine resources. Although SRHU is situated in a non-coastal, inland region, the university significantly contributes to this global agenda through scientific research, water ecosystem management, and biotechnological innovation aimed at improving aquatic environments. The initiatives undertaken at SRHU reflect the university's commitment to environmental stewardship, freshwater resource sustainability, and aquatic biodiversity conservation.

## 1. Academic and Research Infrastructure

The **School of Biological & Biomedical Sciences (SBBS)** at SRHU houses two dedicated laboratories that contribute directly to research and capacity-building under SDG 14:

- **Algal Culture Laboratory**

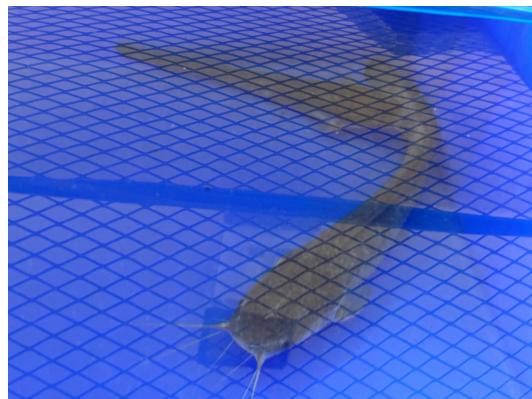
Facilitates the isolation, cultivation, and study of microalgae with potential applications in wastewater treatment, bioenergy, and environmental monitoring. Supports academic training and interdisciplinary research in algal biotechnology and aquatic health.



**Algal Cultivation Laboratory at School of Biosciences, SRHU**

- **Aquatic Toxicology Laboratory**

Conducts bioassays and ecotoxicological evaluations to assess the impact of pollutants and emerging contaminants on aquatic organisms and ecosystems. Plays a key role in environmental risk assessment and water quality monitoring of inland water bodies.



**Aquatic toxicology lab at the School of Biosciences at SRHU**

## 2. Research Projects Aligned with SDG 14

SRHU supports both **intra- and extramural research projects** focused on improving freshwater ecosystems and promoting sustainable aquatic practices:

### **A. Upgrading Plant-Microbe-Based Approach to Enhance Phytoremediation Method in Contaminated Water Bodies**

**Principal Investigator:** Dr. Vivek Kumar

**Duration:** 1 year

**Funding Type:** Intra-mural

This project focuses on enhancing natural water remediation processes using symbiotic plant-microbe systems. It aims to reduce the ecological footprint of anthropogenic pollutants and restore aquatic ecosystems using bio-based sustainable technologies.

### **B. Bio-Prospecting of Microalgae for Biomass Production and Treatment of Hospital Wastewater**

**Principal Investigator:** Dr. Geeta Bhandari

**Duration:** 3 years

**Funding:** ₹9,75,000

**Funding Type:** Extramural

This project aims to explore the dual potential of indigenous microalgae in producing bio-resources and treating hospital effluents. It focuses on developing eco-friendly wastewater treatment systems and supports water sustainability and pollution reduction.

### 3. Research Publications Supporting SDG 14

SRHU faculty members have published peer-reviewed research that contributes to the understanding and advancement of aquatic health, water purification technologies, and bioremediation strategies. These publications highlight topics such as:

SN	PUBLICATION TITLE	DOI
1.	Advancements in energy storage applications: harnessing the potential of fish industry waste	10.1007/s43939-024-00161-y
2.	Micro-algae: Revolutionizing food production for a healthy and sustainable future	10.1016/j.jafr.2023.100939
3.	Fishers 4.0: Revolutionizing Contemporary Fisheries Management through Industry 4.0 Integration	10.1109/HISET61796.2024.00054
4.	United nations sustainable development goals in the context of hydrological extremes	10.1016/B978-0-443-21499-8.00014-3
5.	Impact of Microorganism-Based Bioremediation on the Fauna and Flora of Different Matrices	10.1201/9781003310136-18
6.	Utilizing marine algal metabolites to fight neurodegenerative diseases	10.3389/fmars.2024.1370839
7.	Probiotics in Aquaculture	10.1201/9781003408543-7

These scholarly contributions play a crucial role in building scientific knowledge and practical applications related to aquatic sustainability, freshwater biodiversity, and environmental safety.