

Report on

# Sustainable Development Goal 15



LIFE ON Land



# SDG 15 Life on Land

# 15.1 Research on Land Ecosystems

#### 15.1.1 Life on Land: CiteScore

Swami Rama Himalayan University demonstrates significant scholarly engagement in research supporting SDG 15 – Life on Land, encompassing biodiversity conservation, ecosystem restoration, phytoremediation, and sustainable soil and water management. Publications addressing microbial bioremediation, nanotechnology for remediation, phycoremediation, and sustainable agriculture appear in a wide range of reputable journals and edited books. Across 44 publications (2017–2025), CiteScores range from 0.7 to 18.1, reflecting contributions from niche ecological studies to globally competitive environmental research. Notable outlets include Chemosphere (CiteScore 18.1), Environmental Pollution (16.0), Frontiers in Plant Science (8.8), and Journal of Molecular Liquids (10.5), which signify strong international research visibility. The median CiteScore across the relevant outputs is approximately 5.0–6.0, demonstrating SRHU's consistent presence in mid-to-high-impact journals aligned with terrestrial ecosystem sustainability.

Metric	Value
Total publications corresponding to SDG 15	44
Publications with CiteScore > 5	17
Proportion above 5.0	≈ 39 %
Average CiteScore (overall)	≈ 6.2
Highest CiteScore recorded	18.1 (Chemosphere, 2022)

# 15.1.2 Life on Land: FWCI

SRHU's SDG-15-aligned research exhibits strong citation performance globally. The Field-Weighted Citation Impact (FWCI) values range from 0.06 to 15.2, indicating a spectrum that includes both emerging niche work and highly influential studies. High-impact examples include Journal of Agriculture and Food Research (FWCI 15.2), Environmental Pollution (7.14), Chemosphere (5.88), and Frontiers in Plant Science (6.72), showcasing substantial international recognition. The average FWCI across publications with available data is approximately 3.5 - 4.0, signifying that SRHU's research in terrestrial sustainability is cited nearly four times more often than the global average for comparable disciplines.

Metric	Value
Total publications corresponding to SDG 15	44
Publications with FWCI > 1	24
Proportion above 1.0	≈ 55 %
Average FWCI (overall)	≈ 3.8
Highest FWCI recorded	15.2 (Journal of Agriculture and Food Research, 2024)



#### 15.1.3 Life on Land: Publications

Swami Rama Himalayan University (SRHU) demonstrates strong scholarly engagement in advancing **SDG 15** – **Life on Land** through impactful research on biodiversity conservation, ecosystem restoration, phytoremediation, and sustainable land management. Between 2017 and 2025, SRHU researchers produced **44 Scopus-indexed publications** in reputed international journals and edited volumes such as *Chemosphere*, *Environmental Pollution*, and *Frontiers in Plant Science*. These studies focus on microbial and algal bioremediation, nanobiotechnology for pollution control, conservation of endangered Himalayan flora, and sustainable agricultural practices. Faculty from Biotechnology, Environmental Science, Microbiology, and Agriculture have collaborated extensively, contributing interdisciplinary solutions for restoring degraded ecosystems and protecting terrestrial biodiversity. Collectively, this body of work underscores SRHU's commitment to promoting environmental sustainability and advancing the global vision of **UN SDG 15** – **Life on Land**.

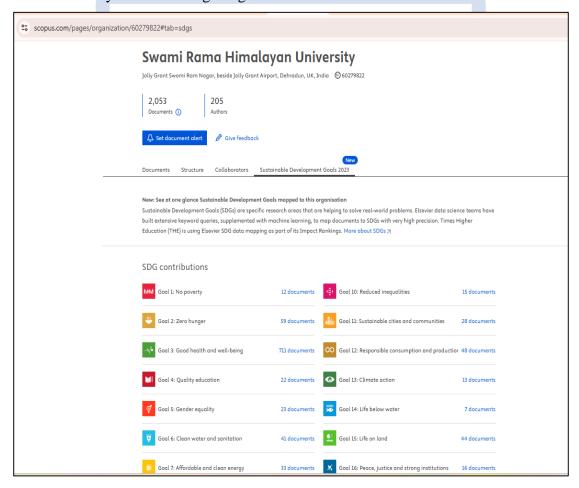




Table 1: Research Publications Addressing Themes Related to SDG 15 - Life on Land

S. No	Paper Title	Authors	Journal / Book Name	Year	Cite Score	FWCI
1	Isolation and Characterization of Plant Growth Promoting Endophytes from <i>Linum Usitatissimum</i>	Bhandari, G.; Choudhary, S.; Deogaonkar, A.;; Mittal, A.; Gangola, S.	Research in Ecology	2025	1.3	
2	Environmental restoration of polyaromatic hydrocarbon-contaminated soil through sustainable rhizoremediation: insights into bioeconomy and high-throughput systematic analysis	Das, N.; Vijay, K.; Chaure, K.; Pandey, P.	Environmental Science Advances	2025	4.5	0.91
3	Biological removal of iron content from water sources using iron-oxidizing bacteria: a review	Bahuguna, M.; Joshi, N.; Bhandari, G.;; Anggayasti, W.L.; Huda, N.	Environmental Pollutants and Bioavailability	2025	6.5	
4	Investigating chemical pretreatment methods: Valorization of wheat straw to enhance polyhydroxyalkanoate (PHA) production with novel isolate Bacillus paranthracis RSKS-3	Sachan, R.S.K.; Devgon, I.; Sharma, V.; Suyal, D.C.; Karnwal, A.	Heliyon	2024	4.1	1.04
5	Biofortification as a solution for addressing nutrient deficiencies and malnutrition	Naik, B.; Vijay, K.; Rizwanuddin, S.; Khan, J.M.; Rustagi, S.	Heliyon	2024	4.1	2.8
6	Micro-algae: Revolutionizing food production for a healthy and sustainable future	Naik, B.; Mishra, R.; Vijay, K.; Bhatt, S.C.; Rizwanuddin, S.	Journal of Agriculture and Food Research	2024	7.5	15.2
7	Exploring the potential of novel Bacillus sp. G6: Isolation, characterization, and optimization of biosurfactant production from oilcontaminated soil	Rawat, G.; Vijay, K.; Kumar, A.; Khan, J.M.; Kumar, V.	Journal of Molecular Liquids	2024	10.5	0.92
8	Impact of Artificial Intelligence (AI) in Bioremediation of Dairy Effluent by Microalgae and the Potential Application of the Produced Lipid Byproducts	Dhillon, N.; Kumar, V.R.; Bhandari, G.; Gupta, S.	Internet of Medicine for Smart Healthcare	2024		
9	Valorization of wastewater through bioremediation approach	Aswal, R.S.; Prasad, M.; Kumar, A.	Biotechnologies for Wastewater Treatment and Resource Recovery: Current Trends and Future Scope	2024		1.26
10	Nutraceutical Potential of Staple Food Crops	Joshi, A.; Gupta, A.K.; Jha, A.K.; Vijay, K.; Rustagi, S.	Herbal Nutraceuticals: Products and Processes	2024		
11	Impact of Microorganism- Based Bioremediation on the Fauna and Flora of Different Matrices	Mathur, A.; Koul, A.; Rani, A.; Reddy, M.S.	Bioremediation of Environmental Toxicants: Sources, Mechanism, Impact on Human Health and Bioremediation Approaches	2024		



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12	Editorial: Potential of the plant rhizomicrobiome for bioremediation of contaminants in agroecosystems	Bhandari, G.; Gangola, S.; Bhatt, P.; Rafatullah, M.	Frontiers in Plant Science	2024	8.8	6.72
13	Microalgae-based bioremediation of heavy metals and emerging contaminants	Rajput, V.; Dhatwalia, V.K.; Jaiswal, K.K.;; Kurbatova, A.I.; Vlaskin, M.S.	Algal Biotechnology	2023		0.76
14	Assessment of the genetic fidelity of true-to-type regenerants of medicinal plant <i>Rheum emodi</i> using RAPD and ISSR molecular markers	Sweta, U.; Anjali, U.; Vijay, K.; Sanjay, G.	Research Journal of Biotechnology	2023	0.7	
15	Esterase and ALDH dehydrogenase-based pesticide degradation by <i>Bacillus brevis</i> 1B from a contaminated environment	Gangola, S.; Bhandari, G.; Joshi, S.;; Simsek, H.; Bhatt, P.	Environmental Research	2023	14.7	3.22
16	Highly Potent Antioxidant/Antibacterial Biogenic ZnO Nanoparticles- Enabled Nano-Scavenger Reinforced by Aegle marmelos (Linn) Rind's Extract	Kumar, A.; Rustagi, S.; Malik, S.M.;; Vijay, K.; Chaudhary, V.	ECS Journal of Solid State Science and Technology	2023	4.4	0.96
17	Nanotechnology for bioremediation of industrial wastewater treatment	Kumari, M.; Bora, J.; Dhasmana, A.; Sinha, S.; Malik, S.M.	Advanced Application of Nanotechnology to Industrial Wastewater	2023		1.75
18	Energy from Waste: Poterioochromonas malhamensis Used for Managing Dairy Effluent and Producing Valuable Microalgal Lipid	Dhillon, N.; Gupta, S.; Kumar, V.R.; Bhandari, G.; Arya, S.	Journal of Pure and Applied Microbiology	2023	1.6	0.28
19	Applications of Bioremediation in Treatment of Environmental Pollution	Kumari, P.; Nag, S.; Dhasmana, A.; Bora, J.; Malik, S.M.	Advanced and Innovative Approaches of Environmental Biotechnology in Industrial Wastewater Treatment	2023		
20	Exploring microbial diversity responses in agricultural fields: a comparative analysis under pesticide stress and non-stress conditions	Gangola, S.; Joshi, S.; Bhandari, G.;; Bukhari, N.A.W.; Rani, R.	Frontiers in Microbiology	2023	8.5	1.85
21	Rhizospheric bacteria: the key to sustainable heavy metal detoxification strategies	Joshi, S.; Gangola, S.; Bhandari, G.;; Malik, S.M.; Sláma, P.	Frontiers in Microbiology	2023	8.5	3.52
22	Nanotextured Materials for Soil Health	Adeleke, B.S.; Ayilara, M.S.; Sharma, D.;; Bhandari, G.; Chaudhary, A.	Advances in Nanotechnology for Smart Agriculture Techniques and Applications	2023		0.79
23	Microbial exopolysaccharides and their application for bioremediation of environmental pollutants	Vijaylakshmi; Hemwati Nandan, R.M.; Chaudhary, S.; Bhandari, G.	Advanced Microbial Technology for Sustainable Agriculture and Environment	2023		4.17
24	Remediation of heavy metals by rhizospheric bacteria and	Gangola, S.; Joshi, S.; Bhandari, G.;; Bhandari, N.S.; Mittal, A.	Advanced Microbial Technology for	2023		6.25
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	their mechanism of detoxification		Sustainable Agriculture and Environment			78.0
25	Omics approaches to pesticide biodegradation for sustainable environment	Gangola, S.; Joshi, S.; Bhandari, G.;; Kumar, S.; Pandey, S.C.	Advanced Microbial Techniques in Agriculture Environment and Health Management	2023		11.2
26	Microbial Biosurfactants and Their Implication Toward Wastewater Management	Rawat, G.; Choudhary, R.; Kumar, V.R.	Handbook of Environmental Chemistry	2023	2.1	
27	Exploring Microbial-Based Green Nanobiotechnology for Wastewater Remediation: A Sustainable Strategy	Malik, S.M.; Dhasmana, A.; Preetam, S.;; Singh, R.K.; Rajput, V.D.	Nanomaterials	2022	9.2	1.28
28	Algae in wastewater treatment, mechanism, and application of biomass for production of value-added product	Bhatt, P.; Bhandari, G.; Turco, R.F.;; Bhatt, K.; Simsek, H.	Environmental Pollution	2022	16	7.14
29	Occurrence, Distribution, Conservation, Ethanobotanical and Pharmacological aspects of endangered medicinal herb belonging to Genus Rheum	Sweta, U.; Anjali, U.; Vijay, K.; Sanjay, G.	Research Journal of Chemistry and Environment	2022	0.7	0.06
30	Microalgae: A promising tool for pesticide mitigation in wastewater	Rajput, V.; Jaiswal, K.K.; Dhatwalia, V.K.;; Kumar, S.K.; Verma, M.	Dhatwalia, V.K.;; Kumar, Rioremediation 2			0.41
31	Evaluation of genetic diversity and population structure of Angelica glauca of Uttarakhand region using ISSR markers	Tarangini, R.; Sanjay, G.	Research Journal of Biotechnology	2022	0.7	
32	Biotechnological tools to elucidate the mechanism of pesticide degradation in the environment	Gangola, S.; Bhatt, P.; Alagarasan, J.K.;; Bhatt, K.; Rene, E.R.	Chemosphere	2022	18.1	5.88
33	Novel mechanism and degradation kinetics of pesticides mixture using <i>Bacillus</i> sp. strain 3C in contaminated sites	Gangola, S.; Sharma, A.; Joshi, S.;; Kim, W.; Bhatt, P.	Pesticide Biochemistry and Physiology	2022	6.2	4.99
34	Assessment of genetic diversity of <i>Rheum</i> species (Endangered Medicinal Herb of Indian Himalayan Region) using molecular markers	Anjali, U.; Akhilesh, K.; Sweta, U.; Vijay, K.; Sanjay, G.	Research Journal of Biotechnology	2021	0.7	
35	Microbial Fabricated Nanosystems: Applications in Drug Delivery and Targeting	Sachin, K.; Karn, S.K.	Frontiers in Chemistry	2021	8.4	0.44
36	Rhizobiont in Bioremediation of Hazardous Waste	Kumar, V.R.; Prasad, R.; Kumar, M.K.M.	Rhizobiont in Bioremediation of Hazardous Waste	2021		1.21
37	Yartsagunbu: Transforming people's livelihoods in the Western Himalaya	Yadav, P.K.; Saha, S.; Mishra, A.K.;; Dasgupta, S.; Shrestha, U.B.	ORYX	2019	5.1	1.89
38	Phycoremediation of Pollutants for Ecosystem Restitution	Verma, N.; Sharma, S.V.; Dhasmana, A.; Kumar, V.	Microorganisms for Sustainability	2019	3.1	0.19



39	Plant-Microbe-Soil Interactions for Reclamation of Degraded Soils: Potential and Challenges	Upadhyay, N.; Vishwakarma, K.; Singh, J.;; Tripathi, D.K.; Sharma, S.V.  Microorganisms for Sustainability		2019	3.1	0.58
40	Microbial Action on Hydrocarbons	Kumar, V.R.; Kumar, M.K.; Prasad, R.				2.71
41	Phytobiont and Ecosystem Restitution	Kumar, V.V.; Kumar, M.K.M.; Prasad, R.	Phytobiont and Ecosystem Restitution	2018		0.73
42	Mycoremediation of textile dyes: Application of novel autochthonous fungal isolates	Sweety; Vats, S.; Kumar, M.K.M.;; Kumar, V.R.; Garg, S.K.  Environmentasia		2017	1.3	0.18
43	Tolerance and reduction of chromium(VI) by <i>Bacillus</i> sp. MNU16 isolated from contaminated coal mining soil	Upadhyay, N.; Vishwakarma, K.; Singh, J.; ; Tripathi, D.K.; Sharma, S.V.	Frontiers in Plant Science	2017	8.8	3.97
44	Nitrogen and Carbon Sources Influencing Mycoremediation of Textile Dyes Using Novel Autochthonous Fungal Isolates	Sweety; Vats, S.; Kumar, M.K.M.;; Gupta, S.; Garg, S.K.  Analytical Chemistry Letters		2017	2.1	0.1

Evidence: https://srhu.edu.in/wp-content/uploads/2025/11/SDG-Publications.pdf

# 15.2 Supporting Land Ecosystems Through Education

SRHU continues to uphold its commitment to the principles of environmental stewardship and sustainable development by implementing a range of initiatives aligned with the United Nations Sustainable Development Goal 15: *Life on Land*. The University's efforts emphasize the conservation of ecosystems, sustainable land management, biodiversity enhancement, and pollution reduction across its 200-acre green campus and adjoining communities.

#### **Inclusive Curriculum – SDG 15: Life on Land**

Sustainable Development Goal (SDG) 15 focuses on protecting, restoring, and promoting the sustainable use of terrestrial ecosystems, managing forests responsibly, combating desertification, halting and reversing land degradation, and preventing biodiversity loss. Recognizing the critical importance of these goals, SRHU integrates the principles of land conservation, ecosystem protection, and biodiversity preservation into its teaching, research, and community engagement initiatives.

#### **Curriculum Integration**

In alignment with SDG 15, SRHU has made conscious efforts to embed sustainability concepts into the curriculum across relevant disciplines. Courses emphasize the interrelationship between humans and nature, covering topics such as natural resource management, environmental protection, soil and water conservation, forest and wildlife preservation, and sustainable agriculture. The curriculum encourages students to understand



the value of ecological balance and the importance of restoring degraded ecosystems for the well-being of present and future generations.

#### **Highlights:**

- Experienced and multidisciplinary faculty dedicated to environmental education and sustainable development.
- **State-of-the-art laboratories** supporting practical learning and research in areas such as environmental microbiology, molecular biology, and plant sciences.
- Experiential Learning Facilities including a Herbal Garden, Greenhouse Units, Mushroom
   Cultivation Lab, Hydroponics and Plant Tissue Culture Laboratories that provide hands-on training
   in plant propagation, biodiversity study, and conservation practices.
- Composting and Bio-fertilizer Units that promote sustainable soil management and waste-to-resource conversion, helping students understand eco-friendly agricultural systems.
- Field and Community Engagement through activities like tree plantation drives.
- Research focusing on biodiversity conservation, soil health improvement, and land restoration.

#### **Campus Biodiversity Park**

SRHU has developed a comprehensive Biodiversity Park that serves as a living laboratory for students, faculty, and researchers. The park features a rich collection of native and region-specific plant species, promoting in-situ conservation and fostering an understanding of ecosystem dynamics. It provides a hands-on platform for ecological studies, environmental research, and biodiversity documentation. The Biodiversity Park not only enhances the aesthetic and ecological value of the campus but also serves as a centre for environmental education, conservation awareness, and sustainability learning.



**Biodiversity Park at SRHU** 



#### **Botanical Garden**

The Botanical Garden at SRHU features a diverse collection of plant species, including medicinal, aromatic, and ornamental varieties. It serves as an essential learning and research hub for students of botany, environmental science, and related disciplines. The garden provides practical exposure to plant identification, taxonomy, propagation, and conservation techniques. It also supports ongoing research on medicinal plant use, biodiversity documentation, and ecosystem preservation, thereby promoting sustainable interactions between humans and nature.



**Botanical Garden at SRHU** 

# **Sustainable Urban Forest**

The campus includes designated forest zones where native trees and natural vegetation are preserved and nurtured, providing students with real-world opportunities to study ecosystem dynamics, carbon sequestration, and biodiversity conservation. These green zones function as natural laboratories, allowing interdisciplinary learning in ecology, environmental management, and sustainable development. They also serve as carbon sinks, help regulate air quality, and maintain ecological balance while offering serene spaces for reflection, recreation, and study. This initiative embodies SRHU's commitment to experiential education, urban greening, and the holistic promotion of environmental stewardship within the institutional landscape.







Sustainable Urban Forest at SRHU

# Herbal and Medicinal Plant Garden

SRHU maintains a dedicated Herbal and Medicinal Plant Garden, cultivating a diverse collection of plants known for their therapeutic and pharmacological properties. This garden serves as a vital resource for research and education in Ayurvedic medicine, pharmacognosy, and pharmaceutical sciences. It provides students and researchers with hands-on experience in plant identification, cultivation, and the study of bioactive compounds, bridging traditional knowledge with modern scientific exploration.





Herbal and Medicinal Plant Garden at SRHU



# **Learning Approach**

The curriculum design emphasizes experiential learning, interdisciplinary collaboration, and research-based education. Students are encouraged to apply classroom concepts in real-world contexts through research projects, field visits, and community outreach programs. This inclusive approach fosters awareness, responsibility, and action towards protecting terrestrial ecosystems and promoting sustainable land use.

#### **Outcome**

Through this inclusive and sustainability-driven curriculum, SRHU nurtures a generation of environmentally conscious professionals who can contribute effectively to land restoration, biodiversity conservation, and sustainable ecosystem management. The University's academic and practical initiatives collectively support the vision of SDG 15: Life on Land, ensuring the responsible use of natural resources and the preservation of the planet for future generations.

Evidence: <a href="https://srhu.edu.in/wp-content/uploads/2025/05/Green-Space-in-Campus.pdf">https://srhu.edu.in/wp-content/uploads/2025/05/Green-Space-in-Campus.pdf</a>

#### 15.2.1 Event About Sustainable Use of Land

**Tree Plantation Drive** 

**Date of Event:** 20 September 2023

No. of Participants: 150 students and community members

**Program Objectives:** To promote environmental sustainability and community participation through a plantation drive fostering ecological awareness and responsibility.

**Evidence:** <a href="https://srhu.edu.in/media-events/plantation-drive-undertaken-by-hims-for-family-adoption-programme/">https://srhu.edu.in/media-events/plantation-drive-undertaken-by-hims-for-family-adoption-programme/</a>

**Event Coordinator:** Dr. Neha Sharma, Assistant professor, Department of Community Medicine, Himalayan Institute of Medical Sciences

#### **Program Description:**

The Himalayan Institute of Medical Sciences (HIMS), SRHU, organized a Plantation Drive as part of its Family Adoption Programme, reinforcing the institute's commitment to Sustainable Development Goal (SDG) 15 – Life on Land. This initiative sought to integrate healthcare outreach with environmental stewardship by encouraging students to engage with rural communities, supporting both family health and ecological sustainability. In collaboration with Gram Pradhan Rohit Nautiyal and the Principal of Primary School Gauhri Mafi, the event witnessed active participation from more than 150 students and community members in Gauhri Mafi village, Doiwala. During the drive, participants planted 434 tree saplings, including Guava, Jamun, Litchi, Mango, Tulsi, Majestic Palms, and Marigold, at key community locations such as the Anganwadi Centre and the primary school. These species were carefully chosen for their adaptability to local climatic conditions and their ecological benefits—ranging from air purification and carbon sequestration to the creation of wildlife habitats—thereby contributing directly to the goals of conserving and restoring terrestrial ecosystems.







**Tree Plantation Drive at SRHU** 

#### **Enhancing Environmental Awareness and Education by Harela Celebration**

Date of Event: 16 July 2023

**Program Objectives:** To foster environmental stewardship and deepen cultural connection through campuswide tree planting during the Harela festival.

# **Program Description:**

As part of its continued dedication to environmental sustainability, SRHU reinforced its "Go Green Campus" campaign on the auspicious occasion of the Harela festival—a traditional Uttarakhand celebration symbolizing nature worship and environmental conservation. This reflects SRHU's enduring commitment to fostering a harmonious relationship between humanity and the environment. The plantation drive was organized within the SRHU campus, where university leadership, faculty, staff, and students actively participated in tree planting and awareness activities. The event highlighted the importance of cultural values in driving ecological responsibility and community participation. During the drive, approximately 100 saplings of native species, including Jamun, Litchi, Amla, Pipal, Haldi, Amaltas, Lagerstroemia, and Gulmohar, were planted across the campus. These indigenous species, well-suited to the local climate, enhance biodiversity, maintain ecological balance, and require minimal external inputs. The plantation contributes to carbon sequestration, air purification, soil conservation, and the creation of microhabitats for birds, pollinators, and other wildlife, supporting essential ecological processes. By integrating cultural heritage with ecological stewardship, the Harela plantation drive demonstrates SRHU's proactive approach to nurturing a green and sustainable environment for present and future generations.







Plantation Drive on the Occasion of Harela at SRHU

# 15.2.2 Sustainably Farmed Food on Campus

Swami Rama Himalayan University (SRHU) promotes sustainable agriculture and environmental stewardship through its Community Garden and research initiatives. The campus cultivates vegetables and herbs organically, while programs in crop diversification, cereal and vegetable cultivation, and seed production strengthen food security. Innovative practices like *Cordyceps militaris* cultivation, mushroom farming from agricultural waste, tissue culture, and hydroponics support biodiversity, resource efficiency, and alternative livelihoods. By combining hands-on gardening, research, and training in eco-friendly techniques, SRHU fosters a sustainable campus ecosystem and actively contributes to the conservation and restoration of terrestrial ecosystems.

Policy: <a href="https://srhu.edu.in/policy-for-sustainably-farmed-food-on-campus/">https://srhu.edu.in/policy-for-sustainably-farmed-food-on-campus/</a>

#### Sustainably farmed food on Campus: Community Garden

Swami Rama Himalayan University (SRHU) promotes sustainable living and community engagement through its Community Garden initiative. The garden cultivates a variety of vegetables and herbs using organic and eco-friendly farming practices, serving as a practical platform for hands-on learning in sustainable agriculture. By growing food on campus with environmentally conscious methods, the initiative fosters biodiversity, soil health, and resource conservation, while encouraging teamwork and shared responsibility among the campus community. This raises awareness about eco-friendly food production and exemplifies SRHU's commitment to nurturing a greener, more sustainable environment in alignment with SDG 15 – Life on Land.



Community Garden at SRHU



#### Sustainably farmed food on Campus: Mushroom Cultivation

SRHU has been actively contributing to **Sustainable Farming th**rough its innovative initiatives in **mushroom cultivation** and sustainable natural resource management. The university's School of Biosciences promotes mushroom farming not only as a source of nutrition and income but also as an **eco-friendly agricultural practice** that supports forest and soil conservation. Mushroom cultivation utilizes agricultural and forest waste—such as straw, sawdust, and plant residues—as substrates, thereby reducing environmental pollution and promoting the recycling of organic matter. This also protects terrestrial ecosystems while fostering sustainable livelihoods in the Himalayan region. By cultivating both edible and medicinal mushrooms like *Cordyceps militaris*, *Pleurotus ostreatus*, *Hericium erinaceus* and *Lentinus edodes*, SRHU encourages biodiversity preservation and sustainable use of terrestrial ecosystems. Furthermore, through its **Rural Development Institute** (**RDI**) and outreach programs, SRHU trains local farmers and self-help groups in scientific cultivation techniques, enabling them to adopt environmentally responsible livelihoods that minimize land degradation and deforestation. These efforts align with the broader goal of restoring ecosystem balance, reducing pressure on forest resources, and promoting sustainable mountain agriculture.



**Medicinal Mushroom Cultivation at SRHU** 





# **Plant Tissue Culture Laboratory at SRHU**



# Policy for Sustainably Farmed Food on Campus

Approved	Board of Management on 12th January 2019
Notification	Notified by Registrar vide notification No. SRHU/Reg/OO/2019-04 (i) dated 15th January 2019
Reviewed / Revised	Board of Management on 29th March 2022
Notification	Notified by Registrar vide notification No. SRHU/Reg/OO/2022-58 (i) dated 5th April 2022
Next Review	2025-26

**Swami Rama Himalayan University** Swami Ram Nagar, Jolly Grant- 248 016, Dehradun, Uttarakhand

# **Policy for Sustainably Farmed Food on Campus**

Evidence: <a href="https://srhu.edu.in/policy-for-sustainably-farmed-food-on-campus/">https://srhu.edu.in/policy-for-sustainably-farmed-food-on-campus/</a>



# 15.2.3 Maintain and Extend Current Ecosystems' Biodiversity

SRHU through its constituent units, actively promotes sustainable agriculture, biodiversity conservation, and ecosystem restoration in alignment with Sustainable Development Goal 15: Life on Land. The University's extension and outreach initiatives are designed to maintain and extend terrestrial biodiversity by promoting responsible land use, eco-friendly cultivation, and community participation in environmental stewardship. By integrating scientific research with community development, SRHU fosters farming systems that not only ensure food and nutritional security but also safeguard soil health, native flora, and overall ecosystem balance. The University maintains a vibrant green belt spanning approximately 1,60,800 m<sup>2</sup>, featuring more than 5,000 trees and 125 plant species. The presence of 15 bird species, 22 butterfly species, and numerous amphibians and reptiles demonstrates the campus's ecological richness.

# Comprehensive Community Development Programme (CCDP) – Fostering Biodiversity-Based Livelihoods

The Comprehensive Community Development Programme (CCDP) initiated in 2019 serves as a cornerstone of SRHU's efforts to integrate biodiversity conservation with livelihood enhancement. Implemented in the Toli area of Jaiharikhal Block, Pauri Garhwal, the programme emphasizes sustainable and inclusive community development in ecologically sensitive zones of the Himalayan region. Through a participatory and demand-driven approach, the CCDP engages Panchayati Raj Institutions (PRIs), local communities, and especially women's groups to design and implement action plans that protect land resources while improving quality of life. Its core strategy centers on maintaining natural vegetation cover, preventing land degradation, and promoting biodiversity-friendly agriculture that harmonizes livelihood improvement with ecosystem resilience.

#### **Sustainable Agricultural Practices to Protect and Enhance Ecosystem Diversity**

Under CCDP, SRHU promotes the revitalization of fallow and degraded land through the cultivation of climate-resilient, biodiversity-supportive crops such as rosemary, black cardamom, ginger, turmeric, garlic, and chili. These crops, well adapted to non-irrigated and hilly terrains, minimize soil erosion, improve organic matter content, and reduce human—wildlife conflict by being naturally resistant to grazing. The introduction of such species contributes to ecosystem diversification and encourages farmers to adopt land use practices that restore ecological integrity. A value-addition and processing centre established under the initiative further supports sustainable food systems by reducing post-harvest losses and creating market linkages for local produce. By connecting smallholder farmers to sustainable value chains, SRHU ensures that biodiversity conservation translates into tangible economic benefits—promoting an environmentally sound and socially equitable model of growth.

# **Integration of Eco-Conscious Technologies and Youth Engagement**

To encourage youth participation in biodiversity-based agriculture, SRHU has introduced environmentally responsible technologies and practices that optimize land use while reducing ecological pressure. For instance, lemongrass cultivation, covering four villages and involving 90 farmers, produced 185,000 kg of raw material,



yielding 67 kg of essential oil through sustainable distillation methods. The initiative's doorstep payment system ensures fair compensation, enhancing social and economic sustainability. **R**osemary cultivation has also demonstrated the potential for aromatic crops that preserve soil fertility and promote plant diversity in the Himalayan landscape.



Biodiversity Enhancement through Cultivation of High-Value Crops, Trees, and Aromatic Plants under RDI

**Reviving Traditional Crops and Strengthening Agro-Biodiversity:** SRHU's Rural Development Institute continues to prioritize traditional Himalayan crops, which are integral to maintaining agro-ecosystem biodiversity. The cultivation of turmeric, ginger, millets, garlic, and chilies not only preserves genetic diversity but also sustains pollinator populations and soil health.

- **Turmeric:** 1,100 kg harvested from 24 farmers across 14 villages; 285 kg processed into high-quality powder.
- Chili: 8 kg of red chilies processed into powder and sold out within a day.
- **Millets:** *Jhangora* (79 kg), *Manduwa* (50 kg), and *Jhakiya* (10 kg) cultivated and fully marketed, reflecting local demand for biodiversity-rich foods.
- **Ginger and Garlic:** Locally grown, packed in eco-friendly packaging to minimize waste and promote sustainable consumption.

By reviving native crops and strengthening local seed systems, SRHU helps conserve agrobiodiversity, reduce reliance on monocultures, and build climate-resilient farming communities.



Seed Diversity and Ecological Restoration: In 2023, SRHU introduced 600 kg of high-curcumin turmeric seeds sourced from Almora, known for their superior quality and adaptability to local conditions and were distributed to farmers in Toli and neighbouring villages. This initiative not only enhances productivity and income but also contributes to seed diversity conservation, ensuring the long-term resilience of regional crop systems. These sustainable seed interventions improve soil fertility, enhance carbon sequestration, and reduce the ecological footprint of farming, directly contributing to the maintenance and extension of ecosystem biodiversity. Through its integrated efforts in sustainable agriculture, community outreach, and biodiversity-based livelihood promotion, SRHU demonstrates a strong commitment to preserving, restoring, and enhancing terrestrial ecosystems. The University's model links science, sustainability, and social inclusion—ensuring that biodiversity conservation and sustainable food production advance together. These initiatives exemplify the practical realization of SDG 15: Life on Land, reinforcing SRHU's role as a leader in promoting harmony between people, prosperity, and the planet.



Community Cultivation of Turmeric, Apple, and Lemongrass: Enhancing Agro-Biodiversity, Sustainable Farming, and Livelihood Opportunities in the Himalayan Region

#### 15.2.4 Educational Programmes on Ecosystem

As part of its holistic educational approach, SRHU offers a range of courses across its undergraduate programs focused on ecosystems, biodiversity, and sustainable environmental management. These courses ensure that students gain a solid understanding of ecosystem functions, conservation strategies, and the interconnections between human activities and natural habitats from the very beginning of their studies. By highlighting the links between ecosystem health and the Sustainable Development Goals (SDGs), these programs foster ecological literacy and empower students to actively participate in the protection, restoration, and sustainable management of terrestrial and freshwater ecosystems. Through this multi-course approach, the University integrates ecosystem education throughout its curriculum, equipping students with the knowledge and skills needed to tackle



challenges such as habitat loss, deforestation, and land degradation. The specific courses in various programs that address ecosystems, biodiversity, and related environmental issues are listed in the table below:

Program Name	Course Code	UG/PG	Course Title	Course Description
B.Com (Hons.)	BCM207	UG	Environment Studies	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change and promote sustainable development for a balanced future.
B.Sc Nursing	N- COMH (I) 310	UG	Community Health Nursing I including Environmental Science & Epidemiology - Theory	It focuses on health promotion, disease prevention, and community care. It includes Environmental Science and Epidemiology to understand health determinants, environmental impacts like climate change and disease patterns for effective public health practice.
Post Basic B.Sc. Nursing	PBN207	UG	Environmental Science	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
BRT	EVS301	UG	Environmental Science	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
BRIT	EVS301	UG	Environmental Science	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.



Program Name	Course Code	UG/PG	Course Title	Course Description
BMLT	EVS301	UG	Environmental Science	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
B.Optom.	EVS301	UG	Environmental Science	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
BASLP	EVS301	UG	Environmental Science	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
ВОТ	EVS301	UG	Environmental Science	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
BBA	BBA 107	UG	Environment Studies	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental like climate change.



Program Name	Course Code	UG/PG	Course Title	Course Description
B.Sc. (H) Biotechnology	BBTSE 121	UG	Biofertilizers	This course covers the use of microorganisms to enhance soil fertility and plant growth, including production and application of biofertilizers like nitrogen-fixing bacteria and mycorrhizal fungi, with practical training in preparation and efficacy testing.
B.Sc. (H) Biotechnology	AECC 111	UG	Environmental Science-I	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
B.Sc. (H) Biotechnology	BBTOE 231	UG	Bioethics and Biosafety	This course focus on ethical principles, safety measures, and responsible conduct in biological research and biotechnology. It aligns with the SDGs by promoting sustainable scientific practices, protecting human and environmental health, and ensuring ethical innovation for global well-being.
B.Sc. (H) Biotechnology	AECC 231	ŬĠ	Environmental Sciences-II	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
B.Sc. (H) Biotechnology	BBTOE 242	UG	Biotechnology and Human Welfare	This course explores the application of biotechnological tools to improve health, agriculture, and industry. It aligns with SDGs by promoting sustainable biotechnological practices and developing solutions to address environmental and climate challenges.
B.Sc. (H) Biotechnology	BBTDE 351	UG	Animal Diversity I	This course explores the classification, morphology, and ecology of animals, emphasizing their roles and interactions within ecosystems and their contribution to biodiversity and ecological balance.



Program Name	Course Code	UG/PG	Course Title	Course Description
B.Sc. (H) Biotechnology	BBTDE 352	UG	Plant Diversity I	This course covers the structure, reproduction, and classification of plants, highlighting their importance in ecosystems, including energy flow, habitat provision, and maintaining ecological stability
B.Sc. (H) Biotechnology	BBTDE 361	UG	Animal Diversity II	This course extends the study of animal diversity, focusing on complex animal groups, their ecological roles, and interactions within ecosystems, highlighting biodiversity and environmental balance.
B.Sc. (H) Biotechnology	BBTDE 362	UG	Plant Diversity II	This course continues the study of plant diversity, emphasizing advanced plant groups, their ecological functions, and contributions to ecosystem processes, such as energy flow, habitat support, and biodiversity conservation.
B.Sc. (H) Biotechnology	BBTC 502	UG	Industrial Biotechnology	It applies biological systems, organisms, and processes to produce chemicals, fuels, and materials sustainably. It promotes eco-friendly manufacturing, resource efficiency, and reduced environmental impact, supporting SDG goals.
B.Sc. (H) Biotechnology	BBTC 503	UG	Environmental Biotechnology	This course focuses biological processes and organisms to address environmental challenges, such as pollution control, waste management, and ecosystem restoration. It supports SDG-12 and SDG-13 by promoting sustainable resource use and climate-resilient environmental solutions.
B.Sc. (H) Biotechnology	BTBC 601	UG	Biostatistics, Bioethics, Biosafety, IPR & Computers	This course focus on ethical principles, safety measures, and responsible conduct in biological research and biotechnology. It aligns with the SDGs by promoting sustainable scientific practices, protecting human and environmental health, and ensuring ethical innovation for global well-being.
B.Sc. (H) Biotechnology	BBTE 601 A	UG	Molecular Farming	This course explores molecular farming using genetically engineered plants to sustainably produce biomolecules like pharmaceuticals and enzymes advancing eco-efficient biomanufacturing in line with SDGs.



Program Name	Course Code	UG/PG	Course Title	Course Description
B.Sc. (H) Biotechnology	BBTE 601 C	UG	Industrial Waste Management	This course focuses on Industrial Waste Management, emphasizing waste minimization, treatment, and resource recovery strategies for sustainable industry practices.
B.Sc. (H) Microbiology	BMBSE 111	UG	Mushroom Farming	This course focuses on Mushroom Farming, covering cultivation methods, substrate formulation, and value-added processing to promote sustainable food production and waste utilization.
B.Sc. (H) Biotechnology	BBTSE 121	UG	Biofertilizers	This course covers the use of microorganisms to enhance soil fertility and plant growth, including production and application of biofertilizers like nitrogen-fixing bacteria and mycorrhizal fungi, with practical training in preparation and efficacy testing.
B.Sc. (H) Microbiology	AECC 111	UG	Environmental Science-I	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
B.Sc. (H) Microbiology	BMBC 122	UG	Industrial Microbiology	This course explores the use of microorganisms in industrial processes for producing biochemicals, enzymes, and biofuels. It emphasizes sustainable biotechnological practices supporting SDG-13 through eco-friendly innovations.
B.Sc. (H) Microbiology	BBTOE 231	UG	Bioethics and Biosafety	This course focus on ethical principles, safety measures, and responsible conduct in biological research and biotechnology. It aligns with the SDGs by promoting sustainable scientific practices, protecting human and environmental health, and ensuring ethical innovation for global well-being.



Program Name	Course Code	UG/PG	Course Title	Course Description
B.Sc. (H) Microbiology	AECC 231	UG	Environmental Sciences-II	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
B.Sc. (H) Microbiology	BBTOE 242	UG	Biotechnology and Human Welfare	This course explores the application of biotechnological tools to improve health, agriculture, and industry. It aligns with SDGs by promoting sustainable biotechnological practices and developing solutions to address environmental and climate challenges.
B.Sc. (H) Microbiology	BMBC 503	UG	Industrial Microbiology	This course introduces the use of microorganisms in large-scale production of enzymes, biofuels, and pharmaceuticals, promoting sustainable bioprocessing.
B.Sc. (H) Microbiology	BMBC 504	UG	Environmental Microbiology	This course covers the roles of microorganisms in ecosystems, bioremediation, and pollution control, fostering sustainable environmental management.
B.Sc. (H) Microbiology	BMBE 601 A	UG	Bio-fertilizers and Bio- pesticides	This course covers bio-fertilizers and bio-pesticides, exploring the use of beneficial microorganisms to enhance soil fertility and pest management sustainably.
Bachelor of Pharmacy	BP206T	UG	Environmental Sciences	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.



Program Name	Course Code	UG/PG	Course Title	Course Description
B.Tech CSE	HST112	UG	Environmental Studies	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
BCA	HS112T	UG	Environmental Studies	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
B.Sc. Data Science	MD121T	UG	Environmental Studies	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
B.Sc. Yoga Science and Holistic Health	BYS603	UG	Fundamentals of Environmental Science	This course explores the relationships between humans and the natural world. It covers ecological principles, environmental issues, sustainability, conservation, and the impact of human activities on ecosystems, address global environmental challenges like climate change.
MSc Epidemiology	CMEC001	PG	Environmental and Occupational Epidemiology	This course covers Environmental and Occupational Epidemiology, focusing on the study of disease patterns related to environmental and workplace exposures, promoting health risk reduction.
M.Sc. Clinical Research	CMCR517	PG	Environmental & Regulatory Physiology	This course covers Environmental & Regulatory Physiology, focusing on how environmental factors influence physiological processes and regulatory mechanisms, promoting climate-conscious health and sustainability practices.



Program Name	Course Code	UG/PG	Course Title	Course Description
M.Sc. Microbiology	MMBE 302	PG	Industrial Waste Management	This course focuses on methods for minimizing, treating, and recycling industrial waste to protect ecosystems. It integrates sustainable waste management practices supporting SDG-13 through pollution reduction and resource conservation.
M.Sc. Microbiology	MMBE 304	PG	Soil and Agriculture Microbiology	This course covers the role of microorganisms in soil fertility, crop productivity, and sustainable farming practices.
M.Sc. Biotechnology	MBTE 302	PG	Advanced Environmental Biotechnology	This course covers advanced environmental biotechnology, focusing on cutting-edge microbial and bioprocess strategies for pollution control, waste treatment, and ecosystem restoration, promoting sustainable solutions.
M.Sc. Biotechnology	MBTE 305	PG	Agrobiotechnology	It covers the use of biotechnological tools to improve crop yield, resistance, and supporting eco-friendly agricultural practices
M.Sc. Biotechnology	MBTE 310	PG	Energy & Environment	This course covers sustainable energy production, environmental conservation, and the mitigation of climate impacts, promoting practices aligned with SDGs.
M.Sc. Biochemistry	MBCT 301	PG	Environmental Biochemistry & Toxicology	This course focusing on the biochemical impacts of pollutants and toxic substances on ecosystems and human health, promoting sustainable environmental management.

Evidence: <a href="https://srhu.edu.in/wp-content/uploads/2025/11/Course-Mapping-SDGs.pdf">https://srhu.edu.in/wp-content/uploads/2025/11/Course-Mapping-SDGs.pdf</a>

# Integrating Ecosystems and Sustainable Livelihoods in Rural Development

The Rural Development Institute under SRHU advanced its mission of sustainable, community-centred development in the Himalayan foothills of Uttarakhand, integrating ecosystem, livelihood and education initiatives. The thrust was on harnessing local natural-resource contexts, promoting sustainable agriculture, enhancing environmental resilience, and supporting rural communities to build adaptive capacities. 1. Sustainable Livelihoods & Ecosystem-Sensitive Agriculture

**1. Sustainable Livelihoods & Ecosystem-Sensitive Agriculture:** The following sustainable agriculture interventions were taken up in 2023-24.



- The "Comprehensive Community Development Programme (CCDP)" continued its work of converting fallow land into productive uses crops like rosemary, black cardamom, ginger, turmeric and garlic selected because they are suited to non-irrigated, mountainous terrain and wildlife-resistant.
- The programme emphasised ecosystem-sensitive farming: selecting crops adapted to local ecology, reducing pressure on water-intensive crops, and aligning with mountain-environment constraints.
- This connects directly to themes of ecosystem resilience: matching land-use with ecology, reducing ecological stress, using native or resilient species.
- **2. Education, Skill-Building & Community Awareness:** RDI also focused on educational outreach and skill-development, thereby strengthening the human-ecosystem interface. Activities under RDI include education for children from marginalized backgrounds, skill-centre courses (tailoring, handicraft, mobile-repairing, plumbing, etc.). In 2023-24, RDI ran public-education campaigns in select villages: e.g., promoting nutritious local food (millets) to pregnant and lactating women and community members, in collaboration with self-help groups.
- **3. Water, Sanitation & Ecosystem Health:** Healthy ecosystems support water security and sanitation; RDI's development efforts included:
  - Facilitating safe drinking water, sanitation units in rural villages.
  - Capacity building in water & sanitation programmes, often on a village-by-village basis, with community participation in planning/designing.
  - These contribute to ecosystem health by improving human-environment interactions, reducing waterborne disease risk, and promoting sustainable usage of natural water resources.



**Programmes on Ecosystem Conservation** 



# **World Earth Day Celebration**

Date of Event: 22 April 2024

**Program Objectives:** To raise awareness about environmental conservation and promote sustainable practices, with a focus on reducing single-use plastics.

#### **Web Link: For More Information**

On World Earth Day, April 22, 2024, SRHU organized a significant event to raise awareness about environmental protection. The program featured a guest lecture held in the Adikailash auditorium, under the auspices of the National Academy of Sciences Uttarakhand Chapter, Dehradun. Renowned historian and environmentalist, Shri Ajay Sharma, delivered the keynote address, emphasizing the critical need for environmental conservation. He highlighted that Earth is home not only to humans but also to millions of animals and plants, and that human activities are continuously harming the Earth to fulfill their needs, leading to natural disasters. Sharma also shared insights about the history, heritage, and current geographical form of Dehradun city. The Vice-Chancellor of SRHU, Dr. Rajendra Dobhal, noted that the theme for this year's World Earth Day was 'Planet versus Plastic,' aiming to end the use of single-use plastics and find alternatives. He mentioned that SRHU has set an example in environmental conservation, including the establishment of a plastic bank for plastic disposal.



World Earth Day Celebration at SRHU

### **World Earth Day Celebration**

Date of Event: 22 April 2024

**Program Objectives:** To promote environmental awareness and stewardship among young students through hands-on activities, experiential learning, and community engagement focused on biodiversity conservation and sustainable practices.

#### **Web Link: For More Information**

The Community Health Nursing Department of Himalayan College of Nursing (HCN), SRHU celebrated World Earth Day 2024, focusing on environmental conservation and ecosystem awareness. As part of this initiative, an educational and community outreach program was conducted at a Government Primary School in Thano village,



aimed at instilling environmental consciousness among young students. Under the guidance of Dr. Sanchita Pugazhendi, Principal of the College of Nursing, students organized activities such as tree plantation, theme-based role plays, and poster presentations, which highlighted the ecological impact of plastic pollution and the importance of protecting local biodiversity. The tree plantation activity, jointly led by Dr. Sanchita Pugazhendi and Mrs. Kavita Solanki, Principal of the Government Primary School, not only contributed to greening the school campus but also served as a hands-on learning experience demonstrating how vegetation supports soil stability, local climate regulation, and habitat creation for urban and rural ecosystems. The role plays and poster presentations engaged students creatively while teaching them the significance of reducing single-use plastics, conserving water, and maintaining clean habitats, directly linking human behavior to the health of ecosystems. This event exemplifies SRHU's approach to educational programmes on ecosystems, combining awareness, practical action, and community involvement to foster environmental stewardship. By integrating experiential learning with scientific concepts of biodiversity, conservation, and sustainable resource management, the initiative helped students, faculty, and local community members understand their role in protecting ecosystems and promoting sustainable practices in their daily lives.



**World Earth Day Celebration at SRHU** 

#### Commitment to Environmental Protection – World Environment Day Celebration at SRHU

Date of Event: 5 June 2024

**Program Objectives:** To reinforce SRHU's commitment to environmental protection by promoting awareness, education, and community engagement focused on river conservation, biodiversity preservation, and sustainable ecosystem management.

#### **Web Link: For More Information**

SRHU, reaffirmed its commitment to environmental protection by celebrating World Environment Day 2024 through a series of awareness and educational activities. The event was organized in collaboration with the National Academy of Sciences, India (NASI), Uttarakhand Chapter. The central focus of the celebration was on river conservation, biodiversity protection, and sustainable ecosystem management. During the seminar, all participants—faculty, students, and guests—took a pledge to safeguard the environment and to raise awareness in their communities about the importance of sustainable living. Prof. (Dr.) Rajendra Dobhal, Vice-Chancellor of



SRHU, addressed the gathering and emphasized the growing threat of pollution and its detrimental impact on natural resources. He called for collective action to preserve rivers and mitigate drought-related challenges, sharing his personal insights on strategies for river rejuvenation and pollution prevention. Guest speaker Dr. Lokesh Ohri, CEO of *Been There, Doon That*, highlighted the vital role of ecosystem conservation and biodiversity restoration in maintaining ecological balance and ensuring long-term water security. He stressed the interconnection between healthy river systems and human survival. Dr. Brij Mohan Sharma, Chief Officer of SPECS, discussed sustainable development approaches to reduce environmental challenges, drawing attention to the balance between modernization and ecological preservation. Dr. Vinod Bhatt, Executive Director of *Navdanya Biodiversity Farm*, elaborated on biodiversity-based organic farming and indigenous climate-resilient crops, emphasizing their significance in mitigating the impacts of climate change and promoting sustainable agriculture. As part of the celebration, the National Academy of Sciences (NASI) honored Dr. Brij Mohan Sharma and Dr. Dushyant Gaur of SRHU with cash awards for their contributions to environmental initiatives. Dr. Vijendra Chauhan received recognition for maintaining a clean and green campus, reinforcing SRHU's model of an environmentally responsible institution.





World Environment Day Celebration at SRHU

In parallel, the Himalayan College of Nursing (HCN) Literary Committee organized a World Environment Day Quiz Competition, where 145 students from B.Sc. Nursing (second, fourth, and fifth semesters) actively



participated. Dr. Sanchita Pugazhendi, Principal of HCN, encouraged students to integrate environmental ethics and sustainable practices into their professional and personal lives. Faculty members Preeti Prabha, Heena Negi, and Dr. Anupama contributed to organizing the event and guiding the participants.

Through such multi-disciplinary initiatives, SRHU continues to align its educational, research, and community outreach activities with the United Nations Sustainable Development Goals. The celebration not only reinforced environmental awareness but also exemplified SRHU's commitment to transforming its campus and surrounding communities into living laboratories for sustainability and ecosystem stewardship.

# 15.2.5 Sustainable Management of Land for Agriculture

# 1. Training of 5,000+ Farmers in Sustainable and Organic Agriculture

SRHU has undertaken major initiatives under its SDG framework to promote environmental sustainability, ecosystem management, and rural livelihood enhancement. One of the most impactful interventions was the training of over 5,000 farmers from adopted villages in Uttarakhand to transition toward organic and sustainable agriculture practices. Through its Rural Development Institute (RDI), SRHU organized farmer field schools and hands-on demonstration sessions that focused on eco-friendly agricultural techniques such as the use of biofertilizers, organic composting, and integrated pest management. Farmers were encouraged to adopt crop diversification and shift toward the cultivation of aromatic and medicinal plants like rosemary, lemongrass, turmeric, ginger, and garlic, which are better suited to the Himalayan terrain and require less irrigation. The programme also promoted water-smart irrigation systems such as drip and sprinkler methods, helping reduce water wastage and improve crop yield. These capacity-building activities not only increased productivity but also empowered local farmers economically by converting around 50 acres of previously unused land into productive agricultural plots.

# 2. Establishment of 12 Rainwater Harvesting Pits for Groundwater Recharge

Evidence: <a href="https://srhu.edu.in/media-events/swami-rama-himalayan-university-sets-a-shining-example-in-water-conservation/">https://srhu.edu.in/media-events/swami-rama-himalayan-university-sets-a-shining-example-in-water-conservation/</a>

SRHU has placed significant emphasis on land and water conservation as part of its commitment to sustainable development and ecosystem management. The university has implemented a comprehensive rainwater harvesting project across its approximately 200-acre campus, establishing 12 strategically located rainwater harvesting pits. These structures were carefully designed based on topographical and hydrological assessments to capture and channel rainwater, ensuring maximum percolation into the groundwater table. By capturing over 40 crore liters of rainwater annually, the initiative enhances groundwater recharge, maintains soil integrity, and minimizes surface runoff, thereby reducing erosion and supporting sustainable land management practices. This not only protects the campus landscape but also strengthens the resilience and overall health of the surrounding ecosystem.



This initiative forms part of a broader land restoration and green-campus strategy undertaken by SRHU, which includes extensive tree plantation drives, horticultural development, and biodiversity enrichment programs aimed at restoring native vegetation and promoting ecological balance. The harvested rainwater is utilized not only for landscape irrigation but also for groundwater replenishment, which ensures improved soil moisture retention, sustains vegetation growth, and strengthens the long-term ecological stability of the campus. These efforts have created a tangible model of integrated land and water management, demonstrating how academic institutions can contribute to climate-resilient infrastructure in hilly and ecologically sensitive regions. Faculty, staff, and students are actively engaged in this initiative through awareness campaigns, workshops, and field demonstrations, which served to educate participants about the technical design, ecological importance, and operational maintenance of the recharge pits. This participatory approach has transformed the SRHU campus into a living laboratory for sustainable water management, allowing students to directly observe the interplay between rainfall capture, groundwater recharge, and ecosystem health. The project has not only helped mitigate land degradation and prevent soil erosion but has also established SRHU as a model institution for climate-smart, ecosystem-based campus planning in the Himalayan region.









Rainwater Harvesting Pits at SRHU



Name of Activity: Session on 'Environment and Sustainability'

**Date**: 22<sup>nd</sup> September 2023

**Time:** 11:00 AM – 12:00 PM

Venue: Department of Community Medicine, HIMS, SRHU

Resource Person: Dr Ashutosh Kumar Choudhary, Department of Applied Sciences & Humanities, HSST,

**SRHU** 

**Summary:** On 22<sup>rd</sup> September 2023, a session was delivered by Dr. Ashutosh Kumar Choudhary on the topic Environment and Sustainability. He interacted with the newly admitted students on environmental issues and sensitized them towards environmental responsibilities. He also briefed about the importance of sustainable use of natural resources and the role of an individual in attaining sustainability.



Name of Activity: Session on Sustainability and Environment

**Date**: 03 August 2023

**Time:** 9:30am-10:30am

Venue: Auditorium, HSST

Resource Person: Dr Ashutosh Kumar Choudhary, Department of Applied Sciences & Humanities, HSST,

**SRHU** 

**Summary:** On 03<sup>rd</sup> August 2023, a session was delivered by Dr. Ashutosh Kumar Choudhary on the topic 'Sustainability and Environment'. He interacted with the newly admitted students on environmental issues and sensitized them towards environmental responsibilities. He also brief about the importance of sustainable use of natural resources and the role of an individual in attaining sustainability.





Session on Sustainability and Environment at HSST, SRHU

Name of Activity: National Conference on Environment, Water, Agriculture, Sustainability, and Health (EWASH 2023)

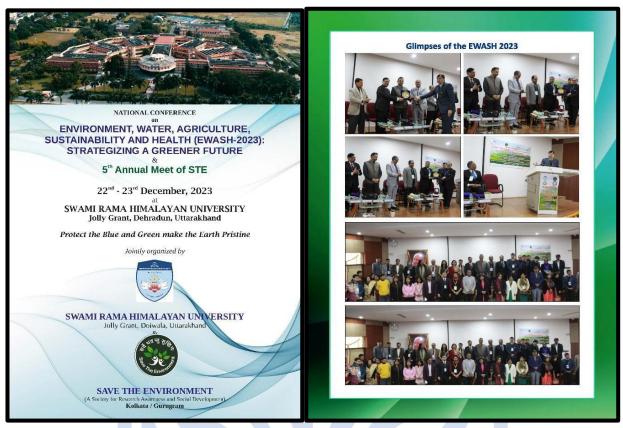
Date: December 22-23, 2023

Venue: Adi Kailash Auditorium, SRHU

Web Link: For More Information

Summary: Swami Rama Himalayan University (SRHU) successfully organized *EWASH 2023: National Conference on Environment, Water, Agriculture, Sustainability, and Health* on December 22-23, 2023. Themed "Protect the Blue and Green, Make the Earth Pristine," the two-day conference brought together experts, academicians, students, and policy makers to strategize for a greener future. Jointly hosted with Save the Environment (STE), DAV PG College Dehradun, and the National Academy of Sciences, Prayagraj, the event focused on innovative strategies for environmental conservation, water management, climate change, and sustainability. Highlights included the conferral of prestigious awards to faculty members of SRHU, recognizing their significant contributions. Dr Rajendra Dobhal received the STE Dr Praloy O. Basu Life time Achievement Award, Dr Sanjay Gupta was honoured with the STE Meritorious Award for Excellence in Academics and Research, Dr Archana Dhasmana received the STE Young Researcher Award, and Dr Nikku Yadav was awarded the STE Clinical Diagnosis and Research Award. The conference concluded with a collective resolution to implement sustainable practices and foster collaborations across all stakeholders to address pressing environmental challenges, ensuring impactful reforms in water management, agriculture, and conservation efforts.





National Conference on Environment, Water, Agriculture, Sustainability and Health

# 15.2.6 Sustainable Management of Land for Tourism

# Skill Development and Sustainable Land Use for Tourism at SRHU

#### Web Link: For More Information

Swami Rama Himalayan University (SRHU) integrates skill development initiatives with the principles of sustainable land use for tourism, ensuring that economic growth does not come at the expense of ecological integrity. Through partnerships with Learnet Skills Limited and NSDC, SRHU delivers industry-relevant vocational programs such as B.Voc, Community Health Officer (CHO) training, and the Homestay Program, providing students and community members with competencies in hospitality, eco-tourism, and rural entrepreneurship. The Homestay Training Program, in particular, trains participants to manage guest accommodations, promote eco-friendly practices, and operate within environmentally sensitive areas. This handson approach ensures that tourism activities, including lodging, waste management, and local resource use, are aligned with sustainable land management principles. By encouraging responsible tourism practices, SRHU helps reduce environmental degradation, protects local biodiversity, and preserves natural landscapes while generating livelihoods for local communities. Through this integration, SRHU not only promotes SDG 1, SDG 4. SDG 8 and SDG 10 but also contributes to SDG 15 – Sustainable Management of Land for Tourism. By linking vocational training with eco-conscious tourism and land stewardship, SRHU models how education, skill development, and community engagement can foster sustainable economic growth while conserving Himalayan ecosystems.





# **Program Highlights:**

Indicator	Data Point		
"Earn While You Learn"	20–24 months of paid On-the-Job Training in hotels		
model			
Affordable fees	₹18,000 for CHO program		
Industry linkages	Partnerships with Marriott, Sayaji, and other leading organizations		
Rural outreach activities	Tarkeshwar Temple outreach, Ganga Dussehra events		
National Skill Certification	NSQF Level 4–7 certifications		
Homestay Training	Practical training in hospitality, tourism management, and eco-friendly operations		
Sustainable Tourism	Land-use planning, biodiversity conservation, waste management, and promotion of		
Practices	eco-tourism		





Skill Development for Sustainable Land Management and Eco-Tourism



# 15.3 Supporting Land Ecosystem Through Action

SRHU actively contributes to the protection and restoration of land ecosystems in the Himalayan region through research, community engagement, and sustainable practices. By promoting afforestation, habitat restoration, soil conservation, and eco-friendly tourism, SRHU ensures that human activities support rather than degrade local landscapes. Initiatives such as tree plantation drives, homestay programs with sustainable land use, and awareness campaigns on biodiversity and waste management empower communities to participate in ecosystem stewardship. Through these efforts, SRHU integrates education, research, and practical action to maintain ecological balance, conserve native flora and fauna, and foster sustainable development in line with SDG 15 – Life on Land.

1. **Green belt and biodiversity on campus:** The campus has a large green belt (approx. 1,60,800 m²) with over 5,000 trees, and includes about 125 floral species, 15 bird species, 22 butterfly species, reptiles and amphibians.



**Biodiversity Park** 

2. Various tree-plantation drives and Landscaping, green spaces, native plants, and designing the campus for biodiversity are included as part of the sustainable campus design. Around 100 saplings of native species including Jamun, Litchi, Amla, Pipal, Haldi, Amaltas, Lagerstroemia, and Gulmohar were thoughtfully planted across the already verdant SRHU campus. These indigenous species are well-suited to the local climate and contribute to ecological balance, enhancing biodiversity while requiring minimal external inputs.





**Plantation Drives at SRHU** 

3. **Sustainable waste, water & energy management:** Solid waste is segregated (biodegradable vs non-biodegradable), composted on-site, and there is a biogas plant from cow dung / kitchen waste. Food waste on campus remained relatively stable, averaging around 47,000 kg annually, a portion of which was converted to biogas, rising from 5,800 kg in 2021–22 to 10,800 kg in 2023–24, producing 67,500 KWH of renewable energy.



Compost Pit at SRHU

4. Soil Conservation through Rainwater harvesting & Effluent Treatment: STP (Sewage Treatment Plant) and ETP (Effluent Treatment Plant) are implemented to treat and reuse water, thereby protecting land and water ecosystems. SRHU's commitment to environmental sustainability is demonstrated through its 90 KLD capacity Effluent Treatment Plant (ETP), and 1MLD Sewage Treatment Plant (STP) which ensures efficient wastewater management. The treated water is recycled for campus irrigation, significantly decreasing the reliance on freshwater resources. This approach not only conserves vital water supplies but also helps maintain soil quality by preventing untreated waste discharge into natural ecosystems and supporting sustainable land use.









**Effluent Treatment Plants at SRHU** 

#### SRHU conferred CII-Gold Award by Confederation of Indian Industry

#### Web Link: For More Information

The institution has obtained a Green Audit Certificate, and has been awarded the "CII-Gold Award 2023" for Green Practices in the service category (first institution in North India in this category) recognising its efforts in eco-friendly practices, energy conservation, water preservation, and environmental protection. On October 7, 2023, Swami Rama Himalayan University (SRHU), Jollygrant, was conferred the CII-Gold Award 2023 by the Confederation of Indian Industry (CII) in the "Green Practices Award" service category, becoming the first and only institution in North India to receive this honor. The award recognizes SRHU's commitment to sustainability through initiatives such as large-scale tree plantation drives, waste management, a plastic bank, and environmental awareness campaigns. The university has promoted energy conservation with 16% of its electricity demand met through solar power, reducing carbon emissions by approximately 1,455 tons, and introduced electric vehicles to minimize fuel use. SRHU also manages water conservation and purification projects, including a sewage treatment plant treating 7 lakh liters of water daily, and has been designated a Knowledge Resource Center under the "Har Ghar Jal Yojana." Additionally, paper recycling and e-waste management facilities demonstrate the institution's dedication to environmental protection. The Chancellor, Dr. Vijay Dhasmana, emphasized that receiving this award highlights SRHU's role as a model university for eco-friendly practices, sustainable development, and creating a greener future.





**CII-Gold Award by Confederation of Indian Industry** 

#### 15.3.1 Policy for Sustainable Use, Conservation and Restoration of Land

SRHU is committed to the sustainable use, conservation, and restoration of land resources within its campus. The University promotes environmentally responsible land-use planning, ensuring that all development aligns with ecological principles and minimizes soil degradation or habitat loss. Emphasis is placed on maintaining and enhancing green cover through native and drought-tolerant species, protecting natural water bodies, preventing soil erosion, and using organic methods for landscaping. Degraded areas are progressively restored through afforestation, soil conservation, and vegetation regeneration. SRHU also encourages the reuse of treated wastewater for irrigation, adoption of rainwater harvesting, and active participation of students and staff in plantation, biodiversity conservation, and awareness initiatives to uphold the ecological integrity of the campus.

Evidence: https://srhu.edu.in/policy-for-sustainable-use-conservation-and-restoration-of-land/



# Policy for Sustainable Use, Conservation, and Restoration of Land

Approved	Board of Management on 12th January 2019  Notified by Registrar vide notification No. SRHU/Reg/OO/2019-04 (i) dated 15th January 2019	
Notification		
Reviewed / Revised	Board of Management on 29th March 2022	
Notification	Notified by Registrar vide notification No. SRHU/Reg/OO/2022-58 (i) dated 5th April 2022	
Next Review	2025-26	

Swami Rama Himalayan University Swami Ram Nagar, Jolly Grant- 248 016, Dehradun, Uttarakhand

Policy for Sustainable Use, Conservation, and Restoration of Land



#### 15.3.2 Monitoring IUCN and other conservation species

SRHU is deeply committed to the conservation, enhancement, and monitoring of biodiversity within its campus and surrounding areas. The University maintains an ecologically rich and green environment that supports diverse flora and fauna representative of the Himalayan foothills. To strengthen these efforts, SRHU has established a Biodiversity Park, Herbal Garden, and an Urban Forest, which together serve as vital hubs for conservation, education, and research.

#### **Evidence:** https://srhu.edu.in/policy-for-monitoring-iucn-and-other-conservation-species/

The Biodiversity Park functions as a living repository of native and regionally important plant species, providing habitats for pollinators, birds, and other wildlife. It also offers opportunities for ecological studies, nature education, and awareness activities. The Herbal Garden houses a wide range of medicinal and aromatic plants of therapeutic and ethnobotanical significance, promoting the preservation of traditional knowledge systems and sustainable use of herbal resources. The Urban Forest has been developed to enhance the campus's green cover, improve air quality, aid in carbon sequestration, and create a natural refuge for biodiversity within an institutional setting. This well-maintained natural environment supports a thriving biodiversity, including 125 floral species, along with a variety of fauna such as 15 bird species, 22 butterfly species, and various reptiles and amphibians, turning the campus into a natural habitat and a live biodiversity lab for students and researchers. Numerous varieties of trees, shrubs, and seasonal plants across the University premises support fauna and contribute to a vibrant ecological environment. Regular biodiversity assessments, documentation, and maintenance activities are carried out by faculty and students to track the health and diversity of ecosystems on campus.

Awareness programs, plantation drives, and conservation-oriented student projects further encourage active participation in maintaining ecological balance. Through these sustained initiatives, SRHU exemplifies its commitment to environmental stewardship and sustainable campus development.



**Biodiversity Park at SRHU** 



# List of Floral Species in the University

List of Herbs

ist of Herbs						
No.	Common Name	Scientific Name	Family			
1	Curry tree	Murraya koenigii	Rutaceae			
2	White cedar	Thuja occidentali	Cupressaceae			
3	Banyan tree	Ficus benghalensis	Moraceae			
4	Yellow oleander	Cascabela thevetia	Apocynaceae			
5	Aloe vera	Aloe vera	Asphodelaceae			
6	Barberry	Berberis vulgaris L	Berberidaceae			
7	Lemon	Citrus Limonum	Rutaceae			
8	China rose	Hibiscus rosa-sinensis	Malvaceae			
9	Neem	Azardirchata - indica	Mahaceae			
10	Tulsi	Ocimum sanctum	Lamiaccac			
11	Toon	Toona sinensis	Meliaceae			
12	Ashok	Saraca Asoca	Caesalpinanceac			
13	Amla	Emblica officinalis	Euphorbiaceac			
14	Henna/mehndi	Lawsennia iermis	lytharaceae			
15	Marigold	Tagetes erecta	Asteraceae			
16	Tej Patta	Cinnamomum tamala	Lauraceae			
17	Arjun	Terminalia arjuna	Combretaceae			
18	Aswagandha	Withania Somnifera	Solanaceae			
19	Jamun	Syzygium cumini	Myrtaceae			
20	Candyleaf	Stevia rebaudiana	Asteraceae			
21	Tamarind (Imli)	Tamarindus indica	Fabaceae			
22	Drumstick-Tree	Moringa oleifera	Moringaceae			
23	Kachnar	Bauhinia variegata	Fabaceae			
24	Lemon grass	Cymbopogon citratus	Poaceae			
25	Safed aak	Calotropis Gigantea	Apocynaceae			
26	Datura (Yellow)	Datura stramonium	Solanaceae			
27	Datura (Black)	Datura stramonium	Solanaceae			
28	Red oleander	Cascabela thevetia	Apocynaceae			
29	Sudarshana	Crinum latifolium	Amaryllidaceae			
30	Kapur	Cinnamomum camphora	Lauraceae			
31	Babri	Eclipta prostrata	Asteraceae			
32	Common guava	Psidium guajava	Myrtaceae			
33	Rose	Rosa rubiginosa	Rosaceae			
34	Bakaian	Melia azedarach	Mahogany			
35	Rangoon creeper	Quisqualis indica	Combrataceae			
36	Bael (Wood apple)	Aegle marmelos	Rutaceae			

Floral species:

Number: 125

List of Trees

No.	Common Name	Scientific Name	Family
1	Ficus	Ficus Sp.	Moraceae
2	Amla	Emblica officinalis	Euphorbiaceae
3	Guava	Psidiiim guajava	Myrtaceae
4	Rosemallows	Hibiscaceae	Hibiscus
5	Champaca	Magnolia champaca	Magnoliaceae
6	Cycas	Cycas	Cycadaceae
7	Crepe Jasmine	Tabernaemontana Divaricata	Apocynaceae
8	pomegranate	Punica granatum	Punicaceae
9	Ashoka Tree	Saraca asoka	Fabeceae
10	Kadam	Anthocephalus chinen sis	Rubiaceae
11	Indian Almond	Terminalia catappa	Combretaceae
12	Lichi	Litchi chinensis	Sapindaceae
13	Vilayati Babul	Pithecolobium duIce	Mimosaceae
14	Neem Tree	Azadirach ta indica	Meliaceae

# List of Grasses

No.	Common Name	Scientific Name	Family
1	Common Carpetgrass	Axo nopus sp.	Poaceae
2	Durba	Cynodon dcatyl on	Graminae



# List of Shrubs

No	Common Name	Scientific Name	Family
1	Giant Milkweed	Calotropis gigantea	Asclepiadaceae
2	Ban jamir	Glycosmis pentophyla	Ruraceae
3	Fever tea	Lippia javanica	Verbenaceae
4	Fever tea	Lippia javanica	Verbenaceae
5	Jasmine	Jusm inum pubescens	Oleaceae
6	Clerodendrum	Clerodendrum viscosum	Verbenaceae
7	Ground Fig	Ficus heterophylla	Moraceae
8	Bleeding Heart	Clerodendrum tiomsoniae	Lamiaceae
9	Stinking Cassia	Cassio tora	Fabaceae
10	Chitrak	Plumbago zeyla nica	Plumbaginaceae
11	Duranta	Duranta repens	Verbenaceae
12	GardenCosmos	Cosmos bipinna tus	Asteraceae
13	Devil's Trumpets	Datura sp.	Solanaceae
14	Dracaena	Pleomele reflea	Asparagaceae
15	Lagerstroemia	Lagerstroemia indica	Lythraceae
16	Citrus/Citron	Citrus medica	Rutaceae
17	Rose	Rosa sp. Var.	Rosaceae
18	Wild Pmumeria	Plumeria pudica	Apocynaceae
19	Wild Eggplant	Solanum Totvum	Solanaceae
20	Indian heliotrope	Heliotropium indiciim	Boraginaceae
21	Heliconia	Strelitzia sp.	Musaceae
22	Common Wireweed	Sida acuta	Malvaceae
23	Thuja	Thuja orientalis	Cupressaceae
24	Chinese Rose	Hibiscus rosa -sinensi's	Malvaceae
25	Lime	Citrus acida	Rutaceae
26	Orange Jasmine	Mn rraya paniculata	Rutaceae
27	Oleander	Nerium oleander	Apocynaceae
28	Karipata	Murraya Koenigii	Rutaceae

#### List of Creepers

No.	Common Name	Scientific Name	Family
1	Aparajita	Clitoria ternatea	Fabaceae
2	Birdfoot Grape-Vine	Cayratia pedata	Vitaceae
3	Passion Flower	Passiftora suberosa	Passifloraceae
4	Cayratia	Coratia trifolia	Vitaceae
5	Corkystem Passionflower	Passiflora suberosa	Passiflozaceae
6	Birdfoot Grape-Vine	Cayratia sp.	Vitaceae
7	Gulanchalata	Tinospora cordifolia	Menispermaceae
8	Titakunja	Wattakaka votubillis	Asclepiaceae
9	Bengal Trumpet Vine	Thunbergia grandiflora	Acanthaceae
10	lpomoea	Ipomoea aquatic	Convolvulaceae
11	I ndian Stinging Nettle	Tragia in volucrato	Euphorbiaceae
12	Money Plant, Ivy Arum	Epipremn um aureum	Areceae
13	Snake Vine	Stephania japonica	Menispermaceae
14	Philodendron	Philodendron sp.	Areceae
15	Chinese creeper	Micania microntha	Asteraceae
16	White Morning Glory	lpomoea obscura	Convolvulaceae
17	Telakuchu	Coccinia grand is	Cucurbitaceae
18	Tiliacora	Tiliacora racemosa	Menispermaceae
19	Roundleaf Bindweed	Evolvulus Nummularius	Convolvulaceae
20	Justicia	Justicia simplex	Acanthaceae
21	Hemigraphis	Hemigraphis hirta	Acanthaceae
22	Climbing Mallotus	Nlallotus repandus	Euphorbiaceae
23	Bougainvillea	Bougainviflea sp.	Nycaginaceae
24	Allamanda	Allamanda sp.	Apocynaceae

#### List of Palms

No.	Common Name	Scientific Name	Family
1	Areca Palm	Dypsis Intescens	Arecaceae
2	Bottle Palm	Hyoyhorbe lagenicaulis	Arecaceae
3	Indian Datepalm	Phoenix sylvestris	Palmae
4	Coconut	Cocos nucifera	Arecaaceae
5	Palmyra Palm	Borassusflabe Hifer	Palmae
6	Areca	Areca catechu	Arecaceae
7	Palmyra Palm	Borassusflabellifer	Arecaceae

#### List of Ferns and Seasonal Flowers

No.	Common Name	Scientific Name	Family	Type
1	Bircl- nest Fern	Asplenium Sp.	Aspleniaceae	Fern
2	Fishtail Fern	Microsorum punctatum	Polypodiaceae	Fern
3	Oakleaf Ferm	Drynoriaquercifolia	Polyqodiaceae	Fern
4	Snapdragon	Antirrhinum majus	Scrophulariaceae	Season
5	Garden stock	Matthiola incana	Brassicaceae	Season
6	Gazania	Gazania sp.	Asteraceae	Season
7	Gladiolus	Gladiolus sp.	Iridaceae	Season
8	Flaming Kaaty	Kalanchoeblossfeldiana	Crassulaceae	Season
9	Miaden Pink	Dianthus deltoids	Carryophyllaceae	Season
10	Amaryllis	Hippeastrum Sp	Amaryllideceae	Season
11	Pansy	Viola tricolor var.	Violaceae	Season
12	Petunin	Petunia hybrida	Solanaceae	Season
13	Verbena	Vei-hena sp.	Verbenaceae	Season

# List of Medicinal plants

No.	Common Name	Scientific Name	Family	Туре
1	vat vriksha	Ficus benghalensis	Moraceae	spreading
2	sarpagandha	Rauvolfia serpentina	Apocynaceae	shrub
3	tanduliyaka	Amaranthus spinosus	Amaranthaceae	shrub
4	aakaakarabh	Anacyclus pyrethrum	Asteraceae	Asteraceae
5	amra	Spondias mombin	Anacardiaceae	flowering
6	dugdhika	Euphorbia hirta	Euphorbiaceae	multiseriate
7	gajar ghas	Parthenium hysterophorus	Asteraceae	shrub
8	ganda	Tagetes	daisy family	shrub
9	madhukarkati	Citrus maxima	Rutaceae	shrub



# List of Faunal Species in the University

#### Faunal Species

The university campus is significantly rich in faunal diversity. A significant number of bird nests are seen at many places.

#### List of Birds

No.	Common Name	Scientific Name	Family
1	Common HawkCuckoo	Hierococcyx varlus	Cuculidae
2	Common Hoopoe	Upupa epops	Upupidae
3	Common Iora	Aegithrna tipsia	Aegithinidae
4	Common Kingfisher	Alcedo atthis	Alcedinidae
5	Common Myna	Acridotheres tristis	Sturnidea
6	Common Pigeon	CoInmba livia	Columbidae
7	Common Sandpiper	Actitis hypoleucos	Scolopacidae
8	Common Tailorbird	Orthotomus sutortus	Cisticolidae
9	Coppersmith Barbet	Megalaima haemacephala	Ramphastidae
10	House Crow	Corvus splendens	Corvidae
11	House Sparrow	Passer domesticus	Passeridae
12	Indian Cormorant	Pholocrocorax fuscicollis	Phalacrocoracidae
13	Pale-billedElowerpecker	Dicoeum erythrorynchos	Dicaeidae
14	Taiga flycatcher	Ficedula albicilla	Muscicapidae
15	Yellow-footed Green pigeon	Treron phoen icoptera	Columbibae

#### List of Reptiles

No.	Common Name	Scientific Name	Family
1.	Rat Snake	Zamenis longissimus	Colubridae

#### List of Amphibians

No.	Common Name	Scientific Name	Family
1	Indian Toad	Duttaphrynus melanostictus	Bufonidae
2	Frog	Enphldctis cyanophlyctis	Dicroglossidae

#### List of Butterflies

		I	
No.	Common Name	Scientific Name	Family
1	Blue Mormon	Papilio polymnestor	Papilionidae
2	Common Jay	Graphium doson	Papilionidae
3	Common Mime	Papilo clytia	Papilionidae
4	Common Mormon	Papilo polytes	Papilionidae
5	Common Rose	Pachliopta aristolochiae	Papilionidae
6	Lime Butterfly	Papitto demolis	Papilionidae
7	Tailed Jay	Graphium agamemnon	Papilionidae
8	Small Grass Yellow	Furema brigitta	Pieridae
9	Common Grass Yellow	Eurema hecabe	Pieridae
10	Common Gull	Cepora nerissa	Pieridae
11	Indian Jezebel	Delias eucharis	Pieridae
12	Indian Wanderer	Pareronia hippia	Pieridae
13	Lemon Emmigrant	Catopsila Pomona	Pieridae
14	Mottled Eemigrant	Catopsilia pyranthe	Pieridae
15	Psyche	Leptosia nina	Pieridae
16	Common Cerulean	Jamides celeno	Lycaenidae
17	Common Lineblue	Prosotosnora	Lycaenidae
18	Tailless Lineblue	Prosotas dubiosa	Lycaenidae
19	Common Pierrot	Castalius rosimon	Lycaenidae
20	Common Quaker	Neopithecops zalmora	Lycaenidae
21	Dark Grass Blue	Zizeeria karsandra	Lycaenidae
22	Forget-me-not	Catochrysops strabo	Lycaenidae

Web Link of the Policy for Monitoring IUCN and other Conservation Species: <a href="https://srhu.edu.in/policy-for-monitoring-iucn-and-other-conservation-species/">https://srhu.edu.in/policy-for-monitoring-iucn-and-other-conservation-species/</a>





#### Policy for Monitoring IUCN and Other Conservation Species

Approved	Board of Management on 12th January 2019
Notification	Notified by Registrar vide notification No. SRHU/Reg/OO/2019-04 (i) dated 15th January 2019
Reviewed / Revised	Board of Management on 29th March 2022
Notification	Notified by Registrar vide notification No. SRHU/Reg/OO/2022-58 (i) dated 5th April 2022
Next Review	2025-26

Swami Rama Himalayan University Swami Ram Nagar, Jolly Grant- 248 016, Dehradun, Uttarakhand

Policy for Monitoring IUCN and other Conservation Species

#### 15.3.3 Local Biodiversity Included in Planning and Development

SRHU integrates local biodiversity conservation into all aspects of campus planning and development to ensure environmentally responsible growth. The University's master plan emphasizes the preservation of native vegetation, natural topography, and drainage patterns while minimizing ecological disturbance. Green zones, buffer areas, and water bodies are carefully maintained to support the native flora and fauna of the Himalayan foothills. During landscaping and plantation activities, preference is given to indigenous and drought-tolerant plant species to promote ecological balance and reduce maintenance requirements. The Biodiversity Park, Herbal Garden, and Urban Forest within the campus have been developed using locally adapted species, enhancing habitat connectivity and biodiversity resilience. Moreover, environmental experts and faculty members are involved in site planning to ensure that infrastructural expansion aligns with sustainability goals and biodiversity protection measures. Through these initiatives, SRHU demonstrates a strong commitment to harmonizing institutional development with the conservation of local ecosystems.





**Green campus** 

#### 15.3.4 Alien Species Impact Reduction

SRHU has adopted several proactive measures under its Policy for Alien Species Impact Reduction to protect local biodiversity and maintain ecological balance. The University conducts risk assessments before introducing any new plant or animal species and uses only approved native or non-invasive species for landscaping and agriculture. Strict biosecurity practices are followed for imported biological materials, and staff and students are trained to identify and report invasive species. Regular surveys are conducted to monitor and control alien species through eco-friendly methods such as manual removal, biological control, and habitat management. SRHU also restores degraded areas by replanting native vegetation and creating buffer zones to prevent reinvasion. The University supports research on invasive species, collaborates with government and conservation organizations, and contributes to national databases. Awareness and training programs are organized to engage students, employees, and the local community, while all suppliers and contractors are required to comply with the policy to ensure materials are free from invasive species. Continuous monitoring, documentation, and inclusion of progress in the annual sustainability report ensure accountability, while periodic reviews keep practices aligned with evolving scientific and regulatory standards.

Web Link of the Policy for Alien Species Impact Reduction: Policy for Alien Species Impact Reduction





# Policy for Alien Species Impact Reduction

Approved	Board of Management on 12th January 2019
Notification	Notified by Registrar vide notification No. SRHU/Reg/OO/2019-04 (i) dated 15th January 2019
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Next Review	2025-26

#### Swami Rama Himalayan University

Swami Ram Nagar, Jolly Grant- 248 016, Dehradun, Uttarakhand

**Policy for Alien Species Impact Reduction** 

#### 15.3.5 Collaboration for Shared Land Ecosystems

SRHU has been actively engaged in promoting sustainable land ecosystems and biodiversity through collaborations with research institutions, industries, and community organizations. Recognizing the importance of shared responsibility in preserving ecosystems, the university has developed initiatives that integrate research, innovation, and community engagement to ensure the sustainable use, restoration, and conservation of land resources. During 2023–2024, SRHU entered into several key collaborations that directly contribute to ecosystem management, land restoration, and biodiversity protection within the Himalayan region.

# 1. Collaboration with CSIR–Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur (2023)

**Evidence:** <a href="https://srhu.edu.in/media-events/mou-signed-between-swami-rama-himalayan-university-and-csir-institute-of-himalayan-bioresource-technology-csir-ihbt-palampur-hp/">https://srhu.edu.in/media-events/mou-signed-between-swami-rama-himalayan-university-and-csir-institute-of-himalayan-bioresource-technology-csir-ihbt-palampur-hp/</a>

In September 2023, SRHU signed a Memorandum of Understanding (MoU) with the CSIR–Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur, and Himachal Pradesh. This collaboration focuses on joint research and academic exchange in the areas of ecology, medicinal and aromatic plants, floriculture, and sustainable livelihood development for hill communities. Through this partnership, SRHU aims to promote



biodiversity conservation and sustainable land-use practices in the Himalayan region. The collaboration emphasizes the conservation and utilization of Himalayan bioresources, knowledge sharing among researchers and students, and the development of ecological models that support both environmental and socio-economic growth. This initiative strengthens SRHU's capacity to contribute to land ecosystem restoration and climate-resilient development in mountainous landscapes.



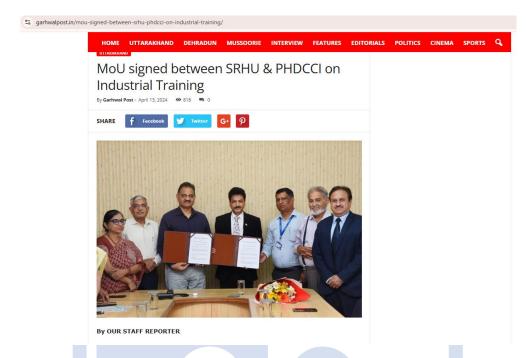
Memorandum of Understanding (MoU) with the CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT), Palampur, and Himachal Pradesh

#### 2. Collaboration with PHD Chamber of Commerce and Industry (PHDCCI) (2024)

**Evidence: MOU Media News** 

In April 2024, SRHU entered into a strategic partnership with the PHD Chamber of Commerce and Industry (PHDCCI) to promote environmental sustainability and industry-academia cooperation. One of the major outcomes of this collaboration is the establishment of a Carbon Credit Centre on the university campus. The initiative aims to promote carbon sequestration through afforestation and green infrastructure, linking land ecosystem management with climate change mitigation. This collaboration supports the creation of sustainable business models that incentivize ecosystem conservation and responsible land management. It also enhances SRHU's role in implementing the United Nations Sustainable Development Goals (SDGs), particularly SDG 13 (Climate Action) and SDG 15 (Life on Land).





Memorandum of Understanding (MoU) with PHD Chamber of Commerce and Industry (PHDCCI)

#### 3. Campus Sustainability and Ecosystem Initiatives

Beyond formal partnerships, SRHU continues to demonstrate its commitment to sustainability through a wide range of on-campus initiatives. The university's 200-acre green campus is home to more than 5,000 trees and over 125 floral species, fostering a diverse and balanced ecosystem. SRHU was awarded the CII–Gold Award 2023 by the Confederation of Indian Industry (CII) for its outstanding achievements in green practices — becoming the first institution in North India to earn this recognition. Major initiatives include waste management systems, plastic bank programs, a paper recycling unit, and an e-waste storage facility. The university has also implemented a 1,500 kW solar power plant, which meets 16% of its electricity demand and reduces approximately 1,455 tons of carbon emissions annually. Moreover, SRHU operates a sewage treatment plant (STP) with a capacity of 7 lakh litres per day, ensuring wastewater is treated and reused for irrigation and gardening. These efforts highlight SRHU's leadership in sustainable resource management, energy conservation, and environmental protection.

#### 4. National and Community-Level Engagement

At the national level, SRHU serves as a Knowledge Resource Center (KRC) and Sector Partner under the Ministry of Jal Shakti's "Har Ghar Jal Yojana". Through this collaboration, the university supports water purification and conservation projects in 26 states, ensuring access to clean water and promoting integrated watershed and land management. Additionally, SRHU conducts awareness campaigns, workshops, and training sessions on sustainable practices, engaging students and local communities in land and ecosystem conservation activities. These initiatives strengthen SRHU's role as a regional leader in integrating environmental awareness with academic learning.



#### 15.4 Land Sensitive Waste Disposal

SRHU is committed to promoting sustainable development and environmental stewardship in alignment with its founding philosophy of holistic well-being and ecological harmony. As part of this commitment, the University continuously strives to minimize its environmental footprint through land-sensitive waste disposal practices that safeguard the quality of soil, water, and local ecosystems.

#### 15.4.1 Waste Discharge Guidelines and Standards

#### **Sewage and Effluent Treatment at SRHU**

Sewage and effluent treatment are critical components of environmental conservation and sustainable campus management. Improper disposal of wastewater can result in severe environmental consequences, including water pollution, disease transmission, and damage to aquatic ecosystems. Recognizing these challenges, SRHU has undertaken proactive measures to ensure that all wastewater generated within the campus is effectively treated, reused, and safely managed. SRHU's commitment to sustainability is reflected in the establishment of advanced Sewage Treatment Plant (STP) and Effluent Treatment Plant (ETP) facilities on campus. These plants not only ensure compliance with environmental regulations but also support the University's broader vision of creating an environmentally responsible and resource-efficient institution. The university's STP adheres to national environmental guidelines set by the Central Pollution Control Board (CPCB) and the State Pollution Control Board (SPCB). At SRHU, the STP is not just a facility for wastewater treatment but a vital part of the institution's green campus initiative, promoting environmental conservation and resource efficiency. With a comprehensive multi-stage treatment process, including equalization, pH regulation, aeration, primary and secondary sedimentation, Moving Bed Biofilm Reactor (MBBR) technology, and dual media filtration, the plant ensures that treated water meets the highest quality standards. This treated water is then reused for irrigation, sanitation, and campus maintenance, significantly reducing the university's dependence on fresh water.

#### 1. Sewage Treatment Plant (STP)

Sewage treatment is a critical aspect of environmental conservation. Posing significant environmental challenges, improper disposal of sewage can lead to water pollution, diseases and harm to aquatic ecosystems. SRHU ensures that wastewater is properly treated before being used in gardening, minimizing pollution and safeguarding public health. SRHU has taken a significant step towards environmental responsibility by establishing a 1 MLD sewage treatment plant (STP) on its campus. The treated water, having quality parameters in consonance with the statutory limits specified by the state pollution control board, is used for water the plants in parks and other green areas. The biological treatment system provided within the premises consists of Moving Bed Bio Reactor (MBBR) scheme as illustrated in process flow diagram chart. Raw sewage after bar screening is collected in collection tank from where it is pumped to MBBR aeration tank. The sewage from the MBBR tank is allowed for settling in settling tank. The overflow from the settling tank goes through Pressure Sand Filter (PSF) and Activated Carbon Filter (ACF). The treated sewage is partially taken for gardening and for Ultrafiltration (UF).



The manure produced through STP is utilized in green belt. The STP inlet and outlet water is tested every six months from NABL accredited laboratory and found within norms.









**Sewage Treatment Plant at SRHU** 

#### 2. Effluent Treatment Plant (ETP)

SRHU is committed to creating a sustainable and environmentally conscious campus. SRHU generates a substantial amount of wastewater daily which includes water used in laboratories and other facilities like laundry. Without proper treatment, this wastewater poses a threat to the environment, public health, and the overall aesthetics of the campus. Treated water from the ETP is not wasted. It is recycled and reused for non-potable purposes, like irrigation, thus conserving precious freshwater resources. The total capacity of the ETP installed in SRHU is 90 KLD.



**Effluent Treatment Plant at SRHU** 

Evidence: https://srhu.edu.in/wp-content/uploads/2025/05/STP-ETP-Report.pdf



#### **Recycled Water Utilization**

In 2024, SRHU demonstrated a strong commitment to sustainable water management by recycling 9.19 million litres of treated wastewater, reflecting a 12.9% increase from 8.14 million litres in 2023. The treated water, processed through the campus's Sewage Treatment Plant (STP), is efficiently reused for multiple non-potable purposes such as irrigation and landscaping of green zones, toilet flushing, and campus cleaning and maintenance.

This initiative has substantially reduced dependence on groundwater resources and minimized potable water consumption, thereby conserving freshwater for essential uses. By adopting a circular water management system, SRHU not only supports environmental sustainability but also aligns its operations with the goals of SDG 6 (Clean Water and Sanitation) and SDG 15 (Life on Land), promoting responsible resource use and the preservation of natural ecosystems on campus.





**Recycled Water Utilization** 

#### 15.4.2 Policy on Plastic Waste Reduction

Plastic pollution poses a significant threat to ecosystems, wildlife, and human health. In response, SRHU is actively implementing measures to reduce plastic consumption and promote sustainable alternatives across its campus. The University recognizes that plastic production consumes valuable natural resources such as fossil fuels and water, and its disposal contributes to carbon emissions and microplastic pollution that endanger both environmental and human health. By striving toward a plastic-free campus, SRHU is conserving resources, lowering its carbon footprint, and fostering a healthier and safer campus environment. This initiative also serves as a vital educational platform, raising awareness among students, staff, and the community about the harmful effects of plastic pollution and the need for sustainable living practices.

Web Link of the Policy on Plastic Waste Reduction: <a href="https://srhu.edu.in/policy-for-plastic-and-disposable-items-minimization/">https://srhu.edu.in/policy-for-plastic-and-disposable-items-minimization/</a>





# Policy for Plastic Minimization

Approved	Board of Management on 12th January 2019
Notification	Notified by Registrar vide notification No. SRHU/Reg/OO/2019-04 (i) dated 15th January 2019
Reviewed / Revised	Board of Management on 29th March 2022
Notification	Notified by Registrar vide notification No. SRHU/Reg/OO/2022-58 (i) dated 5th April 2022
Next Review	2025-26

Swami Rama Himalayan University Swami Ram Nagar, Jolly Grant- 248 016, Dehradun, Uttarakhand

Zero Plastic Waste Initiative at Swami Rama Himalayan University

#### Web Link: For More Information

SRHU is actively working toward becoming zero plastic waste campuses and to strengthen its commitment, SRHU has partnered with the Social Development for Communities Foundation (SDC Foundation), Dehradun, to establish a Plastic Bank on campus. The collected plastic from SRHU and surrounding areas is sent to the Indian Institute of Petroleum (IIP), Dehradun, where it is recycled into diesel fuel, supporting both waste reduction and renewable energy generation. SDC has implemented a plastic waste management program on campus, establishing a Plastic Bank through which over 3,000 kilograms of plastic waste have been segregated, collected, and recycled at CSIR-Indian Institute of Petroleum, Dehradun into fuel. To strengthen the initiative, 12 jumbo bins have been provided to improve collection and segregation. The program has received strong support from SRHU leadership, with Chancellor Vijay Dhasmana and Vice Chancellor Dr. Rajendra Dobhal highlighting its role in achieving the university's environmental goals and fostering a culture of sustainability. SDC, in collaboration with Airbus, has established over 300 plastic banks in Dehradun, creating supply chains for recycling and engaging the community in reducing plastic pollution. This partnership not only minimizes plastic waste on campus but also promotes awareness, resource conservation, and a cleaner, more sustainable environment. The initiative is expected to significantly reduce plastic waste generation on campus while promoting sustainable practices among students, staff, and visitors. Through continuous monitoring, recycling, and awareness campaigns, SRHU aims to fully achieve its goal of zero plastic waste, reinforcing its position as a model eco-conscious institution.









**Zero Plastic Waste Initiative at SRHU** 

# 15.4.3 Policy on Hazardous Waste Disposal

SRHU is committed to environmental stewardship and sustainable campus management, with a focus on minimizing the ecological impact of its operations. Effective waste management forms a key part of this commitment, encompassing general solid waste, hazardous chemicals, biomedical waste, and electronic waste. Through source segregation, recycling, safe treatment, and responsible disposal, SRHU ensures compliance with national environmental guidelines while protecting public health and promoting sustainable resource use.

Evidence: https://srhu.edu.in/wp-content/uploads/2025/11/Policy-on-Radiation-Safety.pdf

Policy on Biomedical Waste Management: <a href="https://srhu.edu.in/policies-guidelines/policy-for-bio-medical-waste-management-2/">https://srhu.edu.in/policies-guidelines/policy-for-bio-medical-waste-management-2/</a>





# Policy for Bio-Medical Waste Management

Approved	Board of Management on 12th January 2019
Notification	Notified by Registrar vide notification No. SRHU/Reg/OO/2019-04 (i) dated 15th January 2019
Reviewed / Revised	Board of Management on 29th March 2022
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Next Review	2025-26

#### Swami Rama Himalayan University

Swami Ram Nagar, Jolly Grant- 248 016, Dehradun, Uttarakhand

#### **Policy for Bio-medical Waste Management**

#### 1. General Solid Waste Management

Swami Rama Himalayan University (SRHU) has implemented an effective and environmentally responsible solid waste management system across its campus. Waste segregation at source is strictly practiced, with clearly marked green bins for biodegradable waste and black bins for non-biodegradable waste strategically placed throughout the campus. Housekeeping staff collect the waste daily in color-coded bags and transport it to a central waste collection site. The biodegradable waste is directed to an on-campus compost pit, where it is processed into organic manure for use in landscaping and gardening. Additionally, organic waste from the guest house kitchen and cow dung from the university's dairy is fed into an on-site biogas plant. This system not only produces clean biogas for cooking but also supports sustainable waste recycling, significantly reducing the environmental impact of the campus's daily operations.









Black and Green Bins located at various locations in the university

Accumulation of solid (general) waste at the central waste collection site





**Compost Pit at SRHU** 

# 2. Hazardous Waste Management

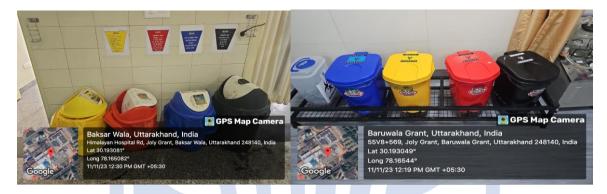
SRHU manages hazardous waste in strict compliance with national regulations. Chemicals used in biological production and discarded disinfectants are collected in yellow bags and disposed of through incineration. Non-functional batteries are returned to manufacturers under a buyback policy to prevent contamination, and radioactive waste from the radiotherapy department is picked up and returned to the manufacturer for safe disposal. These processes follow the Central Pollution Control Board (CPCB) Hazardous & Other Wastes Management Rules, ensuring safe handling, treatment, and disposal of hazardous materials.





#### 3. Biomedical Waste Management

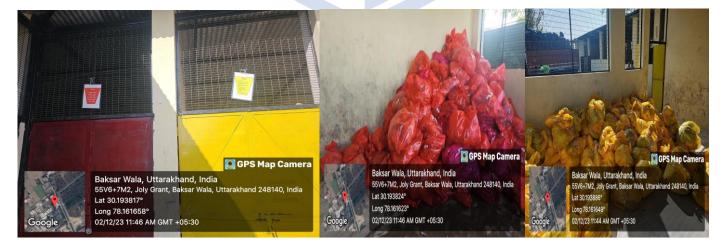
The BMW is segregated at the source in specific color-coded bins/ bags placed in identified waste disposal corners in each ward. The plastic disposable waste is collected in red-colored and incinerable waste is collected in yellow coloured non-chlorinated bags. Sharps (Needles) are discarded immediately after use in white translucent, puncture-proof containers. The housekeeping staff collects the segregated waste from different sites and delivers it to the central waste collection site. The red bag waste from laboratories (like vacutainers) is handed over to the housekeeping staff for disposal after autoclaving. The total bio-medical waste generated in the hospital is disposed of through the Common Bio-medical Waste Treatment Facility (CBWTF). An external agency (MPCC) assigned by the Uttarakhand Pollution Control Board picks up the waste from the central collection.



Segregation of BMW at the Source in Specific Color-coded Bins in Hospital



Collection of BMW from Hospital and Disposal at the Bio-Medical Waste Store Located within the University



Red and Yellow Bags Collection Site at the Bio-Medical Waste Store

Evidence: <a href="https://srhu.edu.in/policies-guidelines/policy-for-bio-medical-waste-management-2/">https://srhu.edu.in/policies-guidelines/policy-for-bio-medical-waste-management-2/</a>



# 4. E-Waste Management

The university has adopted the e-waste policy of the state government. The electronic waste items (e.g., non-working computers and their parts, such as CPUs, monitors, keyboards, mouse, etc., as well as other non-functional electronic items) are deposited in the central e-waste store from time to time and are periodically handed over to the certified vendors for disposal as per the agreement.



E-waste Store at SRHU