AMITY UNIVERSITY GURUGRAM

REPORT ON
SUSTAINABLE DEVELOPMENT GOAL

SDG 14
Year 2022-23

PREAMBLE

Amity University Haryana is progressively contributing to the protection of marine pollution and the conservation of groundwater, while also safeguarding local ponds, implementing efficient water management practices, and reducing plastic usage. The university recognises that social and economic development depends on the sustainable management of our planet's natural resources. We are therefore determined to conserve and sustainably use oceans and seas, freshwater resources, as well as forests, mountains and drylands and to protect biodiversity, ecosystems and wildlife by creating awareness in the community and amongst students' community as they are the future global leaders.

COURSES COVERING SDG

University offers various courses addressing Sustainable Development Goals to under graduates and postgraduates' students. Some of the courses- Sustainability Science, Environmental Pollution and Waste Management, Environmental Economies and Globalization, Sustainable Development Practices, Climate Change Adaptations and Sustainable Development are offered to students in Choice Based Credit System. A total of 64 students interested in studying such courses across the university opt for it as a minor tack/ value added course etc.

GOVERNANCE AND LEADERSHIP

The university has in its systems and processes the Waste Management Policy known to all stakeholders. As per the policy and system it has also signed annual maintenance contracts for STP/ETP plants for ensuring availability of safe water to the end users residing in the campus.

The University governance has also taken significant steps for the preservation of water and implemented a Solid Waste Management Policy with the following objectives:

- Protect the environment and public health
- Conserve natural resources
- Minimize landfilling and incineration, and reduce toxicity

The table below outlines the types of recyclable waste on campus, along with their disposal methods and handling procedures:

Source/Consumables	Disposal Method	Handling Procedure
Glass, Plastic, Metals, Paper/newspapers, Cardboard	Building occupants dispose of these recyclables in separately provided collection points on each floor. Cleaning staff sorts commingled recyclables out of the trash and delivers to central waste collection area.	Amounts are tracked and taken away by a hauler on a regular basis for recycling.
Mercury-containing Lamps	Custodial staff collects fluorescent lamps and stores the unbroken lamps for disposal.	Taken away by an authorized hauler for safe disposal, in accordance with local regulations on disposal of products containing mercury.
Batteries	Building occupants deliver batteries to a specially-designated collection point for disposal.	Taken away by an authorized hauler on a regular basis for proper disposal.
Durable Goods (Electronic Waste and Furniture)	Building management provides a secure collection area to store durable goods that have reached the end of their life within the building but still have value and may be donated/re-used.	Amounts are tracked and taken away by an authorized hauler or re-use center on a regular basis for recycling.
Building Materials	Building management coordinates with contractors to collect construction waste for re-use/recycling.	Amounts are tracked and taken away by an authorized hauler at the end of the demolition/construction period for recycling.
Toner/Cartridges	IT department keeps waste toner/cartridge at a designated area.	Amounts are tracked and taken away by the vendor to replace with the new ones.

WATER CONSERVATION AND RAINWATER HARVESTING

Rainwater harvesting is a key part of Amity University Haryana's sustainability efforts and has been integral to the campus's growth since its inception. The university has developed an extensive rainwater harvesting system, consisting of a network of 43 wells and 112 bores strategically placed across the campus based on the region's watershed contour. This careful planning ensures maximum collection of rainfall.

To maintain the system's efficiency for groundwater recharge, the university conducts regular cleaning of the rainwater harvesting wells and adheres to rigorous operation and maintenance protocols.

In addition to rainwater harvesting, the university has implemented several water conservation measures to achieve zero water discharge. This includes an integrated system for collecting, treating, and reusing wastewater from various campus sources such as administrative areas, residential buildings, and laundry

facilities. The performance of the Sewage Treatment Plants (STPs) and Effluent Treatment Plants (ETPs) is continually monitored to ensure their efficiency, with prompt action taken to address any issues and maintain optimal water usage.

The wastewater generated on campus is categorized into two types:

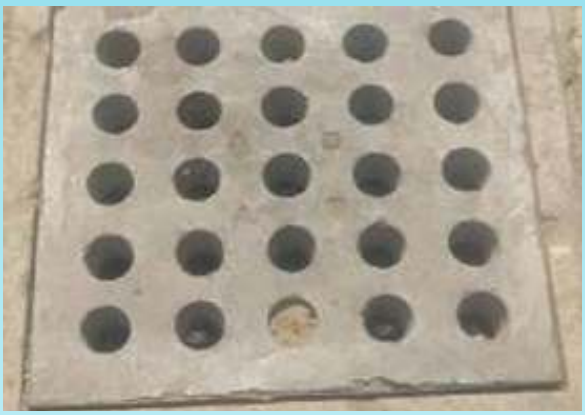
1. **Sewage Waste**
2. **Laboratory, Laundry, and Cafeteria Effluent Waste**

These are treated through the university's STPs and ETPs, helping to conserve water and reduce environmental impact.

STP	Location	Capacity in Liters/day	Type
STP 1	Near Faculty Flats	4,50,000	Aerobic
STP 2	Near Faculty Flats	4,50,000	Anaerobic

ETP	Location	Capacity in Liters/day	Type
ETP 1	Near Faculty Flats	50,000	Kitchen
ETP 2	Near Faculty Flats	20,000	Laundry

The university is committed to advancing water conservation and efficiency through the following strategies:



1. **Raise Awareness:** Promote water efficiency practices among students, faculty, and staff through awareness campaigns.
2. **Monitor Water Usage:** Continuously track and reduce the university's water consumption.
3. **Encourage Green Spaces:** Promote the planting of indigenous trees on campus to help reduce overall water usage.
4. **Regular Water Testing:** Test water samples every quarter and maintain detailed records.

5. **Rainwater Harvesting:** Direct all rooftop rainwater to the rainwater harvesting wells for collection.
6. **Sustainable Technology:** Sustain the use of innovative, water-efficient technologies such as rainwater harvesting and water reuse systems.

Additionally, the university ensures that all rainwater harvesting pits are cleaned annually before the monsoon season, with photographs taken for documentation and reference.

AUH has received a positive social impact project grant to clean up a pool of wastewater located nearby Bilaspur village in Haryana, using nano technology, and transferring it into a clean water pond. the project was funded by Gurujal and undertaking in the home ministry of Jal Shakthi, government of India.

Notable outcomes include:
- Three research publications and two patent applications focused on innovative wastewater treatment solutions
- Community engagement: Local residents received water management education and training on sustainable practices

This project yields numerous societal benefits:
- Transformation of the local water body into a thriving freshwater ecosystem
- Improved cleanliness and hygiene
- Access to potable water
- Harnessing solar energy for a green and sustainable operation

The faculty members are involved in the community to promote sustainable tourism and tackle water scarcity and water pollution, to strengthen cooperation on desertification, dust storms, land degradation and drought and to promote resilience and disaster risk reduction.

PLASTIC FREE CAMPUS

The campus is actively working to minimize plastic usage. To support this effort, stores and food stalls are encouraged to use paper and jute bags for packaging instead of plastic. Additionally, the university engages in various initiatives such as the **Swachh Bharat Abhiyan, Farmer Training Programs**, and the development of **Herbal Garden** to promote sustainability and environmental awareness.

RESEARCH AND PUBLICATIONS

The university promotes various research studies based on sustainable environmental practices. Research schoolars enrolled in doctorate programs have worked on the topic "Strategic Assessment of Forest Ecosystems in the Spatial Planning of District Gurugram, Haryana" by Ashwin Joe O F scholar. This study aims to appraise the link between spatial planning and environmental regulations in the district of Gurugram during the past two decades (2001-2021, to understand the impact of multiple land use activities on the ecosystem services. A snapshot of the study conducted by the student.

Other Postgraduates and doctoral students studies also aims to highlight on the adverse effect of plastics, pesticides in soil and water.

Few high impact publications based on studies related to natural resources are listed below :

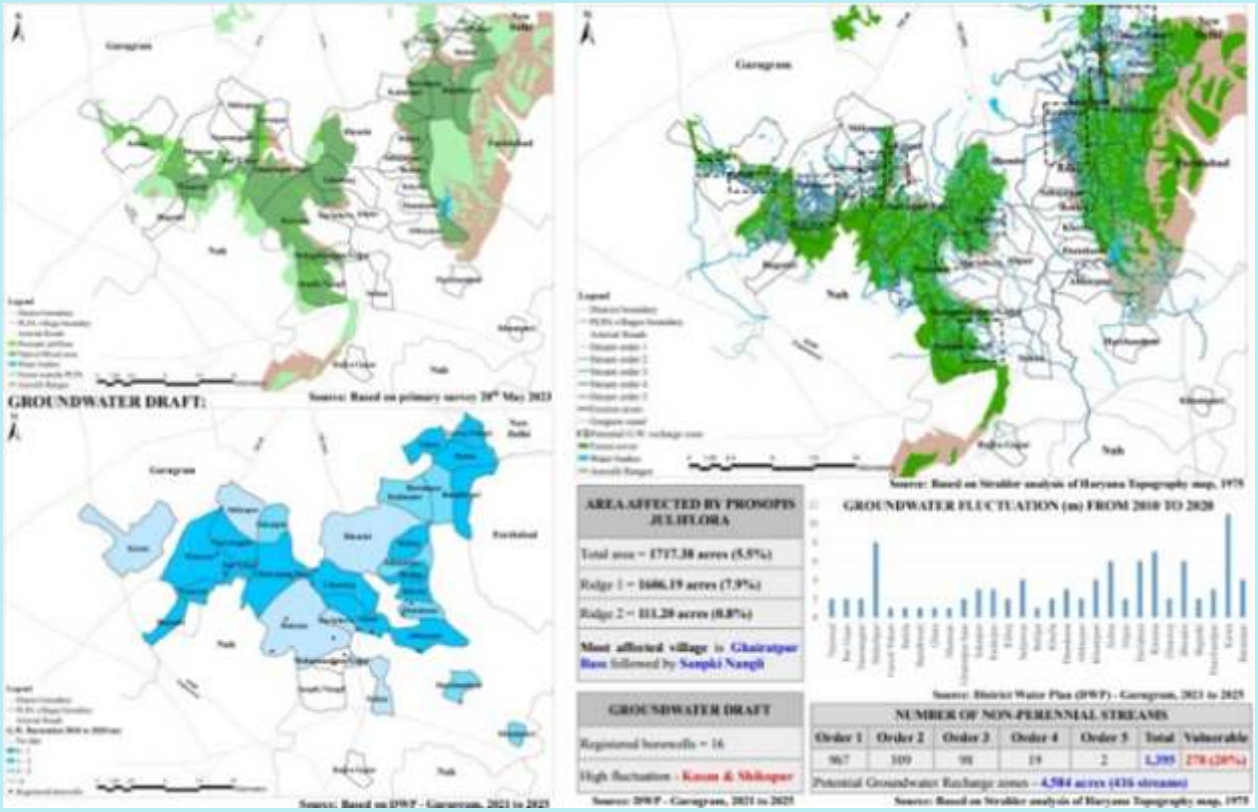
Joshi R., Khan A.A., Pant N.C., Agnihotri V., Verma K., Kumar P. Geochemical characteristics and suspended sediments dynamics in the meltwater from the Gangotri Glacier, Garhwal Himalaya, India, Environmental Earth Sciences, 2023

Singh R., Mehra R., Walia A., Gupta S., Chawla P., kumar H., Thakur A., Kaushik R., Kumar N. Colorimetric sensing approaches based on silver nanoparticles aggregation for determination of toxic metal ions in water sample: a review, International Journal of Environmental Analytical Chemistry, 2023

Katoch G., Prakash J., Jasrotia R., Verma A., Verma R., Kumari S., Ahmad T., Godara S.K., Ahmed J., Kandwal A., Fazil M., Maji P.K., Kumar S., Kumar G. Sol-gel auto-combustion developed Nd and Dy co-doped Mg nanoferrites for photocatalytic water treatment, electrocatalytic water splitting and biological applications, Journal of electronic Materials, 2023

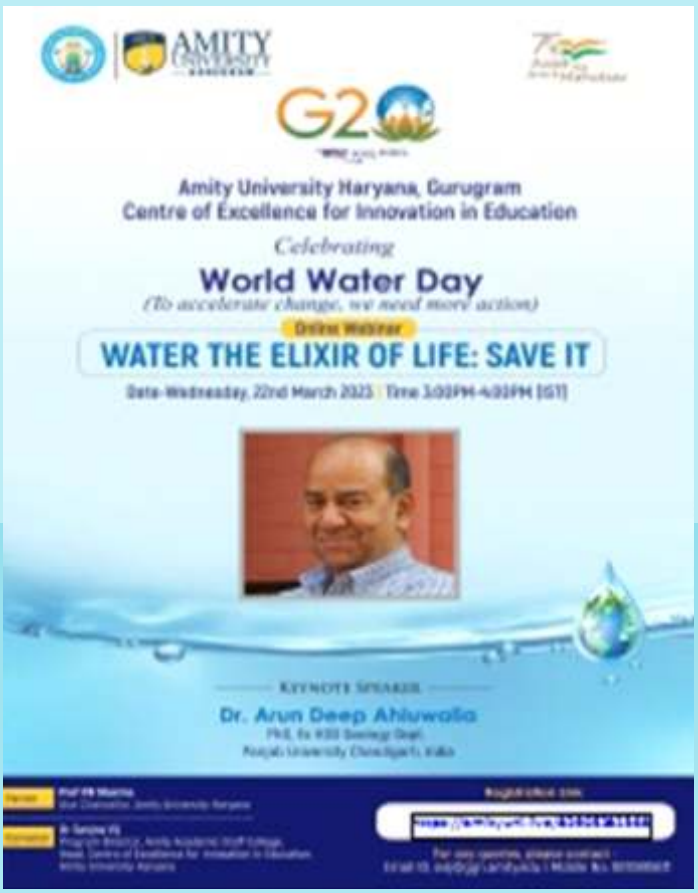
Yadav D., Dutta J. A systematic review on recent development of chitosan/alginate-based polyelectrolyte complexes for wastewater treatment, International Journal of Environmental Science and Technology,2023
Singh V.P. Parameters of Ground Water in India: An Analysis, Journal of Asiatic Society of Mumbai, April,2023, p.20-31

Vaya Dipti. Photocatalytic degrdation of Drugs: Sustainable solution of wastewater Treatment, 2023



HAPPENINGS AND EVENTS:

1. The World Water Day 2023 celebration at Amity University Haryana was organised on On 22 March,2023 to promote "**Water the Elixir of Life: Save it** "amongst faculty and students. The keynote address by Dr. Arun Deep Ahluwalia highlighted the importance of freshwater and sustainable water management, raising awareness among the attendees. The event served as a platform to advocate for action and emphasize the need to ensure access to safe and clean water for all, aligning with the goals of the G20 India Presidency.



2. A seminar was organised on "**Advanced Materials for Water Remediation**" on 1st of December 2022. Students learnt about that there are many types of water pollutants and remedies to clean these pollutants. The materials are activated Charcoal, Biochar, Carbon nanotubes etc. Students are also learnt about that how chemicals like dyes, pests, drugs and heavy metals pollute the water. Students gained the knowledge about the remedial process.

3. A **FDP on Universities & Colleges Leading by Example in Attainment of SDG's: Role of Teachers was organised to** build sensitivity and develop a holistic & collective approach on the Sustainable Development Goals and achieve a better and more sustainable future for all. To create an opportunity to encourage and boost teachers about their vision towards a better world their importance to our country and actions that teachers can take to help achieve these goals by 2030

COMMUNITY ENGAGEMENT AND OUTREACH ACTIVITIES:

As a part of regular curriculum students at AUH, are extensively involved in community engagement projects related to SDG 14 covering life under water, aquatic plants and animals. They through their engagement with nearby villages create an awareness regarding the adverse effect of polluted water on the life under water ecosystem. The pollutants such as plastics, dyes, chemicals etc when enters the water table and nearby dams or ponds destroy the aquatic life and affects the potable water.

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