6.5.6 Promoting Conscious Water Usage

Water is one of the most essential natural resources that sustains life, ecosystems, and development. Recognizing its significance, Karunya Institute of Technology and Sciences (KITS) has taken significant steps toward promoting conscious water usage within the campus. The institute is deeply committed to sustainable water management through education, infrastructure, awareness, and research. These initiatives aim not only to conserve water but also to ensure its efficient and responsible use across all campus activities.

Through various educational programs, infrastructural improvements, and community collaborations, KITS promotes a culture of sustainability and environmental stewardship. The institute's water conservation initiatives are closely aligned with the United Nations Sustainable Development Goal 6 (SDG 6) – *Clean Water and Sanitation*. By integrating technology, research, and community participation, KITS continues to lead by example in responsible water resource management.

Educational Activities (Conferences / Workshops / Seminars / Consultations)

A two-day event on "Climate Change and Sustainable Agriculture" was organized on May 10–11, 2023, by the Karunya Technology Business Incubation Park (KTBIP) and the School of Agricultural Sciences, commemorating India's G20 Presidency under the theme *"Vasudhaiva Kutumbakam – One Earth, One Family, One Future."* The event aimed to promote awareness and innovation in sustainable agriculture and water management practices among students and researchers.

During the event, students showcased innovative models, blogs, vlogs, and exhibits focusing on climate-resilient agriculture, water-efficient cropping systems, and eco-friendly technologies designed to promote sustainable resource use in farming. These exhibits reflected the creativity and research potential of students in addressing contemporary environmental and agricultural challenges.

Ms. Liza Goldberg (USA) conducted a hands-on training session on Google Earth Engine, focusing on *water and vegetation mapping techniques*. This session significantly enhanced the research capacity of both students and faculty, encouraging the integration of geospatial technology in sustainable water and land management studies.

Academic events

KITS organized a series of academic events promoting sustainable water management and research. The Integration of Earth Observations with Isotopes in Water Resources Management workshop held on December 8, 2023, engaged 56 participants and focused on sustainable water resource assessment. On October 17, 2023, World Food Day was celebrated with the theme *"Water is life, water is food. Leave no one behind,"* highlighting the food-water nexus and involving 250 participants. A seminar on Salt Water Intrusion: Challenges and Opportunities in Coastal Agricultural Ecosystems was conducted on October 31, 2023, with 147 participants, addressing issues of water quality in coastal regions. Additionally, a technical session on

Thermal Imaging for Infield Crop Water Mapping and Precision Irrigation took place on February 6, 2024, benefiting 294 participants through insights into precision irrigation technologies.

Awareness Creation and Outreach

KITS regularly organizes awareness programs, webinars, and outreach campaigns to foster conscious water use among students, faculty, and staff. Posters, flyers, and digital communication tools are used to disseminate key conservation messages across the campus. Student organizations at KITS, including the Rotaract Club, Nature Club, and NSS units, actively organize sustainability and water-related programs such as: National Pollution Control Day was observed on December 2, 2023, to raise awareness about the importance of preventing water, air, and soil pollution through sustainable practices. Similarly, World Wetlands Day was celebrated on February 7, 2024, emphasizing the conservation and restoration of wetlands as vital ecosystems for maintaining water quality and biodiversity.

Webinar on Enhanced Water Productivity

A As part of the knowledge exchange activities, international webinars were also conducted to strengthen research and technical skills. Dr. Yafit Cohen (Israel) delivered an insightful session on *remote sensing and precision irrigation*, which benefited 319 participants by introducing advanced tools for optimizing water use in agriculture.

Infrastructure and Water Efficiency Measures

KITS continuously upgrades its infrastructure to reduce water wastage and improve efficiency. Key measures include:

- Installation of sensor-based faucets and low-flow fixtures in hostels and academic blocks.
- Adoption of dual-flush toilets and automatic shut-off taps.
- Implementation of rainwater harvesting systems, stormwater drainage, and percolation pits to enhance groundwater recharge.
- Development of farm ponds and check dams for water storage and agricultural use.
- Reuse of treated wastewater for landscaping and horticulture, minimizing dependence on freshwater resources.

Collaboration and Partnerships

KITS actively collaborates with government agencies, NGOs, and research organizations for water-related studies and capacity-building programs. These partnerships help in implementing innovative water management practices and community outreach programs aimed at the sustainable use of water resources in the region.

Water Audits and Monitoring

The institute periodically conducts water audits to assess consumption patterns, detect leakages, and identify opportunities for conservation. These audits form the basis for implementing targeted interventions and optimizing campus-wide water management systems.

Water Efficient Appliances Usage

The university has installed a wide range of water-efficient appliances, including self-closing push taps, hand showers, flush valves, and automatic water level controllers in hostels, academic buildings, and common areas.

These initiatives are aimed at minimizing water wastage, promoting judicious use, and ensuring the long-term sustainability of water resources within the institution. The systematic use of automatic and self-closing taps, along with wireless water level controllers for overhead tanks, sumps, and borewell pumps, significantly reduces unnecessary water flow and prevents overflow losses.

Details of Water-Efficient Appliances Installed

Sl. No	Description of item	Location	Qty (Nos)
1	Self-closing Taps *(Taps (Push tap in wash basin, Hand shower, Push tap in water purifier, Flush valve)*	Hostel Campus	2736
2	Manual Operated Taps	Hostel Campus	2150
3	Self-closing Tap (*Taps (Push tap in wash basin, Hand shower, Push tap in water purifier, Flush valve)*	College Campus	700
4	Manual Operated Taps	College Campus	500
5	Water level controllers *(overhead water tanks, Water sumps, Bore well pumps)*	College & Hostel Campus	177

6	Toilets	Hostel Campus	880
	Total		8073

Metric Calculation

Appliance	Total Number	Total number water Efficient appliances	Percentage
Taps	6086	3436	56.4
Water level controllers	177	177	100
Toilets	930	880	94.6
		Average Percentage	83.6

KITS has achieved more than 80% implementation of water-efficient appliances. This extensive adoption highlights the university's proactive approach to water sustainability, ensuring that every drop is used efficiently while fostering environmental awareness among students and staff.

Water Efficient appliances

Wireless automatic water flow controllers

Reuse of the recycled/treated/new water from STP for gardening