SUSTAINABLE DEVELOPMENT GOALS

KIIT Sustainable Development Report 2024

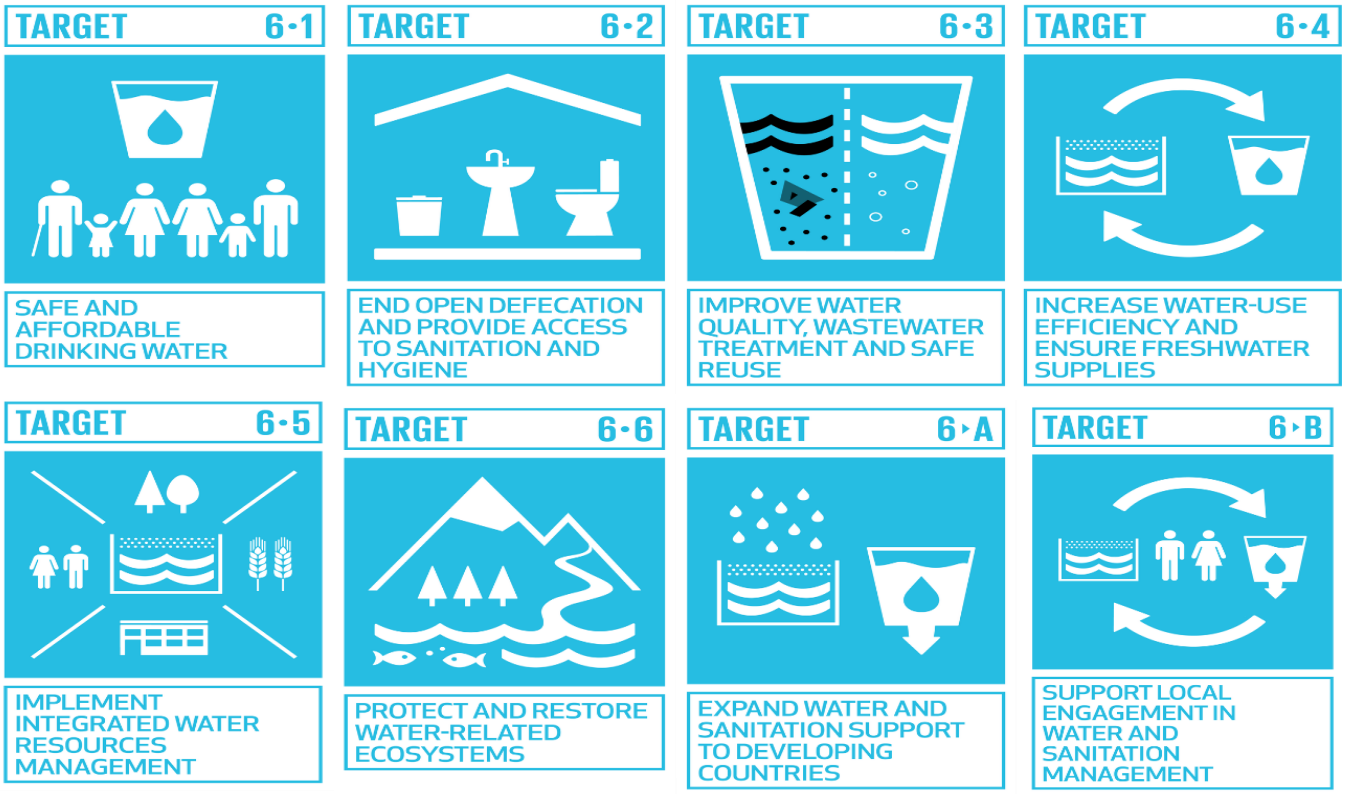
6 CLEAN WATER AND SANITATION

KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY
KIIT Deemed to be University
(Declared U/S 3 of UGC Act, 1956), Bhubaneswar, Odisha, India

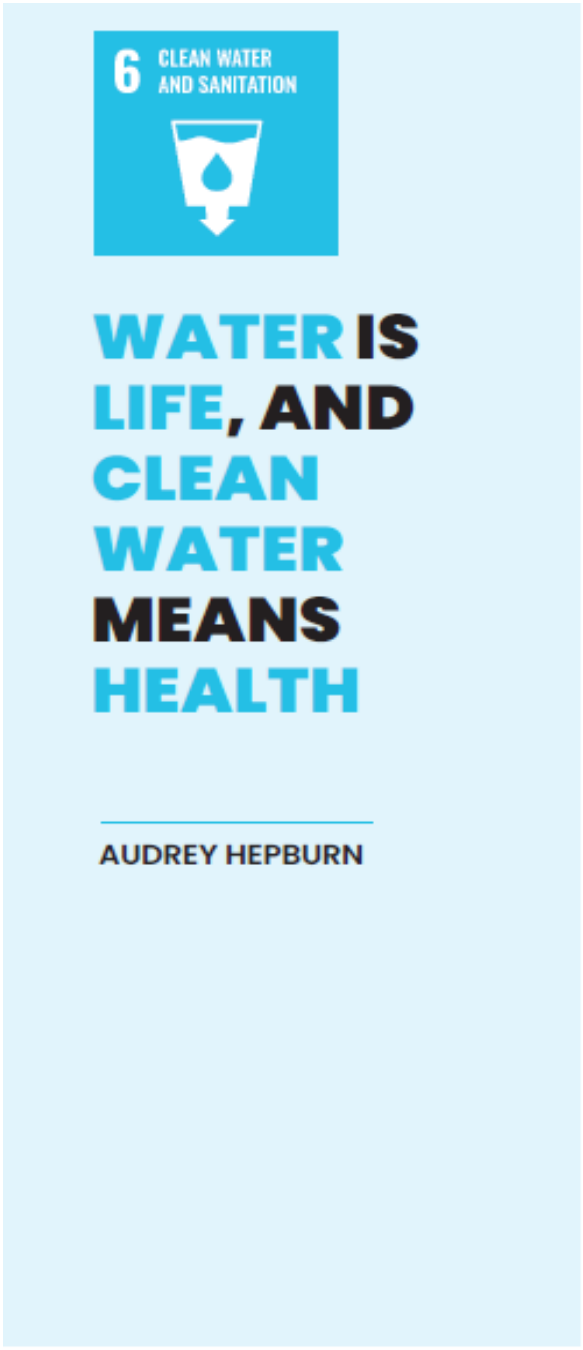
6. Introduction

KIIT University is dedicated to supporting **SDG 6 – Clean Water and Sanitation** through research, efficient water management, and community engagement. The university conducts research focused on water conservation technologies, sustainable water management practices, and solutions to address water scarcity and pollution. On campus, KIIT monitors and manages water consumption per person, implementing measures to reduce usage through awareness programs, efficient fixtures, and smart water management systems. Water usage is carefully monitored, and practices promoting responsible care, such as rainwater harvesting and drip irrigation, are actively implemented. KIIT also focuses on water reuse by treating and recycling wastewater for non-potable purposes, minimizing freshwater consumption and environmental impact. In the community, the university engages in initiatives such as clean water supply projects, awareness drives on sanitation, and rural water management programs, contributing to improved local water access and hygiene. Sustainability remains central, ensuring that water conservation efforts are environmentally sound, economically viable, and socially inclusive, contributing to long-term water security.

The SDG 6 (Clean Water and Sanitation) report focuses on the progress, key initiatives, and impact achievements across the following targets:



6.1 KIIT's Commitment to SDG 6 (Clean Water and Sanitation): Research Publications, Patents Filed, Global Collaborations, Citations Received, Events Organized, and Community Activities – Key Figures



6.2 Measure the Water Used in the KIIT University

KIIT's commitment to the Sustainable Development Goals (SDGs), including SDG 6, is woven into its curriculum and community work. The university fosters innovation and provides researchers with facilities and opportunities to develop solutions for sustainable development challenges, some of which are relevant to marine and freshwater ecosystems.

Kalinga Institute of Industrial Technology (KIIT) provides extensive and reliable drinking water facilities across its campus, especially in the academic buildings and student hostels. The university also maintains its own water treatment and conservation systems to ensure the safety and sustainability of the water supply.

❖ **Hostels**

- **Water coolers:** All student hostels are equipped with water coolers that have Aqua guard filters to provide students with safe, cool, and clean drinking water.
- **Hot water:** Some hostels also provide access to hot drinking water from filters, though the availability of hot or cold water can vary by tap and time.
- **Continuous supply:** KIIT hostels are provisioned with a 24-hour water supply.

❖ **Campus buildings**

- **Water treatment plants:** The campus has its own Reverse Osmosis (RO) water treatment plants to purify water for drinking. In addition, UV chambers are used to treat water before it is distributed from overhead tanks.
- **Multiple water points:** Numerous taps and drinking water points are installed throughout the campus to ensure easy access for students and staff.
- **Regular testing:** The university conducts regular water quality testing to monitor common parameters and ensure the water is safe and free from contamination.



❖ KIIT University provides free ***dahi pani*** (a traditional yogurt-based drink) to students on campus during the hot summer months. The service is offered at various points across the university's different campuses in Bhubaneswar.

Details of the service:

- **Location**: *Dahi pani* is distributed at multiple locations across the large university campus, including various hostels and food courts.
- **Purpose**: The service is meant to help students stay hydrated and combat the heat during Bhubaneswar's intense summer season.
- **Provider**: The service is managed by the university's in-house hospitality wing, which also runs the canteens, food courts, and guest houses.
- **Other campus facilities**: This service is in addition to the university's many other student-centric amenities, such as a large number of canteens, food courts, and multi-cuisine hostel messes.

6.3 Sustainability initiatives: Water Usage and Care

1. **Raise Awareness:** Promote water efficiency practices among students, faculty, and staff through awareness campaigns.

- **Judicious Management and conservation of water resource:** KIIT-DU has adopted a rooftop rainwater-based groundwater recharge system. Groundwater recharging is an excellent rainwater-capturing process. Any quantity of rainwater may be channelized to replenish the groundwater level of the surrounding areas. The average water recharged annually from the rooftop at KISS-DU is 10980 Cu.

Bore-well/Open well recharge

Rainwater collected at the rooftop in the various buildings is redirected through PVC pipes and dynamic rainwater filters to defunct and functioning borewells.

Ground Water Recharge Pit – 1

Ground Water Recharge Pit – 2

RAIN WATER HARVESTING

Here are the details of building which are equipped with rain water harvesting.

Sl no	Campus	Places	SQFT
1	11	GH QC-VI	58307
2	11	Kiit school of chemical	11925
3	15	Kp-VI(A & B)	110000
4	15	Kp-VI©	571592
5	16	BH	84600
6	16	GH	98600
7	18	BH	37004
8	18	Academic Block	34262
		TOTAL -	10, 06,290 sq. ft

Rainwater Harvesting Equipment (Location – 1)

Rainwater Harvesting Equipment (Location – 2)

Rainwater Harvesting Equipment (Location – 3)

Ground Water Recharging

Details of Ground Water Recharging arrangements of different campuses

SL	LOCATION	DIA OF BORE	QUANTITY	REMARKS
01	CAMPUS-9(A-block)	6"	1	Completed
02	CAMPUS-9(B-block)	6"	1	Completed
03	CAMPUS-9(SCHOOL BACK SIDE)	6"	1	Completed
04	CAMPUS-5(WEST SIDE)	8"	1	Completed
05	CAMPUS-5(SOUTH SIDE)	8"	1	Completed
06	KP-6(C-BLOCK)	8"	1	Completed
07	KP-6(A-BLOCK)	6"	1	Completed
08	CAMPUS-11(MAIN GATE)	8"	1	Completed
09	CAMPUS-11(LH SIDE)	6"	1	Completed
10	CAMPUS-11(DIPLOMA HOSTEL)	6"	1	Completed
11	CAMPUS-16(LH BACK SIDE)	6"	1	Completed
12	CAMPUS-18(BH SIDE)	5"	2	Completed
13	CAMPUS-18(ARYAPALLI SIDE)	5"	2	Completed

Waste Water Management

Wastewater from various academic buildings, hostels, and kitchens is treated in three Sewage Treatment Plant (STP), with a total capacity of 2750 Kilometers per day (KLD), meaning 2750000 liters per day. The treated water is pumped back for watering the plants on the various campuses.

Construction of tanks and bunds

Storm water and surplus rainwater that cannot be channelized to the borewells is sent over to the large open waterbodies within the campus, such as pond 1 and pond 2, which together span a total area of 15.5 acres.


Pond -1 for Water Conservation and Aquaculture


Pond -2 for Water Conservation and Aquaculture

Pond -1 for Water Conservation and Aquaculture

Pond -1 for Water Conservation and Aquaculture

Pond -2 for Water Conservation and Aquaculture

Pond -2 for Water Conservation and Aquaculture

Central R.O. Based Water Treatment Plants

A central water treatment plant is installed at KISS for the purpose of supplying drinking water to taps throughout the day. It is a reverse osmosis based water treatment plant with TDS and pH regulation arrangement with UV chamber. The capacity is 5000 ltrs / hour. Umpteen number of taps have been installed in order to supply water to the students.


Automatic Water–Level Controller For Over Head Tanks

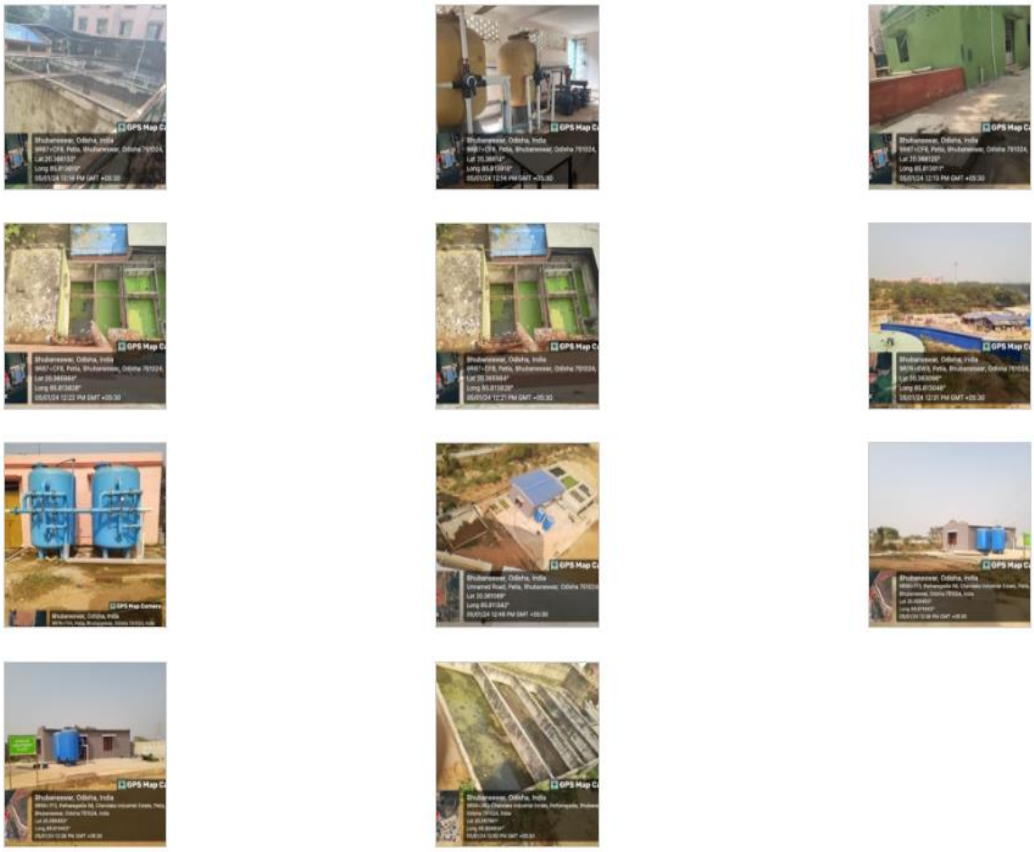

Automatic Water–Level Controller For Over Head Tanks


Central R.O. Based Water Treatment Plants


Central R.O. Based Water Treatment Plants

Wastewater recycling

Wastewater from various academic buildings, hostels, and kitchens is treated in three Sewage Treatment Plant (STP), with a total capacity of 2750 Kilometers per day (KLD), meaning 2750000 litres per day. The treated water is pumped back for watering the plants on the various campuses.



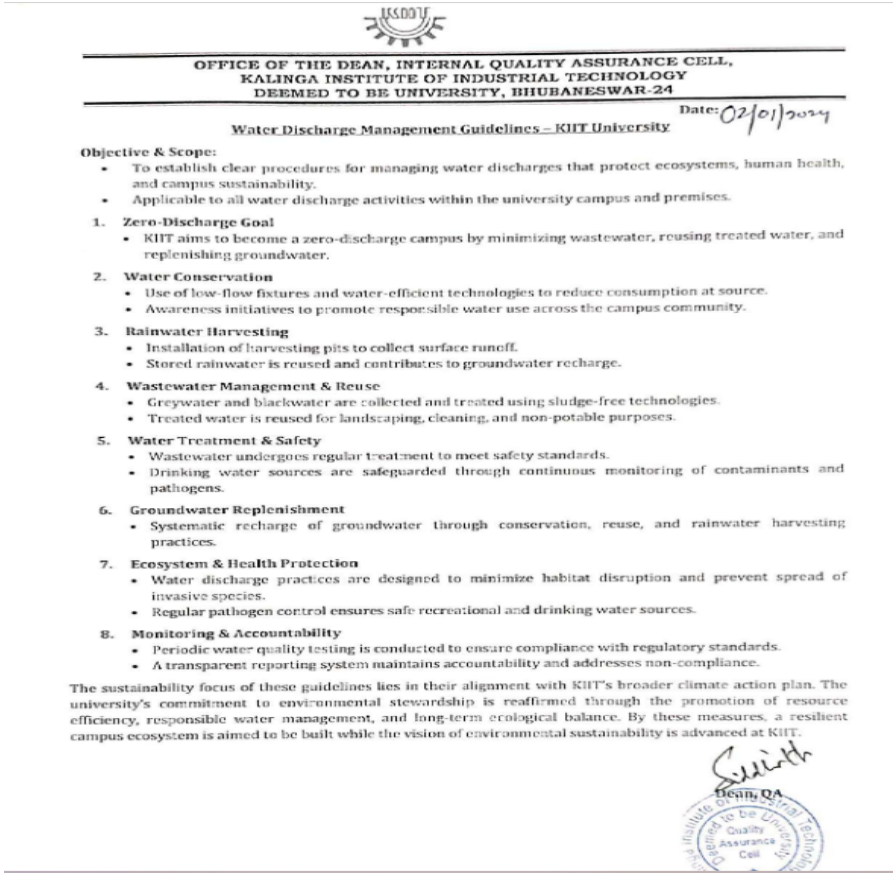
- **Use of Sensors for Overhead Water Tanks**

Sensors are used to detect the water level in the overhead water tanks. Thus, by using sensors water level can be detected and appropriate switching of motor can be done. There are two sensors, one to indicate the lower level and one to indicate the upper cutoff level which shows the tank is full.By using this sensors unnecessary running of motor and spilling of water can be prevented.

An average of 3, 60,000 L of water is used by the University per month.

The sources of water used in the College are two wells present in the campus. These wells are recharging with rainwater from the roof. A total of 18000L of water is pumped out from the well every day.

- **Water Discharge Management Guidelines**



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KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY
DEEMED TO BE UNIVERSITY, BHUBANESWAR-24

Date: 02/01/2024

Water Discharge Management Guidelines – KIIT University

Objective & Scope:
- To establish clear procedures for managing water discharges that protect ecosystems, human health, and campus sustainability.
- Applicable to all water discharge activities within the university campus and premises.

1. **Zero-Discharge Goal**
   - KIIT aims to become a zero-discharge campus by minimizing wastewater, reusing treated water, and replenishing groundwater.
2. **Water Conservation**
   - Use of low-flow fixtures and water-efficient technologies to reduce consumption at source.
   - Awareness initiatives to promote responsible water use across the campus community.
3. **Rainwater Harvesting**
   - Installation of harvesting pits to collect surface runoff.
   - Stored rainwater is reused and contributes to groundwater recharge.
4. **Wastewater Management & Reuse**
   - Greywater and blackwater are collected and treated using sludge-free technologies.
   - Treated water is reused for landscaping, cleaning, and non-potable purposes.
5. **Water Treatment & Safety**
   - Wastewater undergoes regular treatment to meet safety standards.
   - Drinking water sources are safeguarded through continuous monitoring of contaminants and pathogens.
6. **Groundwater Replenishment**
   - Systematic recharge of groundwater through conservation, reuse, and rainwater harvesting practices.
7. **Ecosystem & Health Protection**
   - Water discharge practices are designed to minimize habitat disruption and prevent spread of invasive species.
   - Regular pathogen control ensures safe recreational and drinking water sources.
8. **Monitoring & Accountability**
   - Periodic water quality testing is conducted to ensure compliance with regulatory standards.
   - A transparent reporting system maintains accountability and addresses non-compliance.

The sustainability focus of these guidelines lies in their alignment with KIIT's broader climate action plan. The university's commitment to environmental stewardship is reaffirmed through the promotion of resource efficiency, responsible water management, and long-term ecological balance. By these measures, a resilient campus ecosystem is aimed to be built while the vision of environmental sustainability is advanced at KIIT.

Dean, QA

https://sustainability.kiit.ac.in/wp-content/uploads/2025/10/Water-Discharge-Management-Guidelines_.pdf

- **Green audit reports on water conservation by recognized bodies**
  https://sustainability.kiit.ac.in/wp-content/uploads/2025/10/KIIT-Green-Audit-Report-2023-24.pdf

The University ensures that water sources remain safe and free from contamination. As part of the zero-waste management strategy, students take back food waste, reducing water consumption for cleaning purposes.

Rooftops of new buildings, covering an area of 33,108.68 m^2, can be used to recharge wells, allowing approximately 102,532 m^3 of water to be harvested. Additionally, a proposed 10,000 L rainwater harvesting tank can supply water for laboratory needs, particularly for distillation units where water is used as a coolant.

The distillation unit has a capacity of 1 L/hour, with 60 L of water required as coolant per liter of distilled water. Annually, the unit requires approximately 1,500 L of coolant water. Utilizing rainwater from the harvesting tank can fully meet this requirement, with the water recycled through a separate plumbing system.

- Water recycled and reused by STP – 210,000,000 ltr.s / Year
- Rain Water Harvesting : Roof top rain water is channelized for recharging ground water level 45,00,000 ltr.s / year
- Initiative for Ecological Balance through plantations Integrated Farming Activities.
- Organic waste management and biogas generation.
- Awareness Campaign and Training to Students.
- CO2 Reduction by steam cooking, Solar water heating, biogas use and solar power use – 1486 tons / year.

Water Pollution Prevention Guidelines

KIIT DU is committed to protecting the marine environment by preventing and reducing land-based pollution. Through proactive initiatives, education, community engagement, technology, and collaborations, the university aims to minimize its ecological footprint and lead in sustainable development and marine conservation.

https://sustainability.kiit.ac.in/wp-content/uploads/2025/10/Marine-Pollution-Prevention-Policy_compressed.pdf

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KIIT University Marine Pollution Prevention Policy

KIIT University is committed to protecting the marine environment by preventing and reducing land-based pollution. Through proactive initiatives, education, community engagement, technology, and collaborations, the university aims to minimize its ecological footprint and lead in sustainable development and marine conservation.

1. **Control and Reduce Land Derived Pollution:** Minimize the release of pollutants from campus activities into adjacent water bodies through the following measures:
   - **Holistic Waste Handling:** A robust recycling program will be implemented for plastics, paper, glass, and other materials, alongside the safe disposal of hazardous waste, including e-waste and chemicals, through authorized agencies.
   - **Eco-Friendly Procurement:** Environmentally Preferable Purchasing (EPP) strategies will be adopted, prioritizing eco-friendly products and suppliers committed to sustainability, especially for landscaping and cleaning services.
   - **Prevention of Hazardous Substance Spills:** Emergency response protocols for potential oil and chemical spills will be developed and regularly rehearsed, supported by investments in advanced spill-response technologies and comprehensive staff training in the safe handling of hazardous materials.
2. **Encourage Environmentally Responsible Practices:** Encourage environmentally responsible behaviour among students, faculty, staff, and the broader community through:
   - **Green Landscaping Practices:** Adopt eco-friendly techniques such as integrated pest management, grass cycling, drip irrigation, composting, and the use of native, drought-resistant plants to minimize resource consumption.
   - **Civic Engagement:** Conduct regular cleanup campaigns along nearby beaches, rivers, and water bodies with active participation from NSS volunteers, environmental clubs, students, staff, and the local community to strengthen collaborative conservation efforts.
3. **Education and Awareness Initiatives:** Promote understanding of marine pollution and sustainability within the KIIT community through:
   - **Educational Program Planning:** Introduce modules on marine pollution, its impacts, and mitigation strategies into relevant academic programs.
   - **Educational Workshops:** Organize regular workshops and seminars with experts in marine conservation and sustainability to engage and inspire students, faculty, and staff.
4. **Encourage Collaborative Efforts:** Strengthen marine conservation efforts by building partnerships and engaging in collective action through:
   - **Focused Partnerships:** Collaborate with local and national marine conservation organizations to enable knowledge exchange and implement joint conservation projects.
   - **Global Partnerships:** Actively participate in international forums and initiatives to align with emerging best practices and contribute to global efforts in reducing marine pollution.
5. **Implementation and Monitoring:** The Sustainability and Environment Committee of KIIT University will be responsible for implementing this policy and ensuring its effective execution. The policy will be reviewed annually and updated as required to incorporate the latest research, technological advancements, and evolving sustainable practices, thereby maintaining its relevance and effectiveness.

Dean, QA

- **Waste Management:** Volunteers have installed numerous dustbins across the adopted villages to promote proper waste segregation and disposal. Plans are underway to upgrade these into Smart Dustbins equipped with sensors to improve efficiency and maintain hygiene.

- **Renewable Energy Awareness:** Many villagers own cattle, and volunteers are conducting awareness campaigns to inform them about applying for biogas plant installations under Government of India schemes. This initiative encourages the use of cow dung for biogas generation, promoting clean and renewable energy at the household level.

2. Courses and Workshops Introduced to Promote Water Conservation Literacy

- **Modeling Applications in Water Resources Engineering:** KIIT offers a specialized internship program on *Modeling Applications in Water Resources Engineering* to build the capacity of interns in applying statistical, mathematical, and optimization techniques for sustainable water resource management. The program equips participants with practical skills in data analysis, modeling, and problem-solving essential for planning and managing river basins and water projects. Through interactive sessions and hands-on activities, interns gain exposure to advanced tools and methods for addressing challenges like demand-supply imbalance, climate impacts, and resource sustainability.
  - ✓ Also, KIIT offers **Post Graduate Programs (M.Tech) in Water Resource Engineering (2 Yrs Programme)**

https://civil.kiit.ac.in/water-resources-engineering/

KIIT implements water resources engineering modeling through various educational programs, internships, and seminars that focus on applications of technologies like GIS, remote sensing, and software like HEC-RAS, SWAT, and EPANET. These programs teach students to use advanced methods for planning, development, and management of water resources by integrating statistical and mathematical modeling principles.

- **Monitoring the Health of Aquatic Ecosystems:** KIIT has established **Water Knowledge Centers** in the University and in different parts of the state. Furthermore, the University has established one Centre of Excellence for Water Conservation since 2009 and the faculties are working in the following areas: Hydro-Environment, Groundwater Hydrology, Ports and Coastal Engineering, Water Management and Hydro Informatics, River Hydraulics, Water and Wastewater, Geo-spatial techniques, Soft Computing Techniques, Modeling Techniques etc.

- **Movie Screening for students on "Silent Killers of the Ocean" by KAEWS:** The KIIT Animal & Environmental Welfare Society (KAEWS) hosted a powerful screening of Ghost Nets: Silent Killers of the Ocean, a documentary that sheds light on the environmental and ecological impacts of abandoned, lost, or discarded fishing nets, commonly known as "ghost nets." for its members.

  The screening attracted over 150 attendees, including marine conservationists, and a panel discussion was held with experts in marine ecology, sustainable fishing practices, and environmental policy, providing the audience with deeper insights and actions that can be taken to combat this urgent issue.

  Through stunning underwater footage and firsthand accounts from affected communities, the documentary uncovered the invisible threat ghost nets pose to marine ecosystems, trapping marine animals such as sea turtles, dolphins, and fish, and often leading to their death. Attendees left with a greater understanding of the problem and a renewed sense of responsibility toward ensuring that ghost nets are no longer allowed to silently devastate the ocean's ecosystems.

  https://ksac.kiit.ac.in/news/movie-screening-for-students-on-silent-killers-of-the-ocean-by-kaews/

3. **Fresh-Water Ecosystems:** KIIT has been actively engaged in conserving and restoring freshwater ecosystems through education, research, and community outreach. The University's initiatives focus on wetland preservation, biodiversity protection, and sustainable water management, particularly through its long-standing association with Chilika Lake—Asia's largest brackish water lagoon.

- **KIIT School of Mass Communication Empowers Future Journalists on 'Wetlands for LiFE'**
  The KIIT School of Mass Communication, Bhubaneswar, hosted the *Wetlands for LiFE Media Students Engagement Programme* on August 22–23, 2024, bringing together media professionals, environmental experts, and conservationists to discuss the media's role in wetland conservation. Organized by the Centre for Media Studies (CMS) in collaboration with KIIT-DU, GIZ India, and other partners, the workshop focused on enhancing media students' understanding of wetland ecosystems, with special emphasis on Chilika Lake.

- **9th International Congress & Exhibition on Arsenic in the Environment (As2024) at KIIT**
  With a global perspective, the 9th International Congress & Exhibition on Arsenic in the Environment took place at Kalinga Institute of Industrial Technology (KIIT) in Bhubaneswar, Odisha, India, from 20th to 24th October 2024. Known as As2024, the Congress was themed "Arsenic and Other Pollutants, Water Security and One Health under Global Climate Change Scenario" and was endorsed by the Executive Board of the International Society of Groundwater for Sustainable Development, Sweden.
  https://as2024.kiit.ac.in/wp-content/uploads/2024/03/First-Circular_As2024_KIIT-India.pdf

- **JAL DIWAS** was celebrated at KIIT Deemed to be University on 22nd July, as part of the JAL SHAKTI ABHIYAN initiated by Hon'ble Prime Minister of India Shri Narendra Modi to emphasize on Jal Sanchay or Water Conservation and Water Resource Management.



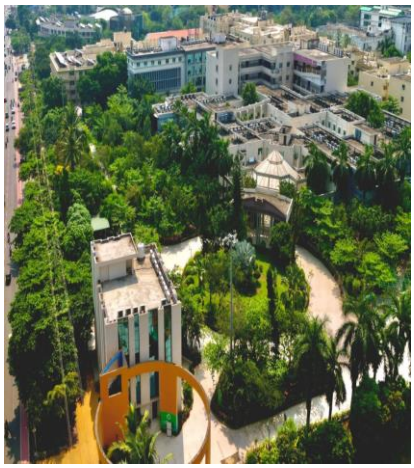

- **Dr. Saswata Biswas Highlights Barriers to Rural Toilet Adoption in Eye-Opening Talk**
  07.03.2024 | KIIT-DU
  Dr. Saswata Biswas from IRMA delivered an insightful lecture on rural toilet adoption, emphasizing structural, psychological, and social barriers. Drawing from Swachh Bharat insights, he discussed gender roles, water access, cultural beliefs, and inadequate IEC strategies—encouraging future changemakers to rethink sanitation from a behavioral and socio-economic lens.

- KIIT's water saving efforts involve a "**Water Conservation and Management**" initiative with campus-wide strategies such as implementing low-flow fixtures, reusing greywater, and rainwater harvesting. Mass awareness programs are organized for students and the wider community, promoting responsible water usage through events like World Water Day celebrations and collaborations on rainwater harvesting structures in nearby villages.

4. **Water-Conscious Planting:** KIIT is implementing water-conscious planting by using recycled treated wastewater for irrigation and implementing rainwater harvesting systems across its campuses. The university also focuses on mass plantation drives as part of its broader KIIT Green initiative to create a healthy and sustainable environment. These efforts are supported by a Centre of Excellence for Sustainability and dedicated water conservation teams, which conduct awareness programs and gather data to promote water management and resource conservation.
   - **Recycled Water Use:** Treated wastewater from the campus's sewage treatment plants is used for plantation and gardening purposes, reducing reliance on fresh water sources.
   - **Rainwater Harvesting:** KIIT has established rainwater harvesting and water management systems to conserve rainwater for campus use.
   - **Mass Plantation: A**s part of its KIIT Green initiative, KIIT undertakes large-scale tree plantation drives to enhance the campus's green cover and environmental health.

Large-scale Plantation Drives and Maintenance of Water-conscious Gardens on Campus





6.4 Water in the Community

- **Educational Opportunities**
  - ✓ Certificate and elective courses on water resource management introduced.
  - ✓ Students engaged in projects on water-conscious practices.
- **Promoting Conscious Water Usage**
  - ✓ Water-saving campaigns on campus.
  - ✓ Student-led initiatives on “Save Water” drives in nearby communities.
- **Off-Campus Water Conservation Support**
  - ✓ Outreach programs in villages around Bhubaneswar to support water harvesting and conservation.
  - ✓ Partnerships with NGOs for rural water management.
- **Sustainable Water Extraction on Campus**
  - ✓ Campus borewells regulated with sustainability measures.
  - ✓ Rainwater harvesting supplements groundwater recharge.
- **Cooperation on Water Security**
  - ✓ National and international collaborations for water security research.

ART OF GIVING

Giving education to the deprived is like giving sight to the blind *-Achyuta Samanta*

PHILOSOPHY OF LIFE

'Art of Giving' is a not-for-profit initiative for spreading, supporting and promoting the practice of giving around the world. It is based on the philosophy of life of **Prof. Achyuta Samanta**, who has struggled through an experience of poverty, hunger, humiliation in receiving and pleasure in giving from his childhood. **He gives the credit of all his success to 'Art of Giving' and has been working relentlessly to achieve zero poverty, zero hunger and zero illiteracy since 1987.**

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