SUSTAINABLE DEVELOPMENT GOALS

KIIT Sustainable Development Report 2024

14 LIFE BELOW WATER

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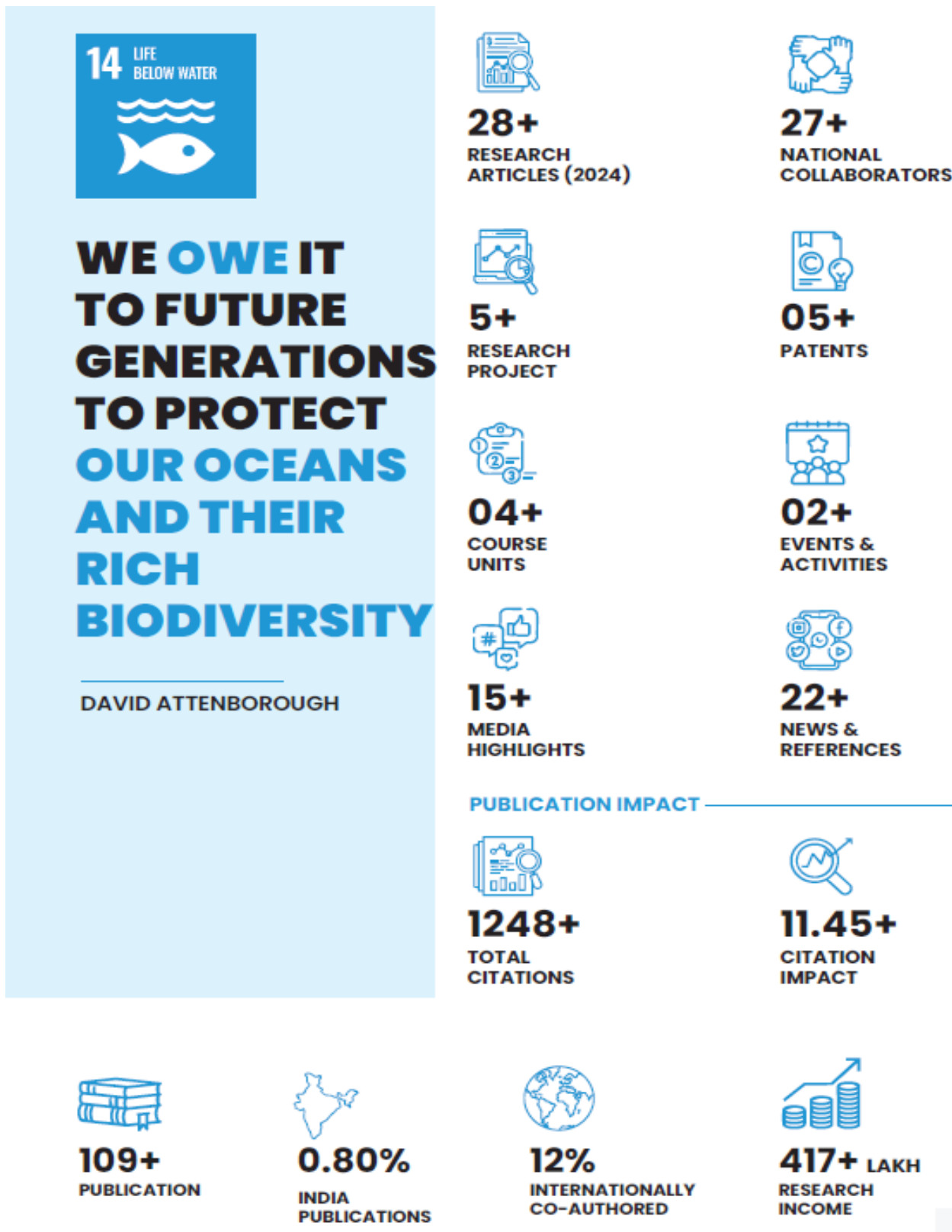
14. Introduction

KIIT University actively supports **SDG 14 – Life Below Water** through research, education, and practical conservation efforts aimed at protecting aquatic ecosystems. The university conducts research focused on marine biodiversity, sustainable aquaculture, and the impacts of pollution on aquatic life, contributing to solutions for preserving water ecosystems. Through education, KIIT raises awareness among students about the importance of aquatic ecosystem conservation, integrating environmental responsibility into the curriculum and organizing workshops and seminars. The university supports aquatic ecosystems through action by engaging in clean-up drives, habitat restoration projects, and promoting responsible practices in local water bodies. Water-sensitive waste disposal systems are implemented on campus to prevent harmful discharge into nearby rivers and lakes, ensuring proper treatment of wastewater and hazardous materials. KIIT also focuses on maintaining a healthy local ecosystem by promoting biodiversity, protecting wetlands, and encouraging sustainable land-use practices. These combined efforts reflect KIIT's dedication to protecting marine life and promoting sustainability for the health of our planet's water resources.

The SDG 14 (Life Below Water) report focuses on the progress, key initiatives, and impact achievements across the following targets:
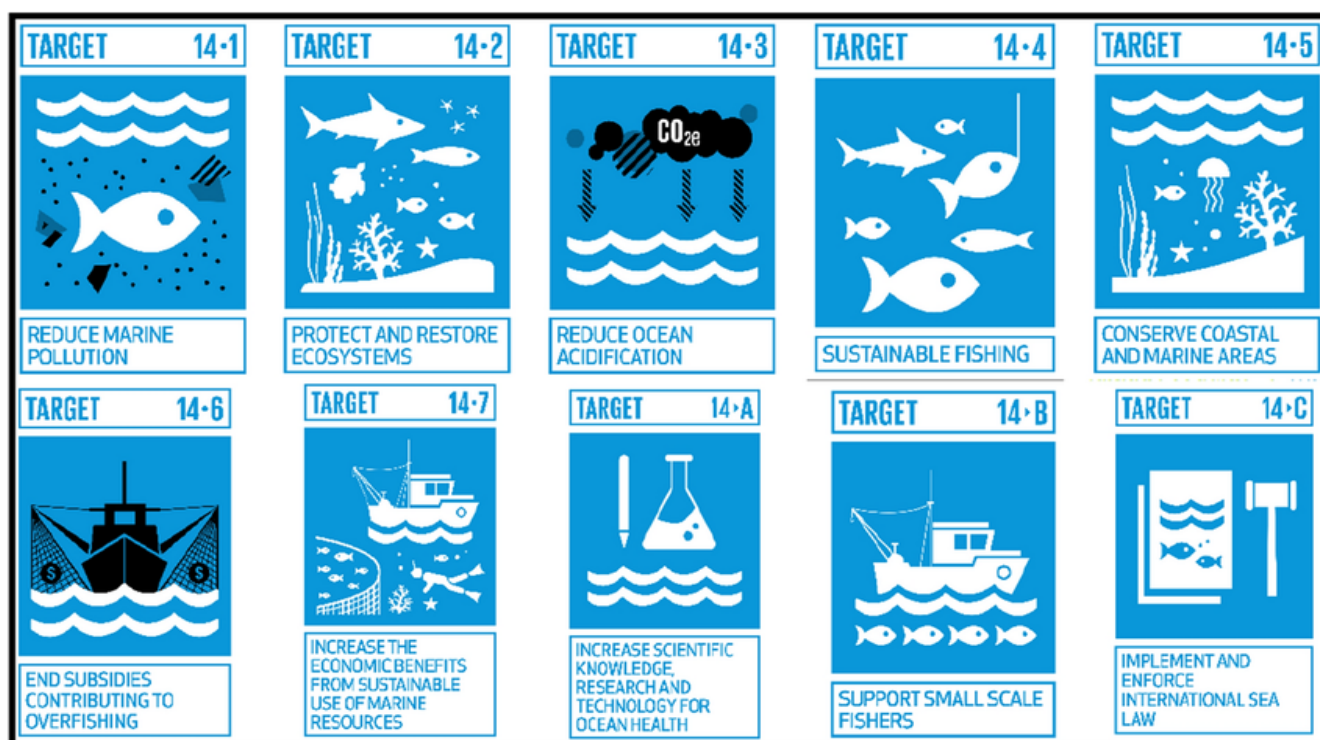
14.1 KIIT's Commitment to SDG 14 (Life Below Water): Research Publications, Patents Filed, Global Collaborations, Citations Received, Events Organized, and Community Activities – Key Figures

14 LIFE BELOW WATER

WE OWE IT TO FUTURE GENERATIONS TO PROTECT OUR OCEANS AND THEIR RICH BIODIVERSITY

DAVID ATTENBOROUGH

28+ RESEARCH ARTICLES (2024)

27+ NATIONAL COLLABORATORS

5+ RESEARCH PROJECT

05+ PATENTS

04+ COURSE UNITS

02+ EVENTS & ACTIVITIES

15+ MEDIA HIGHLIGHTS

22+ NEWS & REFERENCES

PUBLICATION IMPACT

1248+ TOTAL CITATIONS

11.45+ CITATION IMPACT

109+ PUBLICATION

0.80% INDIA PUBLICATIONS

12% INTERNATIONALLY CO-AUTHORED

417+ LAKH RESEARCH INCOME

14.2 Supporting Aquatic Ecosystems through Education

1. **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.

2. **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/

❖ **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
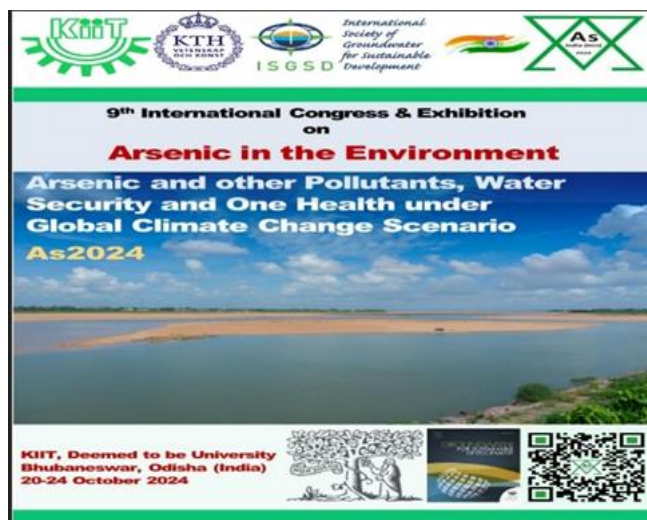
❖ Sustainable Fisheries

Promoting sustainable fisheries is a key focus area at KIIT, aligning with national and global blue economy goals. Through conferences, research, and student engagement programmes, KIIT advocates responsible aquaculture practices, marine biodiversity conservation, and innovative solutions for sustainable livelihood development among coastal communities.

- **National Conference on Blue Economy (hosted by KIIT TBI & partners) — 2024**

The International Conference on Blue Economy organised by BCKIC Foundation in association with BRIC ILS, KIIT University & KIIT-TBI and supported by Ministry of Forest, Environment & Climate Change, DBT BIRAC, DST, Ministry of Ports, Shipping & Waterways, Fisheries & Animal Resource Development Dept, GoO served as a enabling platform for innovations and technology in the marine sector, inviting professionals from diverse fields to explore the vast potential of marine ecosystem in various applications.


❖ Overfishing

Recognizing the environmental and socio-economic impacts of overfishing, KIIT encourages awareness and research initiatives on responsible fishing practices and ecosystem balance. The University integrates discussions on overfishing and resource sustainability into its academic, outreach, and policy dialogues related to the blue economy and coastal ecology.

1. **Chilika Lake Microbial Study and Overfishing Impact**

   The collaborative study by the Chilika Development Authority (CDA) and KIIT School of Biotechnology on microbial communities in Chilika Lagoon helps assess the lagoon's ecological balance. Since microbes drive nutrient cycling and primary productivity—the base of the aquatic food web—this research identifies ecosystem stress from overfishing, pollution, and habitat loss. Monitoring bacterial dynamics and water quality supports strategies for sustainable fisheries and long-term conservation of fish populations.
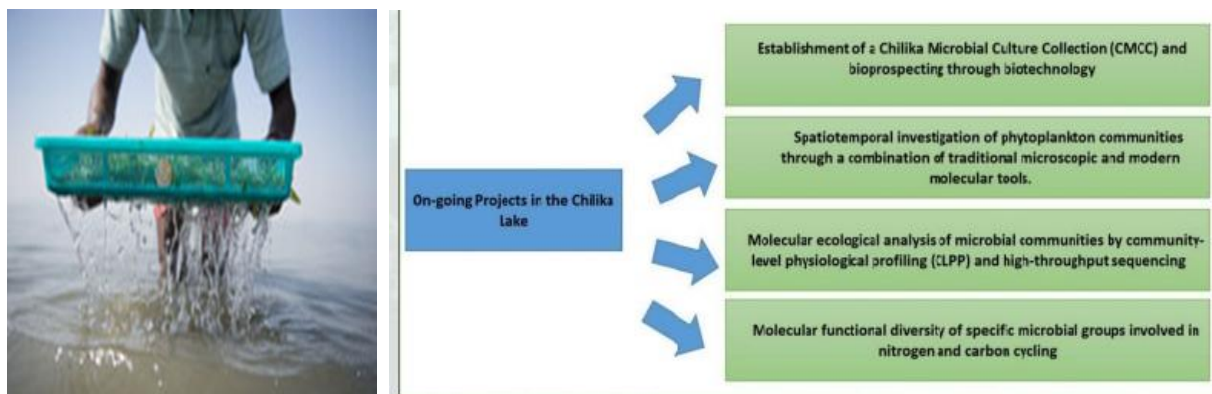
2. **KIIT DU Hosts 9th Biotech Conclave on Sustainability & Innovation**

The 9th Biotech Industry Conclave-2024, themed "Biotechnology and Sustainability: Expanding Horizons", was hosted by KIIT School of Biotechnology with over 30 industry leaders, five-panel discussions, and 22 expert talks. The event emphasized industry academia collaboration to make students technology-ready for the evolving biotech sector. Keynote speaker Sanjeev Vashishta, MD, Pathkind Diagnostics, highlighted the biotech-digital convergence for sustainable healthcare, food production, and digital governance, addressing India's socio-economic challenges.

14.3 Supporting Aquatic Ecosystems through Action

KIIT demonstrates its commitment to protecting aquatic ecosystems through hands-on initiatives, community outreach, and collaborative research. By engaging students, researchers, and local communities in conservation drives, policy discussions, and sustainable resource management, the University translates environmental awareness into tangible impact for ecosystem preservation.

❖ **Conservation and Sustainable Utilization of the Oceans**

KIIT actively fosters events and collaborations centered on conserving marine and coastal ecosystems, promoting responsible use of ocean resources, and shaping sustainable practices for fisheries, habitat protection, and blue-economy innovations.

- **National Conference on Blue Economy Promotes Sustainable Ocean Utilization**

KIIT Technology Business Incubator (TBI) and BCKIC Foundation jointly organized the National Conference on Blue Economy in 2024, focusing on sustainable and innovative approaches to ocean resource management. The event explored key themes such as marine biomanufacturing, smart aquaculture, coastal and deep-sea mining, and the marine ecosystem value chain, reinforcing the importance of balancing economic growth with marine conservation.

❖ **Food from Aquatic Ecosystems**

Aligning with India's blue growth and food security goals, KIIT develops and supports research-based policies promoting sustainable aquaculture and the responsible use of aquatic bio-resources for nutrition, livelihood, and ecological balance.

- **KIIT and INSA Bhubaneswar Chapter Organize Symposium on 'Translational Research for Society and Sustainability'**

KIIT Deemed to be University (KIIT-DU), in collaboration with the Indian National Science Academy (INSA), Bhubaneswar Chapter, organized a Symposium on "Translational Research for Society and Sustainability" on June 14–15, 2024. The event highlighted the vital role of translational research in driving sustainability, innovation, and societal well-being. Discussions covered a wide spectrum of themes such as renewable energy, sustainable healthcare, agriculture, material sciences, and ethics in sustainability. The event reaffirmed KIIT's commitment to multidisciplinary research, innovation, and sustainability, further strengthening its position as a leader in advancing scientific solutions for a sustainable future.

- **Sustainable Aquatic Food Sourcing Policy – KIIT University**

    KIIT University is committed to procuring and serving aquatic food products in a sustainable and responsible manner. This policy, mandatory for all students, staff, and contracted food service providers, covers every aspect of food service operations, including campus cafeterias and procurement processes. Its primary aim is to ensure that seafood and other aquatic products are sourced from environmentally sustainable and socially responsible practices, thereby safeguarding ecological balance while supporting community welfare.

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    Guiding Principles:

    1. **Ethical Sourcing Guidelines**
        - Procure seafood and aquatic products only from suppliers following sustainable fishing practices.
        - Give priority to certified aquaculture operations and regulated capture fisheries.
        - Prohibit sourcing from destructive methods such as drift-net fishing and other practices causing high bycatch.

    2. **Sustainability Responsibility**
        - Minimize environmental impacts by sourcing eco-certified, low-carbon products and engaging suppliers committed to sustainable, resource-efficient practices.

    3. **Supplier Guidelines**
        - Ensure suppliers adhere to Environmental, Social, and Governance (ESG) standards.
        - Perform regular audits and assessments of supplier practices.
        - Require comprehensive documentation of sustainable harvesting methods and transparent supply chains.

    4. **Local Supply Procurement**
        - Give preference to local suppliers to foster regional economic growth.
        - Support small and medium enterprises in the local fishing community.
        - Minimize transportation-related emissions by emphasizing local procurement.

    5. **Review, Continuous Improvement, and Compliance**
        - Conduct continuous research and monitoring to ensure sustainable aquatic food sourcing, assess environmental impacts, and implement necessary environmental improvements.
        - Engage with the academic community, marine conservation experts, and sustainable fisheries professionals, while maintaining ongoing communication with suppliers to promote best practices and continuous improvements in sustainability.

    KIIT University will review and update this policy annually to ensure sustainable and socially responsible aquatic food procurement. All sourcing must comply with university procedures and regulations, with the Sustainability and Environment Committee overseeing implementation and compliance.

    Dean, QA

    https://kiit.ac.in/sustainable-procurement-policy/

    https://sustainability.kiit.ac.in/wp-content/uploads/2025/10/Aquatic-Food-Sourcing_compressed.pdf

❖ **Maintain Ecosystems and Their Biodiversity**

KIIT undertakes direct conservation and research initiatives to preserve aquatic biodiversity and restore ecosystem health. Through collaborations with agencies like the Chilika Development Authority, it contributes to scientific monitoring, habitat preservation, and pollution control.

• **Studies on Characterization and Bioprospecting of Microbial Communities from Chilika Lake**

The collaboration between KIIT School of Biotechnology and the Chilika Development Authority (CDA) is an initiative to study the microbial communities of the Chilika Lagoon. This research focuses on using microbial data to assess the lagoon's ecological health, monitor pollution levels, and develop effective conservation strategies. By examining the "unseen majority" of microbes, the project aims to understand their role in the lagoon's productivity and how they respond to changes, such as those caused by climate change. This three year study which is funded by ICZMP will do extensive research to understand structural and metabolic diversity of benthic microbial communities their role in biogeochemical cycling carbon, nitrogen, and phosphorus in the Chilika lagoon.

Research team collecting weed samples from shore line invaded with dense patches of P. karka

Dense patches of P. karka in the northern sector of Chilika lagoon

❖ **Technologies Towards Aquatic Ecosystem Damage Prevention**

Harnessing innovation for sustainability, KIIT advances technologies and research aimed at preventing aquatic ecosystem degradation. From environmental monitoring tools to awareness programs, these initiatives integrate science, technology, and community action for ecosystem resilience.

• **NDIEAS-2024: Exploring Human Dimensions of Environmental Sustainability**

The *National Dialogue on Interdisciplinary Environmental Anthropology Symposium (NDIEAS-2024)* focused on human dependence, vulnerability, and resilience in addressing environmental challenges. The discussions explored the role of human anthropology within ecological and political frameworks, emphasizing its importance in shaping sustainable local, national, and global actions. Panelists examined how neoliberalism, globalization, and technological advancement have influenced human-environment relationships, often fostered a false sense of security and contributed to environmental degradation. The symposium also addressed key themes such as green crime, sustainable development, biodiversity, circular economy, ESG, and the role of indigenous communities in environmental governance.
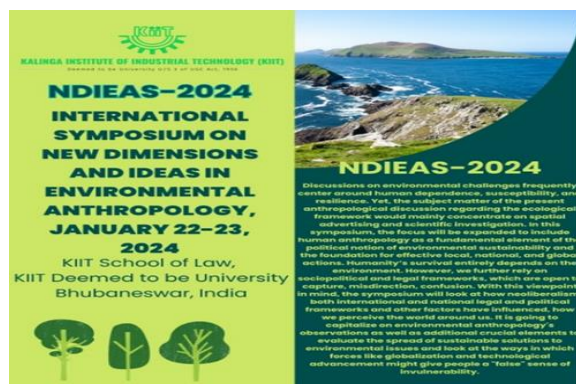
- **Study of the Ecosystems of Chilika Lake**

The Chilika Development Authority (CDA) has initiated a series of long-term research studies sponsored by the World Bank under the Integrated Coastal Zone Management project, with a focus on protecting lake genetic diversity and promoting sustainable use of bio-resources. One of these studies is dedicated to the examination of microbial communities and bioprospecting within the Chilika Lagoon. Collaborating with the KIIT School of Biotechnology, CDA has adopted a systematic approach to culture and characterize bacteria from various sectors of the lake. The study also involves documenting and conserving bacterial resources, studying the spatial and temporal dynamics of bacterial communities in relation to nutrient cycling, and isolating novel bacteria and enzymes with potential applications in biotechnology industries. Additionally, the research includes monitoring pollution and fecal indicator bacteria to better understand the lake's ecological health and support effective conservation efforts.

Stilt at Mangalajodi, Chilika Lake, Odisha, India
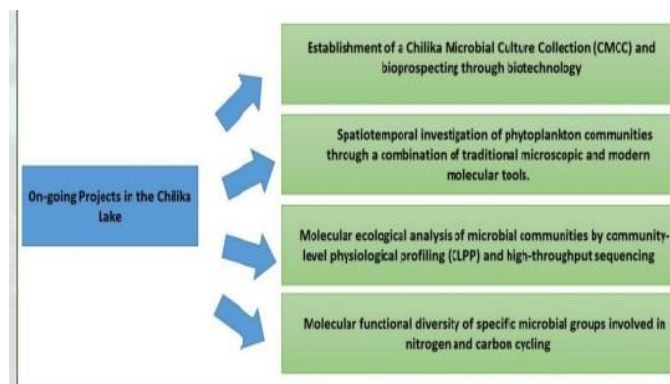
❖ **Community-Oriented Initiatives**

KIIT's commitment to the Sustainable Development Goals (SDGs), including SDG 14, 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.

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

    i. **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
		T O T A L -	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
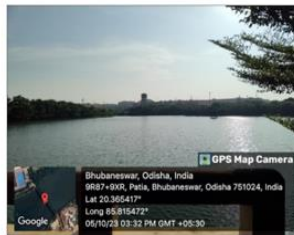
Pond -2 for Water Conservation and Aquaculture

Pond -2 for Water Conservation and Aquaculture

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.

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

🞢 Water Discharge Management Guidelines

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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

14.4 Water-Sensitive Waste Disposal and Community Development Initiatives

- **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.

- ❖ **Action Plan to Reducing Plastic Waste**

KIIT University has revised its waste management strategy in accordance with global best practices with a strong focus on eliminating plastic pollution and promoting a sustainable campus environment.

https://sustainability.kiit.ac.in/wp-content/uploads/2025/10/Action-Framework-for-Plastic-Reduction_compressed.pdf

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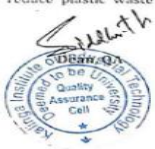DEEMED TO BE UNIVERSITY, BHUBANESWAR-24

Date: 02/01/2024

KIIT University Action Framework for Plastic Reduction

KIIT University has revised its waste management strategy in accordance with global best practices, with a strong focus on eliminating plastic pollution and promoting a sustainable campus environment.

1. Organic Waste Management
- Organic and inorganic wastes are carefully segregated at their source every day and stored separately.
- Organic waste is processed through two anaerobic digesters operating in tandem, converting waste into compost efficiently while ensuring continuous and reliable treatment.
- Dedicated anaerobic digesters also manage food waste generated in hostel facilities, promoting effective waste recycling.

2. Plastic Reduction Strategies
- KIIT conducts regular awareness programs and interactive sessions to educate students, faculty, and staff on the harmful impacts of single-use plastics, encouraging the adoption of sustainable alternatives.
- Cafeterias, Canteens, and Dining Halls are encouraged to adopt stainless steel utensils, reducing plastic waste and fostering a culture of reuse.
- Conferences, Seminars, and Official campus events strictly adhere to green protocols by promoting the use of cloth bags and reusable stainless-steel tumblers.

3. Green Campus Development
- Sculpture Garden, Rose Garden, and several Green Parks have been developed across the KIIT campus, creating well-maintained natural spaces that promote relaxation, enhance biodiversity, and strengthen the campus commitment to KIIT Green.
- KIIT is continuously developing additional green spaces across its campus to enrich biodiversity, promote ecological balance, and foster a healthier, eco-friendly learning environment.

4. Water Purification Infrastructure
- Installed water purifiers on every floor of academic and administrative buildings, in hostels, and near green park areas to provide easy access to safe drinking water while reducing dependence on plastic bottles and minimizing plastic waste.

5. Engagement of National Service Scheme (NSS)
- NSS volunteers actively monitor the implementation of "KIIT Green" initiatives on a daily basis, ensuring sustainable practices are followed and promoting environmental awareness among students and staff.

This action plan reflects KIIT University's strong commitment to sustainability, combining technological solutions, community involvement, and policy-driven approaches to significantly reduce plastic waste and promote eco-conscious behaviour across campus.

❖ **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.

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

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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

14.5   Maintaining a Local Ecosystem

KIIT has been working to preserve and strengthen local aquatic ecosystems through research and collaborative projects that promote biodiversity, community engagement, and sustainable resource use.

❖ **Minimizing Alteration of Aquatic Ecosystems**

- **Biodiversity Conservation and Establishment of Chilika Bioresource Centre for Sustainable Livelihoods and Management of Chilika Lake Wetland Ecosystem:** BCKIC Foundation in association with School of Biotechnology, KIIT DU & CIPET Bhubaneswar aims to produce small-scale kraft paper and corrugated carton to provide alternative livelihoods for the community and contribute to the ecological balance of the Chilika ecosystem. These activities can create value-added products and materials, targeting both the local SC population, while addressing the environmental and economic repercussions of the invasive Phragmites species which can affect the health as well economic status of the SC population in the region.

  This project supports the long-term sustainability of one of India's most important wetland ecosystems, ensuring minimal ecological alteration while balancing conservation and livelihood development.
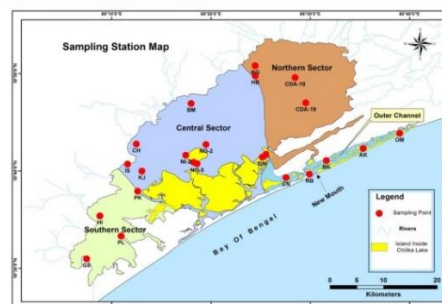
  Focus:
  ✓ Conservation of biodiversity in the Chilika Lake ecosystem
  ✓ Sustainable management of wetland bioresources
  ✓ Promoting community-based livelihoods around the lake
  ✓ Supporting ecosystem monitoring and capacity-building initiatives

Chilika Bioresource Centre

The Chilika Bioresource Centre (CBC) serves as a hub for the dissemination of technological interventions aimed at valorizing Phragmites karka biomass. By harnessing scientific and technical innovations, the CBC will facilitate the creation of value-added products, transforming an invasive species into a valuable resource.

Objectives

⊘ Enrolling and empowering 500 SC community members and women
⊘ Conduct Capacity building programs to equip the SC community
⊘ Research, development, and validation of valorized products
⊘ Handover of the project to an SC-focused cooperative

KPIs

Year 1	Year 2	Year 3
❖ Chilika Bioresource Centre Establishment	❖ Scaling up Beneficiary Participation	❖ Full-Scale Operation
❖ Phragmites Biomass Collection & Drying	❖ Paper Making from Biomass	❖ Advanced Product Testing
❖ Identification of Beneficiaries	❖ Market Linkages and Supply Chain	❖ Replicable model of Phragmites biomass utilization
❖ Capacity Building		

- **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.

❖ **Programs towards Good Aquatic Stewardship Practices**

KIIT promotes hands-on programs that engage students, researchers, and local communities in the conservation and sustainable management of aquatic ecosystems. These initiatives combine education, field action, and advocacy to foster responsible stewardship and long-term ecosystem health.

- **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.

❖ **Watershed Management Strategy**

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 m², can be used to recharge wells, allowing approximately 102,532 m³ 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.

❖ **Strategic Action Plan on Coastal and Aquatic Ecosystem Conservation at KIIT University**

Coastal and aquatic ecosystems are vital for biodiversity and protection but face threats from urbanization, pollution, and climate change. KIIT University's action plan promotes their conservation and sustainable management through research, technology, and community engagement to protect habitats and ensure long-term resilience.

https://sustainability.kiit.ac.in/wp-content/uploads/2025/10/Coastal-and-Aquatic-Ecosystem-Conservation_compressed.pdf

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DEEMED TO BE UNIVERSITY, BHUBANESWAR-24

Date: 02/01/2024

Strategic Action Plan on Coastal and Aquatic Ecosystem Conservation at KIIT University

Coastal and aquatic ecosystems are vital for biodiversity and protection but face threats from urbanization, pollution, and climate change. KIIT University's action plan promotes their conservation and sustainable management through research, technology, and community engagement to protect habitats and ensure long-term resilience.

1. **Identification and Protection of Buffer Zones:** Coastal and aquatic regions will be mapped using Geographic Information Systems (GIS) to identify natural buffer zones, which will be legally protected, regulated, and sustainably managed with community participation. Policies will also be promoted to limit harmful construction, pollution, and unsustainable farming in these sensitive areas.

2. **Research, Education, and Outreach:** Efforts will focus on researching solutions to ecological disruptions in aquatic systems, alongside educational programs and campaigns to enhance public awareness. A multidisciplinary approach integrating technology, community participation, and policy frameworks will drive sustainable ecosystem management.

3. **Floodplain and Levee Conservation:** Floodplains will be mapped to assess risks from human activities, with natural levees and floodplains designated as protected zones to prevent harmful interventions such as drainage or dam construction. Flood risk management will be integrated into planning through zoning, while awareness programs will educate authorities, landowners, and the community on their ecological value.

4. **Integrated Water and Sustainability Strategies:**
   - **Efficient Water Management:** Implement campus-wide guidelines to optimize water use across academic, administrative, residential, and agricultural areas, employing technologies like low-flow fixtures and drip irrigation, supported by regulations and incentives to minimize wastage.
   - **Rainwater Harvesting Initiatives:** Promote and integrate rainwater harvesting systems in campus buildings, particularly in water-scarce areas, with incentives and awareness programs to ensure proper adoption and maintenance.
   - **Sewage and Wastewater Management:** Establish and maintain efficient sewage and wastewater treatment systems to prevent pollution, complemented by green infrastructure such as constructed wetlands to naturally filter contaminants.
   - **Sustainable Development Integration:** Incorporate sustainability principles into campus planning and development, align projects with UN SDGs—especially SDG 14: Life Below Water—mandate Environmental Impact Assessments for aquatic projects, and adopt green building standards and energy-efficient technologies.

5. **Plastic Waste Reduction and Management:** Policies will be implemented to minimize single-use plastics, while waste management practices will prevent contamination of nearby rivers and ecosystems. Biodegradable alternatives will be encouraged, and cleanup drives alongside enhanced recycling infrastructure will be promoted, particularly near aquatic and coastal areas.

6. **Biodiversity Conservation and Mapping:** Regular surveys will document key aquatic species, with a focus on endangered or vulnerable ones, while protected areas will be established to support their natural habitats. Collaboration with conservation organizations and citizen science programs will enhance ecosystem protection and encourage community participation in monitoring biodiversity.


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7. **Mangrove Restoration and Conservation:** Large-scale mangrove restoration projects will be undertaken in degraded areas, supported by public education on their ecological benefits, including shoreline protection and carbon sequestration. Collaboration with NGOs and local communities will guide planting efforts in high-risk zones, with funding secured from government sources to sustain conservation activities.

8. **Coral Reef Monitoring and Conservation:** Regular assessments will track coral health, fish populations, and water quality, using remote sensing and diving surveys for comprehensive monitoring. Community engagement and educational programs will promote reef conservation, while restoration initiatives, including coral farming, will support the recovery of degraded reef areas.

9. **River Management and Restoration:** Rivers will be regularly surveyed for pollution, sedimentation, and flow disruptions, with dredging and removal of obsolete dams or barriers to restore natural channels. Sediment control measures will also be implemented to prevent soil erosion and maintain healthy river ecosystems.

10. **Long-Term Ecosystem Monitoring:** A long-term program will track water quality and species populations through strategically placed monitoring stations. Collected data will guide adaptive management and policy decisions, with findings shared transparently with stakeholders and the public to support informed ecosystem conservation.

11. **Sustainable Fishing and Aquaculture:** Fishing practices will be promoted that minimize bycatch and protect habitats, alongside eco-friendly aquaculture methods to reduce pollution and environmental impact. Regulations such as quotas, size limits, and seasonal bans will support fish population recovery, encouraging responsible and sustainable fisheries management.

12. **Integration of Advanced Technologies:** Artificial intelligence, machine learning, and generative tools will be utilized to enhance ecological research, providing data-driven insights that improve understanding of complex ecosystems and support informed conservation strategies.

This action plan demonstrates a strong commitment to conserving coastal and aquatic ecosystems by integrating scientific research, community participation, policy initiatives, and advanced technological solutions. Its goal is to promote sustainable management practices and ensure the long-term health and resilience of these vital environments.

Dean, QA

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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