

COMPENDIUM ON SUSTAINABLE DEVELOPMENT GOALS 2023

SDG 14 – LIFE BELOW WATER



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ABOUT SDG 14- LIFE BELOW WATER

Sustainable Development Goal 14 (SDG 14) is titled "Life below water" and is one of the 17 Sustainable Development Goals established by the United Nations in 2015. Its primary objective is to "Conserve and sustainably use the oceans, seas, and marine resources for sustainable development." This goal comprises ten targets to be achieved by 2030, each measured by a specific indicator.

The first seven targets focus on outcomes, aiming to reduce marine pollution, protect and restore ecosystems, combat ocean acidification, promote sustainable fishing practices, conserve coastal and marine areas, eliminate subsidies that contribute to overfishing, and maximize economic benefits from the sustainable use of marine resources. The remaining three targets pertain to means of implementation, seeking to enhance scientific knowledge, research, and technology for ocean health, support small-scale fishers, and implement and enforce international sea laws. One of the indicators (14.1.1b) under Goal 14 specifically addresses the reduction of impacts from marine plastic pollution.

Despite efforts, the 2020 report on progress towards the Sustainable Development Goals highlights that the current measures to safeguard vital marine environments, protect small-scale fishers, and invest in ocean science are insufficient to meet the urgent need for the preservation of this vast and delicate resource.



CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS, AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

Activities conducted aligning to Goal 14

CURRICULUM

JSS Academy of Higher Education & Research (JSSAHER) demonstrates its commitment to Sustainable Development Goal (SDG) 14 through thoughtfully designed courses that integrate core concepts and methods from ecological and physical sciences.

The Environmental Studies programs at the BSc and MSc levels provide students with a comprehensive understanding of environmental problem-solving, emphasizing the transnational nature of these issues and their interconnectedness across local to global scales. The courses aim to instill in students a critical reflection on their roles as citizens, consumers, and environmental actors in a complex world. This encourages a sense of responsibility and awareness of the impact of human activities on the environment. Furthermore, JSSAHER's contribution to SDG 14 extends to specialized programs like Marine Pharmacognosy in the B.Pharm and M.Pharm disciplines. This field involves the investigation and identification of medically important plants and animals in the marine environment. As a sub-branch of terrestrial pharmacognosy, Marine Pharmacognosy plays a crucial role in exploring the pharmaceutical potential of marine species, including bacteria, viruses, algae, fungi, and sponges. By delving into the medicinal properties of marine organisms, JSSAHER contributes to the sustainable utilization of marine resources for pharmaceutical research.

In essence, JSSAHER not only imparts knowledge but also cultivates a deep sense of environmental stewardship among its students. Through these courses, the institution actively supports SDG 14 by preparing future professionals who understand the intricate relationships between human activities, marine ecosystems, and the imperative for sustainable practices in the pursuit of knowledge and healthcare advancements. The syllabus contributes to the development of skills, concepts, and tools that can be used to reduce or stop unsustainable practices, and with this ideology, the course of Environment studies was introduced in the first-year bachelor's degree. The subject has core concepts and methods from ecological and physical sciences and their application in environmental problem solving and makes them understand the transnational character of environmental problems and ways of addressing them, including interactions across local to global scales. The outcome which was intended to be achieved was to reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world and also deepen the understanding the utility of environmental source.

Environmental Studies – BSc & MSc

Marine pharmacognosy : B.Pharm &M.Pharm

Marine pharmacognosy is the investigation and identification of medically important plants and animals in the marine environment. It is a sub branch of terrestrial pharmacognosy. Generally the drugs are obtained from the marine species of bacteria, virus, algae, fungi and sponges.

Pharmacognosy and Phytopharmaceuticals

marine pharmacognosy: Marine pharmacognosy is a sub-branch of pharmacognosy, which is mainly concerned with the naturally occurring substances of medicinal value from marine source. It is not a new area for pharmacognosy; even the early civilizations of Greece, Japan, China and India have explored

marine life as a source of drugs. In the western medicine agar, alginic acid, carrageenan, protamine sulphate, spermaceti and cod and halibut liver oils are the established marine medicinal products. topic discussed: 1. marine pharmacognosy 2. marine drugs

ACTIVITIES SUPPORTING SDG 14

Complementing the academic curriculum, the department also encourages to take part in various community activities contributing towards the goal 'Life Below Water'. The below information gives clear insights into the department initiatives towards this goal. JSS Academy of Higher Education and Research (JSSAHER) is dedicated to advancing Sustainable Development Goal (SDG) 14: Life Below Water. Through comprehensive initiatives, JSSAHER actively promotes responsible water conservation, waste management, and ocean protection.

1. **Educational Campaigns and Workshops:** JSSAHER envisions a future where educational campaigns and workshops empower the college community with knowledge about water conservation techniques and the significance of water stewardship.
2. **Student Involvement in Practical Projects:** Students are actively engaged in practical projects, such as maintaining water-efficient gardens and creating awareness posters, fostering a sense of responsibility towards water conservation.
3. **United College Community for Water Conservation:** JSSAHER encourages small yet impactful steps towards water conservation, setting an example for others and inspiring neighboring communities to adopt sustainable practices.
4. **Preserving Oceans and Marine Resources:** The institution emphasizes the importance of oceans, seas, and marine resources, educating the college community about their role in balancing climate, providing food, and supporting livelihoods.
5. **10 Easy Things We Can Do:** JSSAHER promotes 10 easy actions for water conservation at home and on the ocean, including reducing plastic usage, practicing responsible fishing, and volunteering for clean-ups.
6. **Smart Waste Management:** The institution implements smart waste management practices, including bio-waste management, a plastic-free campus initiative, and rainwater harvesting, contributing to SDG 14's objectives.
7. **Future Initiatives:** JSSAHER plans to organize future campaigns and workshops, educating the college community about water conservation techniques and involving students in practical projects.

In essence, JSSAHER's activities align with SDG 14 by fostering a culture of responsible water usage, waste management, and ocean protection, contributing to a sustainable and environmentally conscious campus community.

LAKE WATER CLEANING ACTIVITY

LAKE WATER CLEANING ACTIVITY: PROMOTING SDG 14 AT JSSAHER

In a resounding demonstration of its commitment to Sustainable Development Goal (SDG) 14—concerning the conservation and sustainable use of oceans, seas, and marine resources—JSS Academy of Higher Education & Research (JSSAHER) organized a significant Lake Water Cleaning Activity during the 7-day National Service Scheme (NSS) Camp conducted in March 2023.

Objective:

The primary objective of this initiative was to address the pervasive issue of environmental pollution, specifically targeting a nearby lake. The focus was on removing harmful plastic waste that adversely affects marine life, disrupts ecosystems, and poses a threat to the delicate balance of the aquatic environment.

Student Involvement:

Engaging students actively in this cleanup activity empowered them to be environmental stewards and directly contribute to the well-being of aquatic ecosystems. The NSS camp provided a platform for students to understand the real-world implications of plastic pollution on marine life and the broader ecosystem.

Activities Undertaken:

Plastic Waste Removal: Students meticulously combed the lake area, diligently collecting and removing harmful plastic waste. This proactive step aimed to mitigate the impact of plastic on aquatic organisms, preventing harm to the marine ecosystem.

Lake Cleaning: Beyond plastic removal, the students engaged in a comprehensive cleaning effort to restore the lake to a more favorable environment for aquatic life. Clearing debris and pollutants from the water and surrounding areas contributed to creating a healthier habitat for marine species.

Educational Component:

In addition to the hands-on cleanup activities, JSSAHER integrated an educational component into the initiative. Information sessions and discussions were conducted to enlighten students about the consequences of plastic pollution on marine life and the interconnectedness of terrestrial and aquatic ecosystems.

Sustainable Impact:

By actively participating in the Lake Water Cleaning Activity, JSSAHER students not only contributed to the immediate improvement of the local environment but also imbibed valuable lessons on environmental responsibility. The sustainable impact of this initiative extends beyond the cleanup, fostering a sense of environmental consciousness and inspiring future actions to protect marine ecosystems.

This activity stands as a testament to JSSAHER's holistic approach to education, instilling in students a deep understanding of their role in preserving and safeguarding the environment, aligning with the principles of SDG 14.

During the 7 days NSS Camp conducted in March 2023, students were involved in the cleaning of the nearby lake where harmful plastic that effect the marine life was removed and cleaning was made so that the favorable envirnoment for life below will be maintained.



Guest Talk on Water Pollution during Environment Day Celebrations

Talk on Water Pollution: SDG 14 Advocacy during Environment Day Celebrations at JSSAHER

In a dedicated effort to align with Sustainable Development Goal (SDG) 14, JSS Academy of Higher Education & Research (JSSAHER) organized a Guest Talk on Water Pollution as part of its World Environment Day celebrations in 2023. Dr. Harsha T.S., Assistant Professor at KSOU, was invited as the chief guest to shed light on the critical issue of plastic pollution and its impact on ocean ecosystems.

Objective: The primary objective of this event was to raise awareness about the pressing concern of water pollution, with a specific focus on the detrimental effects of plastic on marine environments. The chosen theme, "Beat Plastic Pollution," resonated with the global efforts to combat the pervasive issue of plastic waste, directly contributing to SDG 14's aim of conserving and sustainably using oceans and marine resources.

Guest Speaker Expertise: Dr. Harsha T.S., an esteemed expert in the field, brought invaluable insights and knowledge to the audience. As an Assistant Professor at KSOU, his expertise added academic rigor to the discussion, ensuring that the information shared was well-researched and pertinent to the challenges posed by water pollution, particularly plastic deposits in ocean water bodies.

Lecture Highlights:

1. **Plastic Impact on Marine Life:** The guest speaker elaborated on the profound impact of plastic pollution on marine life, detailing the consequences for aquatic ecosystems. By addressing the intricate dynamics of plastic deposits in oceans, the lecture aimed to sensitize the audience to the gravity of the issue.
2. **Global Relevance:** Dr. Harsha T.S. contextualized the discussion within the broader global context, emphasizing that plastic pollution is a transboundary challenge that demands collective action. This approach underscored the interconnectedness of environmental issues and the need for a unified response.

Theme Alignment: The talk was strategically aligned with the theme of "Beat Plastic Pollution," chosen for the World Environment Day celebrations. This thematic focus not only facilitated a targeted discussion on a specific aspect of water pollution but also encouraged a proactive stance in addressing the plastic crisis.

Educational Impact: The lecture not only served as a platform for disseminating crucial information but also provided an educational experience for the audience. Attendees gained insights into the complexities of water pollution and the role individuals and communities play in mitigating its effects.

SDG 14 Advocacy: By organizing this Guest Talk, JSSAHER actively contributed to SDG 14 by fostering awareness, understanding, and dialogue around the environmental challenges related to water pollution, particularly plastic pollution in oceans. The event exemplified the institution's commitment to sustainable practices and holistic education.

In conclusion, the Guest Talk on Water Pollution during the World Environment Day celebrations at JSSAHER not only addressed a critical global concern but also empowered the audience with knowledge and a sense of responsibility towards achieving SDG 14.

Dr. Harsha T.S., Assistant Professor, KSOU was invited as a chief guest for the World Environment Day 2023. He had delivered a special lecture on the effect of Plastic on the Environment and particularly mentioned about the plastic deposits in ocean water bodies, its impact on the marine life. This lecture was given in accordance with the theme of celebrations “Beat Plastic Pollution”.



INTERNATIONAL WORKSHOP ON COMBATING PLASTIC POLLUTION IN TERRESTRIAL ENVIRONMENT: A JOINT INITIATIVE BY JSSAHER AND NAM S&T CENTRE IN SUPPORT OF SDG 14

JSS Academy of Higher Education and Research (JSSAHER), in collaboration with the Centre for Science & Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre) and the Scientific Committee on Problems of the Environment (SCOPE), played a pivotal role in advancing the objectives of Sustainable Development Goal (SDG) 14—concerning the conservation and sustainable use of oceans, seas, and marine resources. This commitment was evident through the organization of the International Workshop on 'Combating Plastic Pollution in Terrestrial Environment,' held on March 14-15, 2023, at JSSAHER in Mysore, India.

Context and UN's Commitment: Recognizing the pressing global concern of plastic pollution, the United Nations has spearheaded initiatives to reduce plastic release into the environment. The focus areas include addressing microplastics, marine litter, and single-use plastic pollution. This aligns with SDG 14, which emphasizes the need to conserve and sustainably use marine resources for sustainable development. The UN advocates a fundamental shift in the approach to designing, producing, and using plastic products to effectively combat plastic pollution.

Collaborative Workshop Initiative: The collaborative effort between NAM S&T Centre, JSSAHER, and SCOPE resulted in the organization of the International Workshop on Combating Plastic Pollution in Terrestrial Environment. The workshop served as a platform for experts, researchers, and stakeholders to converge and deliberate on crucial issues related to terrestrial plastic waste contamination.

Objectives of the Workshop:

1. **Identification of Plastic Waste Release Mechanisms:** The primary objective was to identify significant mechanisms contributing to the release of plastic waste into the terrestrial environment, affecting soil, atmosphere, and freshwater ecosystems.
2. **Sharing Best Practices:** The workshop aimed to facilitate the exchange of experiences and best practices in the effective management of terrestrial plastic waste. Participants discussed successful strategies for mitigating the impact of plastic pollution on terrestrial ecosystems.
3. **Comprehensive Coverage:** The workshop covered a spectrum of topics, including the origins, dynamics, dangers, and potential remedies for reducing the release of plastic wastes into the terrestrial ecosystem. This comprehensive approach ensured a holistic understanding of the challenges and solutions associated with terrestrial plastic pollution.

Global Perspectives and Collaboration: By hosting an international workshop, JSSAHER actively contributed to the global discourse on plastic pollution. The collaboration with NAM S&T Centre and

SCOPE allowed for the integration of diverse perspectives and expertise, fostering a holistic approach to addressing this critical environmental issue.

Outcomes and Impact: The outcomes of the workshop included enhanced awareness, knowledge dissemination, and the establishment of a network of experts committed to combating terrestrial plastic pollution. By addressing the complexities of plastic contamination in terrestrial ecosystems, the workshop laid the groundwork for informed decision-making and sustainable practices.

In summary, the International Workshop on Combating Plastic Pollution in Terrestrial Environment, organized by JSSAHER in collaboration with NAM S&T Centre and SCOPE, exemplifies the institution's dedication to supporting SDG 14. This initiative not only contributes to global efforts to combat plastic pollution but also underscores the importance of collaborative, interdisciplinary approaches in addressing complex environmental challenges.



With mounting evidence that plastic waste is rising and the accumulation of plastics in our natural environment is getting worse, the plastic pollution dilemma has recently taken center stage in the discussions of global policy. As a result, presently more attempts are being made to identify the international frameworks and initiatives that could aid not just in containing this crisis but also in repairing some of the damages caused.

The United Nations (UN) has committed to reducing the amount of plastic that is released into the environment through several projects that focus on microplastics, marine litter, and single-use plastic pollution. Several Sustainable Development Goals address the issue of plastics because it aims to conserve and sustainably use marine resources for sustainable development. The UN stated that to beat plastic pollution, we must entirely rethink our approach to designing, producing, and using plastic

products. Therefore, a deeper knowledge of the processes causing the environmental release of plastic in the terrestrial environment is necessary to address the problems of global plastic contamination.

In this context, the Centre for Science & Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre), New Delhi, India, in partnership with the JSS Academy of Higher Education and Research (JSS AHER), Mysuru, Karnataka, India and the Scientific Committee on Problems of the Environment (SCOPE), Amstelveen, the Netherlands organized an International Workshop on *'Combating Plastic Pollution in Terrestrial Environment'* during March 14-15, 2023. The Workshop was hosted by JSS AHER in Mysore, India.

The primary objective of this workshop was to identify the important plastic waste release mechanisms that significantly contaminate the soil, atmosphere, and freshwater ecosystems and to share experiences and best practices on effective terrestrial plastic waste management. This workshop also covered many issues including origins, dynamics, dangers, and viable remedies for reducing the release of plastic wastes into the terrestrial ecosystem.

The two-day program was organized in different technical sessions to share knowledge and best practices adopted by various NAM and other developing countries to develop synergy, exchange knowledge and ideas on plastic pollution and provide solutions to combat the same with a broader perspective with a special focus on the developing countries. The Workshop aimed to bring together experts, policymakers, and city-level authorities from municipalities, the State Pollution Control Board/Pollution Control Committee, the Department of Environment, the Department of Urban Development, research and academic organizations from the NAM and other developing countries to combat plastic pollution in the terrestrial environment. The Workshop was attended by 150 scientists, researchers, academicians, policymakers, and other professionals from 10 countries namely, Egypt, Indonesia, Malaysia, Mauritius, Myanmar, Nepal, Norway, South Africa, Sri Lanka, and the host country India.



STUDENT CONTRIBUTION TO COMBATING PLASTIC POLLUTION: EMPOWERING SDG 14

In a noteworthy alignment with Sustainable Development Goal (SDG) 14, JSS Academy of Higher Education and Research (JSSAHER) celebrated the academic achievements and proactive engagement of Ms. Afrah Kounain P., a student in the Department of Biotechnology and Bioinformatics. Ms. Afrah Kounain P. received recognition for her outstanding contribution at the International Workshop on Combating Plastic Pollution in Terrestrial Environment. The workshop, jointly organized by the Centre for Science and Technology of Non-Aligned and Other Developing Countries (NAM S&T Centre), JSSAHER, and the Scientific Committee on the Problems of the Environment (SCOPE), showcased the institution's commitment to addressing global environmental challenges.

Afrah Kounain P.'s Paper Presentation: Ms. Afrah Kounain P. presented a paper titled "A Sustainable Approach - Tackle Environmental Threats" during the international workshop. Her research and insights were instrumental in shedding light on sustainable approaches to mitigating environmental threats, particularly focusing on the pervasive issue of plastic pollution in terrestrial environments.

Key Details of the Paper:

1. Title: "A Sustainable Approach - Tackle Environmental Threats"
2. Focus: The paper centered around adopting sustainable approaches to combat environmental threats, with a specific emphasis on tackling the challenges posed by plastic pollution in terrestrial environments.

International Workshop Context: The International Workshop on Combating Plastic Pollution in Terrestrial Environment provided a platform for experts, researchers, and students like Ms. Afrah Kounain P. to share knowledge, insights, and potential solutions related to plastic pollution. The collaboration between JSSAHER and international organizations showcased a collective effort to address the complexities of this global environmental issue.

Significance of Student Participation: Ms. Afrah Kounain P.'s active participation in presenting a paper at the international workshop highlights the institution's commitment to fostering a culture of research and environmental consciousness among its students. Her contribution adds a valuable dimension to the global dialogue on combating plastic pollution and underscores the role of the younger generation in driving sustainable change.

Impact and Recognition: By receiving a certificate for her paper presentation, Ms. Afrah Kounain P. not only demonstrated academic excellence but also showcased her dedication to advancing the goals of SDG 14. The recognition bestowed upon her serves as a testament to JSSAHER's commitment to empowering students to actively contribute to addressing pressing global challenges.

In essence, Ms. Afrah Kounain P.'s achievement is not just an individual accolade but a representation of JSSAHER's broader mission to instill a sense of responsibility, research acumen, and environmental stewardship in its students, aligning with the principles of SDG 14.

Ms. Afrah Kounain P. student of BSc Biotechnology/Bioinformatics receiving the certificate.

Ms. Afrah Kounain P., a student Department of Biotechnology and Bioinformatics presented a paper entitled "A Sustainable Approach - Tackle Environmental Threats" at the International workshop on combating plastic pollution in Terrestrial environment jointly organized by the Centre for Science and Technology of the nonaligned and other Developing Countries (NAM S & T Centre), New Delhi, India, JSS Academy of Higher Education and Research, Mysore, Scientific Committee on the problems of the environmental (SCOPE), Amstelveen, the Netherlands.

FACULTY ENGAGEMENT IN COMBATING PLASTIC POLLUTION: DR. SUNITA C MESTA'S POSTER PRESENTATION AT JSSAHER

In a concerted effort to contribute to Sustainable Development Goal (SDG) 14, JSS Academy of Higher Education and Research (JSSAHER) facilitated the active participation of its esteemed faculty member, Dr. Sunita C Mesta, from the Department of Microbiology, in the International Workshop on 'Combating Plastic Pollution in Terrestrial Environment.' The workshop, organized by the Centre for Science and Technology of the Non-Aligned and Other Developing Countries (NAM S&T Centre) in collaboration with JSSAHER, showcased the institution's commitment to addressing the multifaceted challenges of plastic pollution. Dr. Sunita C Mesta's Poster Presentation: During the workshop held on March 14-15, 2023, Dr. Sunita C Mesta presented a poster titled "Marine Actinomycetes as a Potential Source of Biodegradation of Plastics." This research contribution aimed to explore sustainable solutions for plastic waste management, aligning with the workshop's overarching theme.

Key Focus Areas of the Poster:

1. Title: "Marine Actinomycetes as a Potential Source of Biodegradation of Plastics"
2. Objective: The poster highlighted the potential of marine actinomycetes in biodegrading plastics, offering a sustainable approach to address the environmental challenge of plastic pollution.

Context of the International Workshop: The International Workshop on 'Combating Plastic Pollution in Terrestrial Environment' provided a platform for researchers, experts, and faculty members like Dr. Sunita C Mesta to share their research findings, insights, and potential solutions related to plastic pollution. The collaborative effort between JSSAHER and international organizations emphasized the institution's dedication to addressing global environmental concerns.

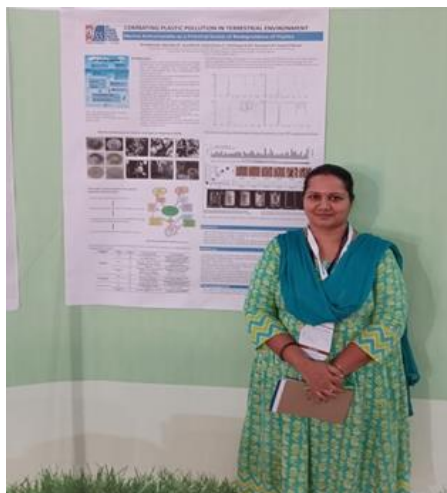
Significance of Faculty Participation: Dr. Sunita C Mesta's active involvement in presenting research on marine actinomycetes showcased the academic rigor and research focus within JSSAHER's faculty. Her contribution exemplifies the institution's commitment to advancing knowledge and exploring sustainable solutions to real-world challenges.

Impact and Knowledge Dissemination: The poster presentation not only contributed valuable insights to the scientific community but also facilitated knowledge dissemination on the potential role of marine actinomycetes in biodegrading plastics. This aligns with the broader goal of SDG 14, emphasizing the conservation and sustainable use of oceans and marine resources.

Recognition and Collaboration: By participating in an international forum, Dr. Sunita C Mesta not only brought recognition to her research but also fostered collaboration between JSSAHER and global entities working towards combatting plastic pollution. This collaboration enhances the institution's global standing and reinforces its commitment to environmental sustainability.

Dr. Sunita C Mesta's poster presentation stands as a testament to JSSAHER's commitment to SDG 14, showcasing active engagement, research excellence, and a holistic approach to addressing environmental challenges. The institution's support for faculty participation in such initiatives contributes to a culture of research-driven solutions and sustainable practices.

Dr. Sunita C Mesta, Faculty Department of Microbiology presented a poster entitled “Marine actinomycetes as a potential source of Biodegradation of Plastics” presented at International Workshop on ‘Combating Plastic Pollution In Terrestrial Environment’ organized by NAM S & T Centre, New Delhi in partnership with JSS Academy of Higher Education and Research, Mysuru during March 14-15, 2023.



Dr. Sunita C Mesta, Faculty Department of Microbiology presented poster at the conference.

Publications related to SDG 14

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| 1. | Anusha Hosakote Shankara, Jijoe Samuel Prabagar, Tenzin Thinley, Sneha Yadav, Anilkumar Kotermane Mallikarjunappa, Diganta Bhusan Das, Jenkins David, Wantala Kitirote, Shivaraju HP, Catalysis interfaced multifunctional membranes for sustainable treatment of water and wastewater, Environmental Nanotechnology, Monitoring & Management 19 (2023) 100773, https://doi.org/10.1016/j.enmm.2022.100773 |
| 2 | A Detailed Analysis and Characterization of Microplastics in Freshwater Ecosystem: A Case Study on Tungabhadra River Water Around Siruguppa, Bellary District. |

Students Projects related to SDG 14

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| 1 | Impact of Ambient PM2.5 Concentration on Multiple Non-Communicable Disease Among Women of Reproductive Age in India |
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OUR INITIATIVES FOR LIFE BELOW WATER (SDG 14)

WATER CONSERVATION INITIATIVE AT JSSAHER: NURTURING SDG 14 THROUGH SUSTAINABLE PRACTICES

Recognizing the critical importance of water conservation as a pivotal aspect of Sustainable Development Goal (SDG) 14, JSS Academy of Higher Education and Research (JSSAHER) has undertaken a proactive and responsible initiative to conserve water resources on its campus. As a fundamental natural resource, water sustains life and serves as the lifeblood for various activities, making its preservation essential for a sustainable environment.

Key Components of JSSAHER's Water Conservation Initiative:

Awareness Campaigns:

To instill a sense of responsibility among the college community, JSSAHER has prioritized awareness campaigns. Students, faculty, and staff are educated about the importance of utilizing water wisely. Simple yet impactful practices such as tightly turning off taps, promptly fixing leaks, and reporting instances of water wastage have been emphasized. These practices collectively contribute to a significant reduction in water consumption.

Sustainable Campus Practices:

JSSAHER is committed to implementing sustainable practices that specifically address water conservation. By adopting eco-friendly measures, the college endeavors to minimize pollution in water bodies. These practices aim to create a campus environment where water resources are utilized **judiciously, aligning with the principles of SDG 14.**

Integration into Curriculum:

As a pharmacy college, JSSAHER recognizes the unique opportunity to integrate marine conservation and sustainability topics into its curriculum. By incorporating these themes into academic discourse, the institution not only educates future professionals about the significance of water conservation but also nurtures a mindset that values the interdependence of human well-being and water resources.

Awareness Campaigns and Events:

JSSAHER actively organizes awareness campaigns and events to promote water conservation, address plastic pollution, and underscore the importance of water bodies for human well-being. These initiatives serve as platforms for dialogue, engagement, and collective action toward nurturing a culture of **environmental stewardship on campus.**

Impact and Contribution to SDG 14:

JSSAHER's comprehensive approach to water conservation goes beyond individual actions; it encompasses a collective commitment to fostering a sustainable and responsible campus environment. By actively engaging in initiatives aligned with SDG 14, the college plays a vital role in nurturing a generation of environmentally conscious individuals who recognize the interconnectedness of human well-being and the health of water ecosystems.

In essence, JSSAHER's water conservation initiative reflects a holistic commitment to sustainability, education, and community engagement, echoing the institution's dedication to making a meaningful contribution to SDG 14 and creating a more environmentally resilient future. Water conservation in college is a crucial and responsible initiative that every member of the college community should actively participate in. As a precious natural resource, water plays a vital role in sustaining life and supporting various activities on campus. By implementing effective water conservation measures, we can contribute to the preservation of this invaluable resource and create a more sustainable environment.

One of the key steps towards water conservation in college is raising awareness among students, faculty, and staff about the importance of using water wisely. Simple practices like turning off taps tightly, fixing leaks promptly, and reporting any water wastage can significantly reduce water consumption.

As a pharmacy college, few of the major indicators that is implemented to contribute towards SDG 14 are:

- Sustainable Campus Practices to end pollution in water
- Integrate marine conservation and sustainability topics into the curriculum
- Organize awareness campaigns and events to promote on water conservation, plastic pollution, and the importance of water bodies for human well-being

Rain Water Harvesting Implementation

JSSAHER's Commitment to Water Conservation: Upholding SDG 14 in a Hill Station Environment

JSS Academy of Higher Education and Research (JSSAHER), nestled in a hill station, acknowledges the significance of contributing to Sustainable Development Goal (SDG) 14, even in a landlocked setting. While life below water may not be directly observable, the institution is dedicated to water conservation through various initiatives.

Water Testing and Quality Assurance: In the Department of Pharmaceutical Biotechnology, JSSAHER conducts regular water testing as a proactive measure to ensure water quality. Rigorous testing protocols are followed, and reports are generated to assess the purity of the water sources. If any samples are found to be contaminated, immediate and necessary actions are taken to rectify the situation. This systematic approach reflects the institution's commitment to maintaining water quality standards and safeguarding the environment.

RO Water Facilities Across the Campus: Understanding the importance of providing clean and safe water, JSSAHER has installed Reverse Osmosis (RO) water facilities in both academic and residential areas, including hostels. These facilities ensure that students, faculty, and staff have access to purified and potable water. This not only contributes to the well-being of the college community but also aligns with the broader goal of water conservation.

Key Elements of JSSAHER's Water Conservation Practices:

1. **Water Testing and Quality Control:**
 - Regular water testing in the Department of Pharmaceutical Biotechnology.
 - Immediate actions based on test results to address water contamination.
2. **RO Water Facilities:**
 - Installation of RO water facilities in academic and residential areas.
 - Provision of purified and safe drinking water for the college community.

Impact and Relevance in a Hill Station Setting: While JSSAHER may not have direct interactions with life below water, the emphasis on water conservation is paramount. The institution's initiatives ensure that water resources are used responsibly and that the local environment remains unaffected by contamination. The proactive approach to water testing and the provision of RO water facilities contribute to a sustainable and eco-conscious campus.

Connection to SDG 14: JSSAHER's efforts in water conservation align with SDG 14 by emphasizing the importance of maintaining water quality and ensuring access to clean water. Even in a hill station environment, the institution recognizes its role in contributing to the broader global agenda of sustainable water management.

In essence, JSSAHER's commitment to water conservation, reflected in systematic testing and infrastructure development, exemplifies the institution's dedication to environmental stewardship and aligns with the principles of SDG 14, even in a unique hill station setting.

Additionally, the college harvests rainwater, which is be utilized for non-potable purposes such as irrigation and flushing toilets.



Being so far in Land and on hill station, Life below water is restricted. However, the college contributes to the conservation of water at every possible way. The regular water testing is performed in Department of Pharmaceutical Biotechnology of our college and the report is generated and based on that the necessary action is taken if the samples are found contaminated.

RO water facility in the academic and residential areas along with in the premises of hostels is available.



Installing water-efficient fixtures, such as low-flow faucets and toilets, can also contribute to water savings on a daily basis. Low water release taps are installed in the Campus Hostel facilities.

PLASTIC WASTE MANAGEMENT

SMART WASTE MANAGEMENT FOR A SUSTAINABLE CAMPUS: JSSAHER'S CONTRIBUTION TO SDG 14

Recognizing the pivotal role waste management plays in environmental sustainability, JSS Academy of Higher Education and Research (JSSAHER) has implemented strategic initiatives aimed at managing plastic waste and promoting eco-friendly practices. This concerted effort aligns with the principles of Sustainable Development Goal (SDG) 14, emphasizing responsible actions for life below water.

Key Initiatives in Plastic Waste Management:

1. Bio-Waste Management:

- JSSAHER has established a robust bio-waste management system to handle organic waste efficiently. This initiative ensures that biodegradable waste is processed in an environmentally friendly manner, reducing the overall environmental impact.

2. Plastic-Free Campus Initiative:

- A noteworthy step towards sustainable practices is the institution's commitment to a plastic-free campus. This includes initiatives to eliminate the use of plastic bottles, contributing to a reduction in plastic waste generation. Such measures actively contribute to minimizing the impact of plastic pollution on marine ecosystems.

3. Rainwater Harvesting Management:

- To address water waste and promote water conservation, JSSAHER has implemented rainwater harvesting management systems. These initiatives aim to harness rainwater for various purposes, mitigating the need for excessive water consumption and aligning with SDG 14's focus on sustainable water use.

4. Paper Shredder for Waste Reduction:

- In office spaces, the use of paper shredders is a practical solution to reduce the storage of waste papers. By promoting the efficient disposal and recycling of paper waste, JSSAHER contributes to minimizing its environmental footprint and fostering a culture of waste reduction.

5. Ventilation Systems for Chemical Reactions:

- Mechanical chimneys, fume hoods, and bio-safety cabinets are integral components of JSSAHER's infrastructure. These systems play a crucial role in ensuring the safe and responsible management of chemical reactions, preventing harmful emissions and contributing to a safe and sustainable laboratory environment.

Impact on SDG 14: JSSAHER's comprehensive approach to waste management not only reflects a commitment to environmental responsibility but directly contributes to SDG 14. By actively addressing plastic waste, implementing rainwater harvesting, and adopting measures for responsible chemical

management, the institution aligns with the goal of protecting life below water and fostering sustainable practices.

JSSAHER's initiatives in waste management showcase a holistic commitment to environmental stewardship. By integrating sustainable practices into everyday operations, the institution sets an example for responsible waste management and emphasizes the importance of these actions in achieving SDG 14's objectives.

Managing the waste in a smarter ways is the most important aspect in any organization. For this the existing management for the waste we have Bio-waste management, initiative of plastic free campus with no plastic bottles, Rain Water harvesting management for the reduction of water waste to save more water. Paper shredder in office to cut short the storage of waste papers. Mechanical Chimneys, Fume hoods for chemical reactions and Bio-safety cabinets (Class II type A/B3).



Furthermore, in the future educational campaigns and workshops can be organized to educate the college community about water conservation techniques and the significance of water stewardship. Involving students in practical projects, such as maintaining a water-efficient garden or creating awareness posters, can foster a sense of responsibility towards water conservation.

By coming together as a united college community, we can take small yet impactful steps towards water conservation. Implementing these measures not only helps us become more environmentally conscious but also sets an example for others to follow. Ultimately, our collective efforts in water conservation will contribute to a sustainable future and a greener campus for generations to come.

Life below water is defined as Conserve and sustainably uses the oceans, seas and marine resources for sustainable development. A large portion of our planets is covered by ocean and oceans play key role in supporting life on earth. It encompasses over 70% of the Earth's surface and holds the top position as the most bio-diverse ecosystem in the biosphere. It plays important role in balancing the climate, provides food and job.

Here are the 10 easy things that we execute to save our oceans which can be done at home, across town and on the ocean.

At home

- Use less water so that excess wastewater will not run on to the ocean
- Reduce non-toxic chemicals and dispose them in a proper way
- Recycle the wet waste as a fertilizer and cut down what we throw across town
- Avoid using plastic covers, carry go-green bags or reusable bags and shop prudently and try to pick sustainable seafood.
- Reduce Vehicle Pollution by taking walk to near places, using bicycle, shifting for eco-friendly vehicles like electric car and scooters, solar powered vehicles, carpool or taking local transportation.
- Consume Less Energy by choosing energy efficient light bulbs and don't overset your thermostat, switch off the lights and fans when not in use.

On the ocean

- Fish Responsibly: follow "catch and release" practices and keep more fish alive end overfishing, illegal, unreported, and unregulated fishing, and destructive fishing practices and refrain from introducing new subsidies.
- Practice Safe Boating Anchor in sandy areas far from coral and sea grasses. Adhere to "no wake" zones.
- Respect Habitat: Healthy habitat and survival go hand in hand. Treat with care. Do not disturb the Eco-system.
- Last but not the least volunteer for clean-ups at the beach and in your community. You can get involved in protecting your watershed too!

EMPOWERING WATER CONSERVATION AND OCEAN PROTECTION AT JSSAHER: A VISION FOR A GREENER TOMORROW

JSS Academy of Higher Education and Research (JSSAHER) envisions a future where the college community actively participates in educational campaigns and workshops to amplify awareness about water conservation techniques and the crucial role of water stewardship. This initiative aligns with Sustainable Development Goal (SDG) 14, focusing on conserving and sustainably using oceans, seas, and marine resources for sustainable development.

Future Educational Campaigns:

1. **Water Conservation Techniques:** Educational campaigns will impart knowledge about effective water conservation techniques. The college community will be educated on minimizing water wastage and adopting practices that contribute to the sustainable use of water resources.
2. **Student Involvement in Practical Projects:** Students will be actively engaged in practical projects to cultivate a sense of responsibility towards water conservation. Projects may include maintaining water-efficient gardens, creating awareness posters, and participating in initiatives that demonstrate the impact of small actions on water sustainability.

United College Community for Water Conservation:

1. **Small yet Impactful Steps:** The college community is encouraged to take small but impactful steps towards water conservation. Practices such as using less water, reducing non-toxic chemicals, recycling wet waste, and avoiding single-use plastic contribute to a collective effort in creating a water-conscious environment.
2. **Setting an Example for Others:** By implementing these measures, JSSAHER sets an example for others to follow. The institution aims to inspire neighboring communities and institutions to adopt sustainable practices for water conservation and environmental stewardship.

Life Below Water: Preserving Oceans and Marine Resources:

1. **Understanding the Importance of Oceans:** Emphasizing the significance of oceans as a diverse ecosystem, balancing climate, providing food, and supporting livelihoods, JSSAHER educates the college community about the importance of preserving life below water.

10 Easy Things We Can Do: At Home and On the Ocean:

At Home:

1. **Water Conservation:** Use less water to prevent excess wastewater from reaching the ocean.
2. **Reduce Non-Toxic Chemicals:** Minimize the use of non-toxic chemicals and dispose of them properly.

3. **Recycle Wet Waste:** Recycle wet waste as fertilizer, reducing the overall waste thrown across town.
4. **Avoid Plastic Covers:** Choose reusable bags and shop wisely to reduce plastic usage.
5. **Reduce Vehicle Pollution:** Opt for eco-friendly transportation options and reduce vehicle pollution.
6. **Consume Less Energy:** Choose energy-efficient light bulbs and practice energy conservation.

On the Ocean:

7. **Fish Responsibly:** Practice "catch and release" to prevent overfishing and support sustainable seafood choices.
8. **Safe Boating Practices:** Anchor responsibly, away from coral and sea grasses, and adhere to "no wake" zones.
9. **Respect Habitat:** Treat the ocean habitat with care and refrain from disturbing the ecosystem.
10. **Volunteer for Clean-Ups:** Actively participate in beach clean-ups, community clean-ups, and contribute to protecting watersheds.

JSSAHER's proactive approach to future educational campaigns, student involvement in practical projects, and the promotion of sustainable practices at home and on the ocean reflects a commitment to creating a water-conscious and environmentally responsible college community. By fostering awareness, inspiring action, and setting an example for others, JSSAHER contributes to a sustainable future and a greener campus for generations to come.

