Criterion VII

Institutional Values and Best Practices

RAJAGIRI COLLEGE OF MANAGEMENT AND APPLIED SCIENCES

RAJAGIRI VALLEY P.O, KAKKANAD, KERALA 682039

An ISO 9001 : 2015 Certified Institution

Affiliated to Mahatma Gandhi University, Kottayam and Approved by AICTE

7.1 **Institutional Values and Social Responsibilities**

7.1.2 Report on the Management of the Various Types of Degradable and Non-Degradable Waste Management

2019-2024

Submitted to

NAAC

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7.1.2 Report on the Management of the Various Types of Degradable and Non-degradable Waste Management

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Report on the Waste Management Facilities of Rajagiri College

Rajagiri College has undertaken a remarkable journey towards sustainable waste management, particularly in handling bio-degradable waste. The innovative and unique bio-degradable waste management facilities that the College has implemented, showcases a harmonious blend of technology, community engagement, and environmental responsibility.

1.Waste Management Facilities

In an era where environmental consciousness is vital, Rajagiri College has set itself apart by establishing cutting-edge bio-degradable waste management facilities. The college recognizes the urgent need to address the growing environmental concerns associated with waste, and hence, has adopted an integrated approach that combines technological advancements with community participation incorporating dedicated collection systems for specific waste streams.

Waste materials are segregated into degradable, biodegradable and non-biodegradable categories, thereby reducing the amount that ends up in landfills. Biodegradable waste, including kitchen scraps and other organic material, is transformed into valuable compost, which is used to enrich the college gardens and nourish the soil. Non-degradable categories of waste like paper, plastic and e-waste are handed over to external agencies for recycling.

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2. Waste Segregation at Source

One of the cornerstones of the institution's waste management strategy is Waste segregation at source. This is facilitated by the deployment of color-coded waste bins strategically placed throughout the campus. The color scheme provides clear visual cues for students, faculty and staff to properly categorize their waste. Such initial sorting at the point of disposal, streamlines the waste management processes and increases the efficiency of recycling and composting efforts. In addition to this, the college conducts regular workshops and awareness programs on responsible waste management, empowering students and staff to make conscious choices in their daily lives.

Colour coded Dustbins

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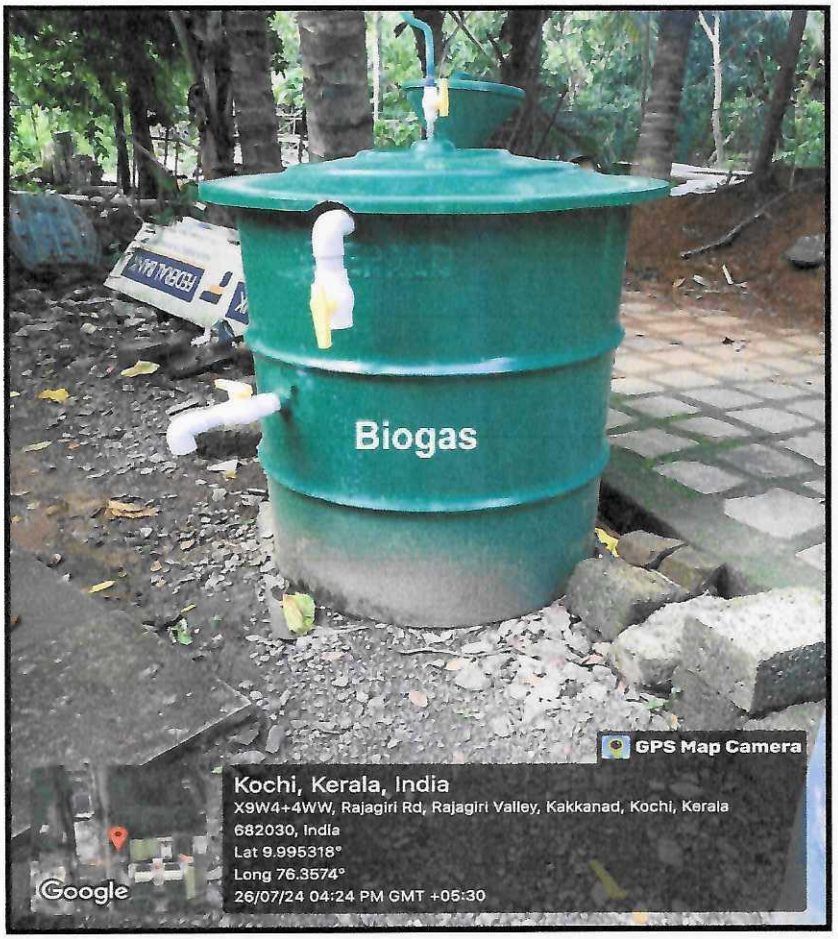
3. Biodegradable Waste Management

- **Biogas Plant for Food Waste**

A larger part of the waste generated on the campus is food waste. For food waste management, a significant portion is diverted to the college biogas plant which has a capacity of 3500 kcal/m^3 where it is converted into a clean and renewable energy source. The remaining food scraps are taken to a compost facility shared with the sister organizations of the institution.

Biogas Plant



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- **Animal Ark for Food Waste**

The College has integrated a novel approach to waste management by establishing an on-campus animal unit which serves as a dual-purpose resource, addressing both waste management and environmental education. By providing a sustainable outlet for organic waste, through a symbiotic relationship, the unit contributes significantly to waste reduction and promotes a circular economy. The animals, primarily rabbits and dogs, consume biodegradable waste, transforming it into valuable organic manure. This process not only diverts waste from landfills but also enriches the soil, fostering a healthier campus ecosystem.

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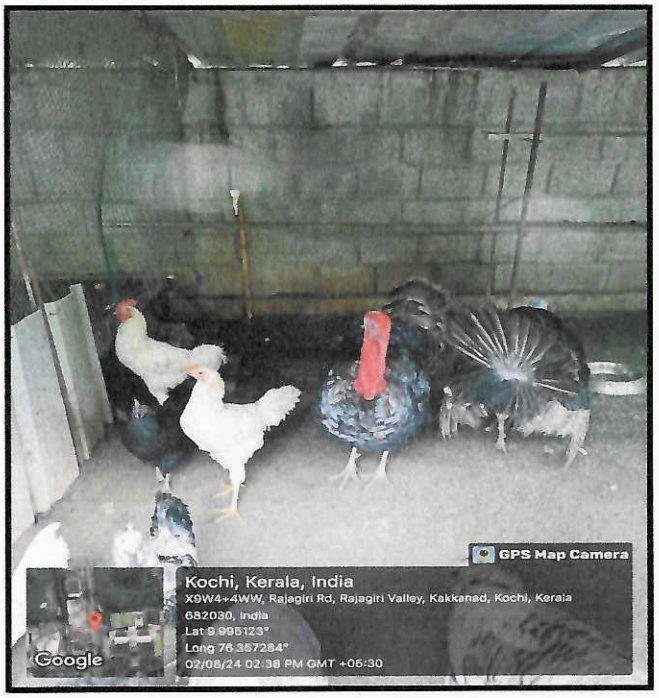
- **Poultry Farming**

Another sustainable solution to organic waste management the College has adopted is Poultry Farming. The farm houses a diverse avian population including different kinds of ducks, hens and turkeys, which efficiently consume biodegradable waste generated on campus. The poultry waste, rich in nutrients, is further processed into organic compost, enhancing soil fertility and promoting sustainable agriculture within the campus premises.



- **Vermicompost Pit**

Similarly, the college has a vermicompost for collecting dry leaves, where it can be composted to create nutrient-rich fertilizer for the campus gardens. The strategy aims to minimize landfill waste, promote recycling and composting to contribute to a more sustainable campus environment. The unit has a capacity of 15 kgs.

Vermicompost Unit

An approximate 39.12 kg degradable waste is generated per day; close to 8606 kgs a year with a carbon footprint of 5.42 tCO2e per kg as per the statistics of 2023-24.

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- **Organic Farming**

Organic farming practices make use of the rich compost produced from the vermi-composting unit. Students are actively involved in every stage of the farming process, from seed selection to harvesting. The nutrient-laden vermicompost serves as a natural fertilizer, enhancing soil fertility and promoting the growth of healthy, organic produce. Apart from delivering a hands-on experience for students with valuable agricultural knowledge, it also plants a deep appreciation for sustainable living. The HEI's organic farm has become a living laboratory, demonstrating the potential of eco-friendly practices in producing nutritious and chemical-free food.

Organic Farming Using Vermicompost

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- **Pipe Compost**

The method of pipe compost involves utilizing PVC pipes as vertical composting chambers. Organic waste, such as food scraps and garden trimmings, is layered within the pipes along with soil and microorganisms. The enclosed system accelerates the composting process while minimizing odor and pest issues. The generated compost can be used to enrich the campus green spaces, promoting sustainable gardening and agriculture.

Pipe Compost

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4. Non-Biodegradable Waste Management

- **Paper Waste**

Paper waste bins in and around the building help ensure clean, uncontaminated paper reaches recycling facilities. The institution generated approximately 0.39 kg of waste paper per day, amounting upto 86.06 kgs of waste paper during the previous year with a carbon footprint of 0.05 tCO2/kg.

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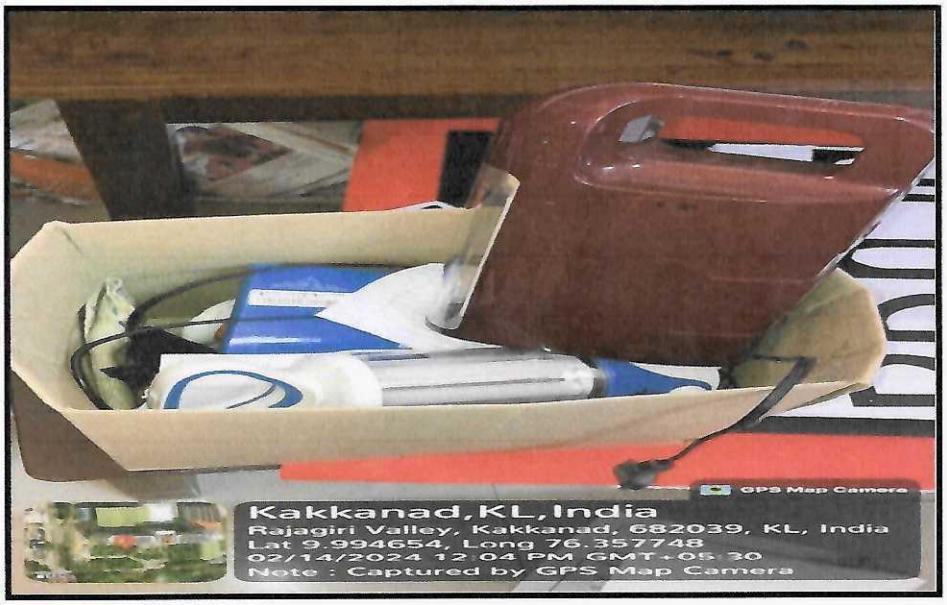
- **E-waste**

A partnership in the field of sustainability has been formed by the institution, which is aware of the environmental risks associated with electronic trash, or "E-waste." The college sets out on a path towards the appropriate disposal and recycling of electronic devices through a strategic Memorandum of Understanding (MoU) with a respected e-waste management business called Microage Networks and Solutions. This procedure lessens the negative effects of e-waste on the environment while simultaneously lowering the requirement for resource extraction and preserving valuable materials.



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This collaboration represents a harmonic fusion of technology and environmental awareness, going beyond traditional trash management techniques. The MoU requires the institution to set up specific locations for collecting e-waste, giving staff, instructors and students easy ways to get rid of it. Within the college community, a culture of e-waste knowledge and compliance is upheld through the seamless integration of collection infrastructure with awareness initiatives.

Certificate of E-waste Collection

Microage
networks & solutions

CERTIFICATE
OF DESTRUCTION

This is to certify that the 15 Kg of E Waste Collected from

M/s. Rajagiri College of Management and Applied Sciences

has been processed in accordance to all applicable local, State and Federal laws in an environmentally controlled way, eliminating waste to landfills. Used electronics waste is as prescribed under the guidance of the Basel convention (1994).

We certify that above listed material has been dismantled on the date listed below and all materials recovered were converted to raw material in our recycling process.

Presented on
03-04-2024

Invoice No.

Invoice date

SHAFI T M
MANAGING PARTNER
MICROAGE NETWORKS & SOLUTIONS

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- **Plastic Waste**

Plastics, notorious for their environmental persistence, pose a formidable challenge to sustainability efforts. That being said, waste segregation, recycling programmes, and support for alternatives to single-use plastics are all parts of the comprehensive approach to deal with the issue. The campus generates 0.58 kg of plastic waste per day amounting to 129 kilos of plastic in a year. In order to ensure effective processing and recycling of plastic and to ensure a plastic-free environment as far as possible, the institution has a strong infrastructure for the collecting and sorting of plastic waste made possible through an MoU. In order to enable the college community to embrace sustainable alternatives and minimize plastic usage, awareness campaigns and educational programmes are regularly organized as a valuable addition to these efforts. The collaboration also promotes a culture of creativity and sustainability by making it easier to investigate novel ideas, such as upcycling initiatives and eco-friendly packaging substitutes.

Plastic waste collection unit

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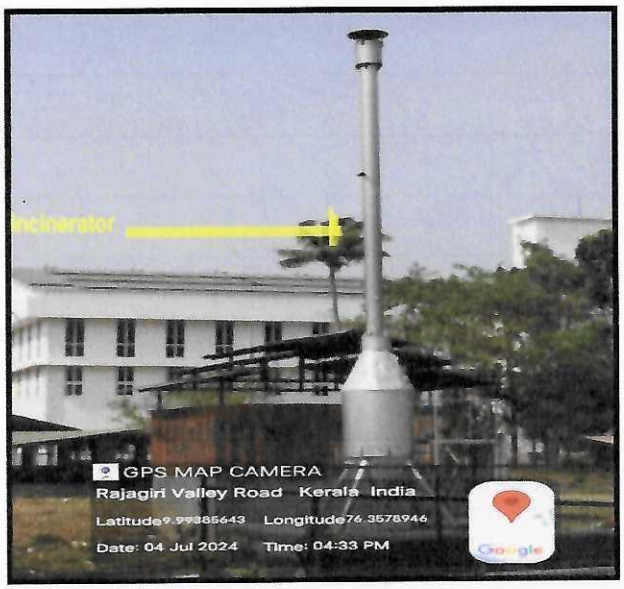
5. Other Waste Management Facilities

- **Incinerator**

Rajagiri College demonstrates a commendable commitment to environmental sustainability through its adoption of an incineration system. This technology plays a vital role in waste management by significantly reducing waste volume. It achieves this by employing high-temperature combustion to transform various designated materials into a minimal amount of ash. The incineration process effectively addresses a broad spectrum of waste streams, including paper waste, sanitary pad waste and even food scraps that are unsuitable for composting.

The incineration system prioritizes both safety and environmental responsibility. Regulations are in place to guide its operation to minimize environmental impact. This is achieved through meticulous emission control systems that capture and neutralize harmful pollutants before they are released into the atmosphere. The remaining ash, a byproduct of incineration, undergoes careful management and disposal in strict accordance with established guidelines. Additionally, trained personnel operate the incinerator, ensuring efficient and safe functioning.

Incinerator



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Recognising the importance of developing a sense of environmental responsibility among its students and staff, the college conducts regular awareness campaigns, workshops and seminars on waste reduction, reusing and recycling, and the significance of composting. Furthermore, students actively participate in eco-friendly initiatives, such as tree planting drives and plastic-free campus campaigns, contributing to a culture of sustainability.

The College has also integrated waste management initiatives into the co-curricular activities. Experience in environmental initiatives and courses like MOOC incorporate practical experiences related to waste management, providing students with hands-on learning opportunities. The college believes in sustainable waste management, creating a culture of academic excellence intertwined with environmental obligations.

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Standing true to the cause, the waste management facilities on the campus is evidence of its commitment to environmental sustainability. By blending cutting-edge technology, community engagement, and educational integration, the college has successfully created a holistic and unique approach to waste management. As the college continues on this eco-conscious journey, it serves as an educational institution and also as an inspiration for sustainable practices in the larger community.

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