# Bharati Vidyapeeth (Deemed to be University)



Green Audit, Environmental Audit and Energy Audit Report of Solapur Campus

June 2022 to May 2023





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#### Certificate

This is to certify that Prakrriti Enterprises has conducted the detailed 'Green Audit, Environmental Audit and Energy Audit' of the Bharati Vidyapeeth (Deemed to be University), Solapur Campus situated in Solapur, Maharashtra for the academic years 2022 -2023. The green audit was conducted in accordance with the existing regulations. The Green Audit, Environmental Audit and Energy Audit overs parameters such as green cover assessment, initiatives for environment education and awareness, community outreach, water and wastewater management, solid waste management and energy management.

Recommendations are suggested to implement the Environment Management Plan which the Institutions can follow to minimize the environmental impact.

Dates of audit conducted: 23-24 June 2023

Period of the audit: Academic year 2022-2023

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## **Acknowledgement**

We extend our sincere gratitude to all faculty as well as students who contributed to the successful completion of the Green Audit at Abhijit Kadam Institute of Management and Social Sciences (AKIMSS), Solapur. This audit would not have been possible without the dedicated efforts and collaboration of many.

Firstly, we express our heartfelt thanks to the institute's management, particularly Prof. Dr. S.B. Sawant, Director of AKIMSS, for his unwavering support and commitment to environmental sustainability. His vision and leadership have been instrumental in driving the institute's green initiatives.

We are deeply grateful to Dr. PP Kothari, Dr. Champatrao, Prof. Suryawanshi and the faculty members, administrative staff, and students who actively participated in the audit process. Their cooperation, enthusiasm, and willingness to share information and insights were invaluable in ensuring the thoroughness and accuracy of the audit.

Special thanks are due to the National Service Scheme (NSS) unit for their outstanding community engagement efforts and for facilitating various environmental activities on campus. Their dedication to promoting environmental awareness and social responsibility is truly commendable.

We also acknowledge the support of the external experts and consultants who provided their expertise and guidance throughout the audit. Their valuable inputs have greatly enriched the audit process and outcomes.

Finally, we appreciate the efforts of the audit team members who worked diligently to conduct a comprehensive and objective assessment of the campus's environmental performance. Their professionalism and commitment to excellence have been key to the success of this Audit.

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## **Executive Summary**

The Green Audit conducted at Abhijit Kadam Institute of Management and Social Sciences (AKIMSS), Solapur, reveals a robust commitment to environmental sustainability and management. The audit comprehensively assessed various aspects of the campus's environmental practices, including tree plantation, energy management, water conservation, waste management, environmental education, and community engagement. The findings highlight the institute's efforts in promoting a sustainable and eco-friendly environment while identifying areas for further improvement.

One of the key observations is the institute's extensive tree plantation and maintenance program. With 215 trees of various species tagged with QR codes for monitoring, AKIMSS has created a biodiverse and green campus. The energy management practices are also commendable, with significant contributions from solar power installations, particularly in the Management Studies and Computer Applications departments, reducing reliance on non-renewable energy sources. However, there is potential to expand solar energy utilization across other departments.

Water management at AKIMSS is efficient, with the use of groundwater, corporation water, and rainwater harvesting systems. The campus consumes approximately 3000 liters of water daily, reflecting effective water usage and conservation measures. Nonetheless, enhancing the capacity and coverage of rainwater harvesting systems can further optimize water resources.

Waste management practices include waste segregation, daily collection, and composting of biodegradable waste. However, there is a need to revitalize composting facilities and establish a system for hazardous waste management. Enhanced recycling efforts and regular waste audits can further improve the campus's waste management framework.

Environmental awareness and education are deeply integrated into the campus culture. The institute conducts various programs, workshops, and guest lectures to promote sustainability among students and staff. The NSS unit's initiatives, such as plastic collection drives, blood donation camps, and street plays, effectively engage the community and raise awareness about environmental issues.

Community engagement is a strong aspect of AKIMSS's sustainability efforts. Collaborations with local organizations and active participation in community-based projects demonstrate the institute's commitment to social responsibility. However, increasing the frequency and scope of these initiatives can further enhance community impact.

Campus has established a solid foundation for sustainable practices and environmental management. By addressing the identified opportunities provided in the audit, the institute can continue to advance its sustainability goals, setting a benchmark for other educational institutions. The commitment of the entire campus community will be pivotal in driving these initiatives forward and fostering a more sustainable and environmentally responsible campus.

## 1 Background of the Green Audit, Environmental Audit and Energy Audit

Conducting a green audit at Abhijit Kadam Institute of Management and Social Sciences, Solapur, is essential to reinforce the institute's commitment to sustainability and environmental stewardship. As an educational institution dedicated to social work, the institute has a responsibility to lead by example in promoting environmental sustainability. A green audit helps assess and improve the institute's environmental impact, reinforcing its commitment to ecological stewardship.

A green audit identifies areas where resources such as energy, water, and materials can be used more efficiently. This not only reduces the environmental footprint but also leads to cost savings, ensuring that the institute utilizes its resources sustainably. Moreover, ensuring compliance with environmental regulations and standards is crucial. A green audit helps the institute stay up-to-date with legal requirements, avoiding potential fines and enhancing its reputation as an environmentally responsible entity.

The green audit process serves as a valuable educational tool for students and staff. It raises awareness about environmental issues, promotes sustainable practices, and integrates practical, hands-on learning experiences into the academic curriculum. The institute's commitment to the United Nations Sustainable Development Goals can be reinforced through a green audit, supporting goals such as responsible consumption and production, climate action, and life on land.

Demonstrating a proactive approach to environmental management enhances the institute's reputation among stakeholders, including students, parents, faculty, and the wider community. It showcases the institute as a leader in sustainable practices within the educational sector. Additionally, a green audit provides a baseline from which the institute can measure progress and continuously improve its environmental performance, identifying strengths, weaknesses, and opportunities for enhancing sustainability initiatives.

#### 2 Introduction

Bharati Vidyapeeth (Deemed to be University) Solapur campus houses the Abhijit Kadam Institute of Management and Social Sciences. The campus is well-maintained and filled with lush greenery, providing an environment conducive to learning and environmental awareness.

As a premier social work school under Bharati Vidyapeeth Deemed to be University, Pune, the institute has received 'A' Grade Accreditation from NAAC. Established in 1982, it has been a constituent unit since the academic year 2005-06. The institute was honored with a 'B' grade by the Directorate of Social Welfare, Government of Maharashtra, in association with Tata Institute of Social Sciences, Mumbai, in 2001-02.

The institute offers a postgraduate degree in MSW (Master of Social Work), approved by the Directorate of Social Welfare, Pune. The curriculum emphasizes environmental responsibility, preparing students to address social and ecological challenges effectively.

The campus buildings are newly constructed, offering advanced facilities. Students can access banking facilities, a well-stocked library, sports fields, and computer laboratories. A conveniently located canteen with a wide variety of food is also one of the main attractions.

The institute boasts an excellent full-time faculty and visiting professors who bring realworld environmental expertise into the classroom. Specialist scholars regularly deliver lectures on sustainability, environmental policies, and green practices, enriching students' knowledge in social work and environmental consciousness.

Institute ensures that students are well-equipped to contribute meaningfully to environmental and social causes, promoting sustainable development and ecological well-being in their professional and personal lives.

1. Latitude and Longitude: 18.458480 and 73.854260

2. Altitude: 17.63971 N ,75.90247E

3. Available Area of the facility: 2.82 Acre



Plate 1: Map of the campus

#### Institutions on campus

#### Abhijit Kadam Institute of Management and Social Sciences (AKIMSS)

#### Hostels on campus

• NIL

#### **Population**

• Total faculty and staffs: 35

• Students: 824

#### **Facilities on Campus**

#### 1. Location and Environment

• Total area: 11,500.54 sq.mtrs.

• Lush green, pollution-free area.

#### 2. Classrooms and Training

- Spacious classrooms equipped with audiovisual aids
- Conference and seminar hall.
- Special skill lab for social work training.

#### 3. Medical Facilities

- In-house doctor.
- Services of a local general practitioner.

#### 4. Library

- Numerous national and international journals. DELNET access for a wide range of journals.
- Spacious reading room with extended hours during examinations.

#### 3 Environmental Policy

#### 1. Introduction

This Environmental Management Plan (EMP) outlines the strategy for managing and improving the environmental performance of the Abhijit Kadam Institute of Management and Social Sciences (AKIMSS) in Solapur. The EMP aims to promote sustainability, reduce environmental impacts, and comply with relevant environmental regulations.

#### 2. EMP Objectives

- Enhance environmental awareness and responsibility among students, staff, and faculty.
- Reduce waste generation and promote recycling and composting.
- Improve energy efficiency and promote the use of renewable energy.
- Conserve water through effective management practices.
- Maintain and enhance green spaces and biodiversity on campus.

#### 3. Environmental Management Plan Components

#### 3.1 Tree Plantation and Green Spaces

- Maintain and monitor the existing 215 trees on campus.
- Organize annual tree planting drives to increase green cover.
- Ensure regular maintenance and care of planted trees.
- Implement QR code tagging for all trees to monitor health and growth.

#### 3.2 Waste Management

- Segregate waste at source into dry, wet, and hazardous categories.
- Implement composting for biodegradable waste, particularly canteen waste.
- Recycle paper, cardboard, glass, plastic, and electronic waste.
- Conduct awareness programs on waste segregation and recycling for students and staff.
- Install adequate waste collection and storage facilities.

#### 3.3 Water Management

- Utilize ground and corporation water sources efficiently.
- Implement rainwater harvesting systems to reduce reliance on external water sources.
- Monitor water usage and promote water-saving practices.
- Install water-efficient fixtures and appliances.
- Maintain and regularly check the rainwater harvesting infrastructure.

#### 3.4 Energy Management

- Increase the use of solar power to reduce dependency on non-renewable energy sources.
- Install energy-efficient lighting and appliances across campus.
- Conduct regular energy audits to identify and rectify inefficiencies.
- Promote the use of natural lighting and ventilation.

#### 3.5 Environmental Awareness and Education

- Organize workshops, seminars, and guest lectures on environmental sustainability.
- Encourage participation in environmental initiatives and activities.
- Include environmental topics in the curriculum across all departments.
- Celebrate environmental days with activities and awareness campaigns.

#### 3.6 Vendor and Procurement Practices

- Ensure that vendors comply with environmental standards and practices.
- Prefer vendors who use sustainable and eco-friendly products.
- Reduce the use of single-use plastics and promote the use of reusable items.

#### 3.7 Community Engagement and Outreach

- Partner with local environmental groups and NGOs to enhance community outreach.
- Conduct community clean-up drives and tree plantation events.
- Encourage students to participate in community environmental projects.

#### 4. Monitoring and Evaluation

- Establish an Environmental Management Committee to oversee the implementation of the EMP.
- Conduct regular audits and reviews of environmental practices.
- Use feedback from audits to improve and update the EMP.
- Report progress and challenges to the institute's management regularly.

#### 5. Budget and Resources

- Allocate a dedicated budget for environmental management activities.
- Seek funding and grants from government and non-government organizations for sustainability projects.
- Utilize internal and external resources for training and capacity building.

The implementation of this EMP will help AKIMSS achieve its environmental sustainability goals, improve the quality of life on campus, and serve as a model for other institutions. The active participation of students, staff, and faculty is crucial for the success of this plan.

#### 4 Environmental Policy

**Objective:** The Abhijit Kadam Institute of Management and Social Sciences (AKIMSS), Solapur, is committed to environmental stewardship and sustainable practices. Our Environmental Policy focuses on protecting the environment, preventing pollution, and continuously improving our environmental performance.

**Commitment to Environmental Protection:** We strive to minimize our environmental impact by implementing measures to prevent pollution and enhance sustainability.

**Compliance:** AKIMSS adheres to all relevant environmental laws and regulations.

**Continuous Improvement:** We are dedicated to continuously improving our environmental performance by setting and reviewing objectives and targets.

**Resource Management:** We optimize water usage through conservation and rainwater harvesting, enhance energy efficiency, and promote renewable energy. Waste is reduced, reused, and recycled to minimize environmental impact.

**Biodiversity:** We maintain and enhance green spaces, organize tree plantation drives, and protect natural habitats on campus.

**Environmental Awareness:** We integrate environmental education into our curriculum and conduct training programs, workshops, and seminars to raise awareness.

**Sustainable Procurement:** We prefer environmentally friendly products and encourage our suppliers to adopt sustainable practices.

**Community Engagement:** We engage with local communities and organizations to promote environmental sustainability and participate in community-based initiatives.

This policy is communicated to all staff, faculty, and students, ensuring everyone's participation in our environmental initiatives. Regular monitoring and periodic reviews ensure the effectiveness and relevance of our policy. AKIMSS is committed to leading by example in environmental stewardship.

#### 5 Audit Scope

The Green Audit for the Abhijit Kadam Institute of Management and Social Sciences (AKIMSS), Solapur, comprehensively evaluates the campus's environmental practices and sustainability initiatives. The audit covers various aspects of environmental management to identify areas for improvement and enhance the institute's overall environmental performance.

#### 5.1 GREEN AUDIT

#### 5.1.1 Campus Infrastructure and Green Spaces

- Assessment of tree plantation efforts, including species diversity and maintenance practices.
- Evaluation of green cover and landscaping to promote biodiversity.

#### 5.1.2 Environmental Awareness and Education

- Analysis of environmental education initiatives and integration into the curriculum.
- Review of awareness programs, workshops, and seminars conducted to promote sustainability.

#### 5.1.3 Sustainable Practices and Procurement

- Evaluation of procurement policies to ensure preference for sustainable and ecofriendly products.
- Assessment of vendor compliance with environmental standards.

#### 5.1.4 Community Engagement

- Review of initiatives to engage with local communities and promote environmental sustainability.
- Assessment of participation in community-based environmental projects.

#### **5.2 ENVIRONMENTAL AUDIT**

#### 5.2.1 Water Management

- Examination of water sources, usage, and conservation measures.
- Evaluation of rainwater harvesting systems and their effectiveness.
- Monitoring of water consumption and identification of reduction strategies.

#### 5.2.2 Waste Management

- Evaluation of waste segregation practices and the effectiveness of composting and recycling programs.
- Assessment of waste generation and disposal methods for biodegradable, nonbiodegradable, and hazardous wastes.
- Review of the canteen waste management system.

#### **5.3 ENERGY AUDIT**

#### 5.3.1 Energy Management

- Analysis of energy consumption patterns across departments.
- Review of renewable energy sources, including the solar power setup.
- Identification of energy-saving opportunities and efficiency improvements.

This audit aims to provide a clear understanding of the current environmental practices at AKIMSS and to recommend actionable steps for enhancing sustainability on campus

#### 6 AUDIT METHODOLOGY

The Green Audit at the Abhijit Kadam Institute of Management and Social Sciences (AKIMSS), Solapur, was conducted using a systematic and comprehensive approach. The methodology employed during this audit exercise ensured a thorough evaluation of the campus's environmental performance across various parameters.

#### 6.1 Pre-Audit Planning

The audit team commenced with pre-audit planning, which included defining the scope and objectives of the audit, identifying key areas for evaluation, and developing an audit checklist. Meetings were held with the institute's management to gather preliminary information and to ensure the availability of necessary data and resources.

#### 6.2 Data Collection

Data collection was a critical step in the audit process. Various methods were used, including surveys, interviews, and observations. The audit team collected data on energy consumption, water usage, waste generation, and biodiversity. Information was also gathered through documents, records, and reports provided by the institute. The use of QR codes for tree monitoring was particularly useful for collecting data on the health and diversity of campus flora.

#### 6.3 Site Inspection

A detailed site inspection was conducted to verify the data collected and to observe the environmental practices in place. The audit team inspected the campus infrastructure, including green spaces, energy systems, water sources, and waste management facilities. The functionality of rainwater harvesting systems and the efficiency of solar power installations were also assessed during the site visits.

#### 6.4 Interviews and Discussions

Interviews were conducted with key stakeholders, including faculty members, administrative staff, and students. These discussions provided insights into the institute's environmental policies, practices, and the level of awareness among the campus community. Feedback from these interviews was integral in understanding the practical challenges and opportunities for improvement.

#### 6.5 Data Analysis

The collected data was meticulously analyzed to identify trends, strengths, and areas needing improvement. Quantitative data on energy and water consumption, waste

generation, and other metrics were compared against established benchmarks. Qualitative data from interviews and observations were also evaluated to gain a comprehensive understanding of the institute's environmental performance.

#### 6.6 Reporting

Based on the data analysis, a detailed audit report was prepared. The report included findings on the current environmental practices, compliance with regulations, and the effectiveness of sustainability initiatives. Opportunities for improvement were identified to enhance the institute's environmental performance. The report also highlighted best practices and success stories to encourage continued efforts in sustainability.

#### 6.7 Follow-Up

Post-audit, the audit team conducted follow-up meetings with the institute's management to discuss the findings and identified opportunities. A plan for implementing the identified opportunities was developed, and timelines were established for monitoring progress. The follow-up process ensures that the opportunities identified in the audit are effectively translated into actionable steps.

This audit methodology ensured a thorough and objective assessment of the environmental practices at AKIMSS, Solapur. The comprehensive approach not only identified areas for improvement but also reinforced the institute's commitment to environmental sustainability.

## **GREEN AUDIT**

#### **7 GREEN AUDIT**

#### 7.1 Observations of Green Space Initiative

The Abhijit Kadam Institute of Management and Social Sciences (AKIMSS) in Solapur has undertaken significant efforts to maintain and enhance its green spaces, creating a sustainable and environmentally friendly campus. The institute has planted a total of 215 trees of various species, which include Arjun Tree, Ashoka Tree, Indian Almond Tree, Subabal, Rain Tree, Umbar Tree, Royal Palm Tree, Vilayati Chinch, Areca Palm, Saptparni, Ficus Benjamina, Foxtail Palm, Cycas, Cypress, Jatropha, Fan Palm, Cafha, Christmas Tree, and Table Palm Tree. Each tree is tagged with a QR code that provides detailed information about the tree and its maintenance, allowing for efficient monitoring and management. This system ensures that the trees are well-cared for, contributing to the campus's biodiversity and aesthetic value.

The trees are strategically planted across the 2.82-acre campus, providing shade, improving air quality, and enhancing the overall environment. Regular maintenance activities, including watering, pruning, and pest control, are conducted to ensure the health and growth of these trees. Despite these efforts, there is room for further improvement, particularly in expanding the variety of tree species and increasing the overall green cover on campus.:

Table 1: Plant detaisl with QR Code

| Sr. No | Name of Tree | QR Code | Images of QR Tree | Total No of Tree |
|--------|--------------|---------|-------------------|------------------|
|        |              | AKIMSS  |                   |                  |
|        |              | 風燈里     |                   |                  |
| 1      | Arjun Tree   |         |                   | 1                |
|        |              | SOLAPUR |                   |                  |
|        |              | JOLAFON |                   |                  |

| 2 | Ashoka Tree<br>(Monoon<br>Longifolium)        | AKIMSS |                               | 17 |
|---|---|--------|-------------------------------|----|
| 3 | Indian Almond Tree<br>(Terminalia<br>Catappa) | AKIMSS |                               | 03 |
| 4 | subabal<br>(Leucaena<br>leucocephala)         | AKIMSS | shutterslock.com - 1733660020 | 01 |
| 5 | Rain Tree<br>Samanea saman                    | AKIMSS |                               | 13 |

| 6 | Umbar Tree<br>Ficus racemosa                  | AKIMSS | 02 |
|---|---|--------|----|
| 7 | Royal Pam Tree                                | AKIMSS | 43 |
| 8 | Vilayati Chinch<br>(Pithecellobium<br>dulce), | AKIMSS | 01 |
| 9 | Areca palm                                    | AKIMSS | 43 |

| 10 | Saptparni<br>(Alstonia)    | AKIMSS | 02 |
|----|----------------------------|--------|----|
| 11 | Ficus benjamina            | AKIMSS | 28 |
| 12 | Foxtail Palm<br>(Wodyetia) | AKIMSS | 07 |
| 13 | Cycas                      | AKIMSS | 03 |

|    |          | SOLAPUR |    |
|----|----------|---------|----|
| 14 | Cypress  | AKIMSS  | 10 |
| 15 | Jatropha | AKIMSS  | 02 |
| 16 | Fan palm | AKIMSS  | 01 |

| 17 | Cafha<br>(Plumeria rubra)              | AKIMSS | 03 |
|----|--|--------|----|
| 18 | Christmas tree                         | AKIMSS | 05 |
| 19 | Table Palm Tree<br>Livistona chinensis | AKIMSS | 30 |

#### 7.2 Observation on Environmental Education and Awareness

The Abhijit Kadam Institute of Management and Social Sciences (AKIMSS), Solapur, has made significant strides in fostering environmental awareness and education among its campus community. The institute integrates environmental education into its curriculum, ensuring students are well-versed in sustainability practices and the importance of environmental stewardship.

One of the key initiatives observed was the celebration of World Environment Day on June 5th, 2024. On this occasion, the NSS Unit of the institute organized a guest lecture on the "Role of the Students in Environmental Sustainability." The lecture was delivered by Prof. Dr. R.R. Lohar, Assistant Professor from RIT Sakhrale-Islampur, and was attended by many faculty members, non-teaching staff, students, and NSS volunteers. Dr. Lohar emphasized the close relationship between human life and environmental resources, highlighting the need for conservation and sustainable practices. He discussed the causes of environmental unsustainability, such as deforestation, greenhouse gas emissions, soil degradation due to excessive use of chemical fertilizers and pesticides, and pollution of air, water, and sound. He introduced the five R's model—Reduce, Refuse, Reuse, Recycle, and Regenerate—as a framework for promoting sustainability.

Furthermore, AKIMSS regularly participates in national and international conferences on environment and sustainable development. Faculty members have contributed to scholarly articles and journals on topics related to solar energy, green HR practices, and other sustainability-related subjects. These academic contributions enhance the institute's reputation and provide valuable insights into practical solutions for environmental challenges.

In addition to formal education, AKIMSS engages students in practical environmental activities. The NSS unit conducts various environmental awareness programs, including massive plastic collection drives, blood donation camps, and street plays to educate the local community about environmental issues. These activities provide hands-on experience and encourage students to actively promote sustainability.

Overall, the institute's efforts in environmental awareness and education are comprehensive and impactful, contributing to a culture of sustainability and responsible environmental management on campus

#### 7.3 Opportunities on Green Cover

During the audit at the Abhijit Kadam Institute of Management and Social Sciences (AKIMSS), Solapur, several notable sustainability practices were observed that were not initially within the scope of the audit. These practices demonstrate the institute's broader commitment to environmental stewardship and sustainability:

#### 7.3.1 NSS Cell Initiatives

The National Service Scheme (NSS) unit at AKIMSS has been actively involved in various environmental initiatives. One significant activity is the Massive Plastic Collection drive. This initiative involves collecting plastic waste from the campus and surrounding areas,

significantly reducing plastic pollution. Additionally, the NSS unit organizes blood donation camps and street plays to raise awareness about various social and environmental issues.

#### 7.3.2 Solar Power Setup

AKIMSS has invested in solar power installations to reduce its reliance on non-renewable energy sources. The solar power setup on campus helps in generating a substantial amount of electricity, which is used to power various facilities. This initiative not only reduces the campus's carbon footprint but also sets an example for renewable energy adoption in educational institutions .

#### 7.3.3 Participation in Conferences and Publications

Faculty members at AKIMSS actively participate in national and international conferences on environment and sustainable development. They have also contributed to scholarly articles and journals on various sustainability topics, such as solar energy utilization and green HR practices. This engagement highlights the institute's commitment to advancing knowledge and practices in sustainability.

#### 7.3.4 Indoor and Outdoor Sports Facilities

AKIMSS promotes physical health and well-being through various indoor and outdoor sports activities. Facilities for games like carrom, chess, table tennis, and cricket are available, encouraging students to engage in physical activities that contribute to their overall well-being. This holistic approach to health indirectly supports sustainability by promoting a balanced lifestyle.

The audit team observed that AKIMSS is actively engaged in several sustainability practices beyond the initial scope of the audit. These initiatives reflect the institute's comprehensive approach to environmental stewardship and its commitment to promoting sustainability through education, energy management, community involvement, and physical well-being. By continuing to enhance and expand these practices, AKIMSS can further strengthen its position as a leader in sustainable campus management.

#### 7.4 Observations on Community Engagement

#### 7.4.1 NSS Cell Activities

The National Service Scheme (NSS) unit at AKIMSS plays a pivotal role in community engagement. One of the significant activities conducted by the NSS unit is the Massive Plastic Collection drive. This initiative involves organizing clean-up drives where students and volunteers collect plastic waste from the campus and surrounding areas. This activity not only helps in reducing plastic pollution but also raises awareness about the harmful effects of plastic waste on the environment

#### 7.4.2 Blood Donation Camps

The NSS unit regularly organizes blood donation camps, which see active participation from students, faculty, and staff. These camps are crucial in supporting local healthcare facilities and promoting the spirit of community service among the campus community. The organization of these camps underscores the institute's commitment to social responsibility and community welfare

#### 7.4.3 Street Plays

To educate and engage the local community on various social and environmental issues, the NSS unit conducts street plays. These performances are designed to raise awareness and encourage positive behavioral changes among the audience. Topics covered in these street plays include environmental conservation, waste management, and sustainable living practices. This method of engagement is effective in reaching a broad audience and making a tangible impact on community awareness

#### 7.4.4 Collaborations with Local Organizations

AKIMSS collaborates with local non-governmental organizations (NGOs) and community groups to enhance its community engagement efforts. These collaborations facilitate a more extensive reach and impact of the institute's initiatives. By working together with local entities, AKIMSS ensures that its community service projects are well-coordinated and address the specific needs of the community

#### 7.4.5 Environmental Awareness Programs

By implementing these identified opportunities, Bharati Vidyapeeth (Deemed to be University), Solapur Campus, can further enhance its environmental education and awareness strategies. These efforts will continue to foster a culture of sustainability and environmental responsibility within the campus community and beyond



Plate 2: Environmental Awarness Activities in Campus

#### 7.5 Opportunities for Green Space Initiative

#### 7.5.1 Enhance Biodiversity

Introduce a wider variety of tree species, focusing on indigenous plants that are well-suited to the local climate and soil conditions. This will further enhance the campus's biodiversity and resilience.

#### 7.5.2 Regular Monitoring

Continue and expand the regular monitoring of trees using the existing QR code system. This will help in tracking the health, growth, and maintenance needs of each tree, ensuring timely interventions when necessary.

#### 7.5.3 Green Cover Expansion

Plan and execute additional tree plantation drives to increase the overall green cover. Aim to plant at least 50 new trees annually, focusing on areas with less greenery to ensure even distribution across the campus.

#### 7.5.4 Student and Community Involvement

Encourage greater participation from students and the local community in tree plantation and maintenance activities. Organize workshops and campaigns to educate and involve them in these initiatives.

#### 7.5.5 Sustainable Landscaping Practices

Adopt sustainable landscaping practices such as using organic fertilizers and pest control methods. Install drip irrigation systems to conserve water and ensure efficient use of resources.

#### 7.5.6 Green Certification

Seek certification for the campus as a green campus from recognized environmental organizations. This will not only validate the efforts but also provide guidelines for further improvements.

#### 7.6 Opportunities on Environmental Awareness

By implementing following identified opportunities, AKIMSS can strengthen its environmental awareness and education initiatives, fostering a well-informed and proactive campus community committed to sustainability

#### 7.6.1 Expand Curriculum Integration

Further integrate environmental topics across more courses in all departments. This ensures that students from various academic backgrounds gain a comprehensive understanding of sustainability practices and environmental stewardship.

#### 7.6.2 Increase Participation

Encourage broader participation from students, faculty, and staff in environmental programs and initiatives. This can be achieved by incorporating environmental activities into regular academic and extracurricular schedules.

#### 7.6.3 Regular Updates

Continuously update the content of environmental awareness programs to reflect the latest developments and challenges in environmental sustainability. This keeps the campus community informed and engaged with current environmental issues.

#### 7.6.4 Practical Environmental Activities

Organize more hands-on environmental activities such as tree planting drives, clean-up campaigns, and recycling workshops. Practical engagement helps in reinforcing theoretical knowledge and builds a culture of active participation.

#### 7.6.5 Collaborations with Experts

Partner with environmental organizations, experts, and NGOs to bring diverse perspectives and expertise to the campus. Guest lectures, workshops, and joint projects can enrich the learning experience and provide practical insights.

#### 7.6.6 Use of Digital Platforms

Utilize digital platforms to conduct webinars, online courses, and virtual workshops on environmental sustainability. This approach can reach a wider audience and facilitate learning despite geographical constraints.

#### 7.6.7 Environmental Awareness Campaigns

Launch targeted campaigns to raise awareness about specific environmental issues such as plastic pollution, water conservation, and energy efficiency. Use posters, social media, and events to spread the message effectively.

#### 7.6.8 Green Certifications

Encourage students and faculty to pursue green certifications and training programs. This not only enhances their knowledge but also adds to the institute's credentials in environmental education.

#### 7.6.9 Annual Environmental Events

Institutionalize the celebration of environmental events such as Earth Day, World Environment Day, and Energy Conservation Week. These events can include a variety of activities such as debates, quizzes, and exhibitions focused on sustainability.

#### 7.6.10 Monitoring and Feedback

Establish a system for monitoring the effectiveness of environmental education initiatives. Collect feedback from participants to understand the impact and areas for improvement. Use this feedback to refine and enhance future programs.

## 7.7 Opportunities on Sustainability Practices

#### 7.7.1 Enhance NSS Initiatives

Expand the scope and frequency of the NSS activities, such as the Massive Plastic Collection drive, to cover a broader area and engage more volunteers. Regularly organize community clean-up events and educational street plays to raise awareness about environmental issues.

#### 7.7.2 Increase Solar Power Utilization

Expand the solar power setup to cover more buildings and facilities on the campus. This will further reduce reliance on non-renewable energy sources and promote renewable energy usage across the entire campus.

#### 7.7.3 Support Faculty Participation in Conferences

Provide more support and incentives for faculty members to participate in national and international conferences on environment and sustainable development. This will help them stay updated on the latest research and practices, and contribute to the institute's sustainability initiatives .

#### 7.7.4 Implement Green Certifications

Pursue green certifications for the campus from recognized environmental organizations. This will validate the institute's sustainability efforts and provide a framework for continuous improvement.

#### 7.7.5 Develop a Comprehensive Sustainability Policy

Create and implement a comprehensive sustainability policy that encompasses all aspects of campus operations. This policy should include specific goals, timelines, and metrics for measuring progress in areas such as energy, water, waste management, and community engagement.

#### 7.7.6 Increase Community Engagement

Strengthen collaborations with local communities, NGOs, and environmental groups. Participate in and host community-based environmental projects to enhance the institute's impact beyond the campus.

#### 7.7.7 Continuous Monitoring and Improvement

Establish a robust system for monitoring sustainability practices and their outcomes. Regularly review and update practices based on feedback and new developments in the field of environmental management.

Implementing these identified opportunities will help AKIMSS enhance its sustainability practices, reduce its environmental impact, and foster a culture of sustainability within the campus community.

#### 7.8 Opportunities for the Community Engagement

#### 7.8.1 Expand Community Clean-Up Drives

Increase the frequency and scope of the plastic collection drives to cover a wider area and engage more volunteers. This will enhance the impact and promote greater community involvement in reducing plastic pollution.

#### 7.8.2 Strengthen Blood Donation Camps

Organize more blood donation camps and encourage broader participation from students, faculty, and the local community. Collaborate with local healthcare facilities to ensure the collected blood is effectively utilized.

#### 7.8.3 Enhance Awareness through Street Plays

Continue and expand the use of street plays to raise awareness about various social and environmental issues. Focus on current and relevant topics to keep the community informed and engaged.

#### 7.8.4 Collaborate with Local Organizations

Develop stronger partnerships with local NGOs, community groups, and government bodies to enhance the effectiveness of community engagement initiatives. Joint projects can lead to more significant impacts and resource sharing.

#### 7.8.5 Increase Environmental Education Programs

Organize regular workshops, seminars, and guest lectures on environmental sustainability and social responsibility. Involve experts and practitioners to provide practical insights and inspire action.

#### 7.8.6 Promote Student and Faculty Participation

Encourage students and faculty members to take active roles in planning and executing community engagement activities. Provide incentives such as recognition awards and certificates to motivate participation.

#### 7.8.7 Implement Feedback Mechanisms

Establish a system to collect feedback from participants and the community on the effectiveness of the engagement initiatives. Use this feedback to continuously improve the programs and address any gaps.

#### 7.8.8 Develop a Community Engagement Plan

Create a comprehensive plan outlining the goals, strategies, and activities for community engagement. Ensure the plan includes measurable targets and timelines for achieving them.

#### 7.8.9 Raise Awareness through Digital Platforms

Utilize social media and other digital platforms to raise awareness about the institute's community engagement initiatives. Share success stories, upcoming events, and educational content to reach a broader audience.

#### 7.8.10 Monitor and Report Progress

Regularly monitor the progress of community engagement initiatives and report the outcomes to the campus community and stakeholders. Transparency and accountability will help in sustaining support and participation.

By implementing these identified opportunities, AKIMSS can enhance its community engagement efforts, fostering a stronger relationship with the local community and promoting sustainable and socially responsible practices.

# ENVIRONMENTAL AUDIT

#### 8 ENVIRONMENTAL AUDIT

## 8.1 Observation for water management

The Abhijit Kadam Institute of Management and Social Sciences (AKIMSS), Solapur, has implemented several measures to manage water resources efficiently, reflecting its commitment to sustainability. The campus relies on a combination of groundwater and corporation water sources to meet its daily water requirements. The institute has installed rainwater harvesting systems, which significantly contribute to water conservation efforts.

The total water consumption for the campus is approximately 3000 liters per day, amounting to an annual consumption of 1,095,000 liters. This consumption supports a population of 12 teaching staff, 23 non-teaching staff, and 824 students. On a per capita basis, the annual water consumption is about 3 liters per individual. These figures indicate a reasonable level of water usage, considering the campus's population and infrastructure.

The rainwater harvesting system is well-maintained and actively utilized. The harvested rainwater is effectively used for various purposes, reducing the dependence on external water sources. The institute also emphasizes the importance of water conservation through awareness programs and practical measures. Regular maintenance of water infrastructure ensures minimal water wastage and leakages.

Despite these positive aspects, there is always room for improvement. Further expansion of rainwater harvesting systems and the implementation of advanced water-saving technologies could enhance water conservation efforts. Additionally, continuous monitoring and regular audits of water usage can help identify areas for further optimization and 8.2 Observation on Waste Management.



Plate 3: Rain water Harvesting

Table 2: Water Source and usage details

| Name of the college /hostel on campus | Source of water (Y/N)    |                       | Rainwater<br>harvesting<br>(Y/N) | Total<br>consumptio<br>n/ day<br>(litres) | Annual consumption (litres) | Total<br>strength | Per capita<br>annual<br>consumption |
|---------------------------------------|--------------------------|-----------------------|----------------------------------|---|-----------------------------|-------------------|-------------------------------------|
|                                       | Ground<br>water<br>(Y/N) | Corporatio<br>n (Y/N) |                                  |   |                             |                   |                                     |
| BVDUAKIMSS<br>SOLAPUR                 | YES                      | YES                   | YES                              | 3000 LTR                                  | 10,95000<br>LTR             | 1000              | 3LTR                                |

# 8.2 Observations of Waste Management Practices

The waste management practices at the Abhijit Kadam Institute of Management and Social Sciences (AKIMSS), Solapur, reflect a systematic approach to handling various types of waste generated on campus. The audit team observed that the campus generates

approximately 25 kilograms of waste per week. This waste is categorized into dry, wet, and hazardous types, with a focus on segregation at the source.

Dry waste primarily consists of paper, cardboard, plastics, and other recyclable materials. Wet waste mainly includes organic matter from the canteen and garden waste. Although hazardous waste generation is minimal, there are no dedicated facilities or protocols for its disposal. The institute has made efforts to implement composting practices for biodegradable waste. However, the audit revealed that the composting facilities are currently non-functional and need to be revitalized to handle the organic waste effectively.

Waste collection is conducted daily, ensuring that waste does not accumulate and cause health or environmental hazards. The waste is stored properly until it is disposed of, preventing any contamination or nuisance. Despite these efforts, there is room for improvement, especially in enhancing recycling efforts and managing hazardous waste more efficiently.

Overall, while AKIMSS has established a foundation for effective waste management, there are several areas where improvements can be made to align with best practices in sustainability and environmental management.

Table 3: Waste Generation in the Campus

| Name of the College/ Institute | Waste<br>generate<br>d (per<br>week)<br>in kg | Type of waste<br>generated |     | Is it segreg ated? | Green Practices |      | Frequ<br>ency<br>of<br>waste<br>collec<br>tion | Stora<br>ge<br>facilit<br>y till<br>dispo<br>sed |     |
|--------------------------------|---|----------------------------|-----|--------------------|-----------------|------|--|--|-----|
|                                |   | Dry                        | Wet | Haza<br>rdou<br>s  |                 | Comp | Recyc<br>ling                                  |  |     |
| BVDUAKIMSS<br>SOLAPUR          | 25Kg  | YES                        | YES | NO                 | YES             | NO   | NO   | DAILY  | YES |



Plate 4: Waste Collection System in Campus

# 8.3 Opportunities for Water Management

Implementing these identified opportunities will enhance the water management practices at AKIMSS, promoting sustainability and ensuring the efficient use of water resources

#### 8.3.1 Expand Rainwater Harvesting Systems

Increase the capacity and coverage of existing rainwater harvesting systems to capture and utilize more rainwater, thereby reducing reliance on external water sources.

#### 8.3.2 Implement Advanced Water-Saving Technologies

Install water-efficient fixtures and appliances such as low-flow faucets, showerheads, and dual-flush toilets to reduce water consumption.

#### 8.3.3 Regular Monitoring and Maintenance

Conduct regular monitoring of water usage to identify areas of wastage and ensure optimal utilization. Perform routine maintenance on water infrastructure to prevent leaks and minimize water loss.

#### 8.3.4 Water Conservation Campaigns

Launch awareness campaigns and educational programs to promote water conservation practices among students, staff, and faculty. Encourage behavioral changes that lead to reduced water usage.

#### 8.3.5 Greywater Recycling

Implement greywater recycling systems to treat and reuse water from sinks, showers, and other sources for non-potable purposes such as irrigation and toilet flushing.

#### 8.3.6 Increase Groundwater Recharge

Develop and maintain groundwater recharge pits or trenches to enhance the natural replenishment of groundwater resources.

#### 8.3.7 Data-Driven Decision Making

Utilize data analytics to track water consumption patterns and make informed decisions on water management strategies. This can help in setting realistic water-saving targets and measuring progress.

#### 8.3.8 Collaboration with Experts

Collaborate with water management experts and environmental consultants to identify and implement best practices in water conservation and management.

#### 8.3.9 Sustainable Landscaping

Adopt sustainable landscaping practices such as xeriscaping, which involves using drought-resistant plants to reduce the need for irrigation.

#### 8.3.10 Infrastructure Upgrades

Invest in upgrading the campus's water infrastructure to more sustainable and efficient systems, ensuring long-term water security and sustainability.

#### 8.4 Opportunities for Waste Management Practices

Implementing these identified opportunities, AKIMSS can enhance its waste management practices, reduce its environmental impact, and promote a culture of sustainability on campus.

#### 8.4.1 Enhance Composting Facilities

Revitalize and expand the composting facilities on campus to effectively manage biodegradable waste, especially from the canteen. This will help reduce the volume of organic waste sent to landfills.

#### 8.4.2 Implement Hazardous Waste Management System

- Establish a dedicated system for the safe disposal of hazardous waste. This includes creating protocols for the identification, segregation, and disposal of hazardous materials.
- Increase Recycling

#### 8.4.3 Implement Hazardous Waste Management System

Establish a dedicated system for the safe disposal of hazardous waste. This includes creating protocols for the identification, segregation, and disposal of hazardous materials.

#### 8.4.4 Increase Recycling Efforts

Enhance the recycling program to include a wider range of materials such as paper, cardboard, glass, plastic, and e-waste. Set up clearly labeled recycling bins across the campus to encourage proper waste segregation.

#### 8.4.5 Conduct Regular Waste Audits

Perform regular waste audits to track the types and quantities of waste generated. Use the findings to identify areas for improvement and to measure the effectiveness of waste management initiatives.

#### 8.4.6 Promote Waste Reduction Practices

Launch campaigns to promote waste reduction practices among students, staff, and faculty. Encourage the use of reusable items and discourage single-use plastics.

#### 8.4.7 Establish a Waste Management Committee

Form a waste management committee to oversee and coordinate waste management activities on campus. The committee should be responsible for implementing waste management policies, conducting audits, and organizing awareness programs.

#### 8.4.8 Collaborate with Waste Management Vendors

Partner with certified waste management vendors to ensure the responsible disposal and recycling of waste. Regularly review vendor practices to ensure compliance with environmental standards.

#### 8.4.9 Develop a Waste Management Policy

Create a comprehensive waste management policy that outlines procedures for waste segregation, disposal, and recycling. Ensure the policy is communicated to all campus members and included in orientation programs for new students and staff.

#### 8.4.10 Educational Workshops and Training

Organize workshops and training sessions on waste management and sustainability practices for students, staff, and faculty. These sessions should cover topics such as composting, recycling, and hazardous waste management.

#### 8.4.11 Monitor and Report Progress

Implement a system to monitor and report on waste management activities and progress. Regularly update the campus community on achievements and areas for improvement to maintain engagement and accountability

# **ENERGY AUDIT**

#### 9 ENERGY AUDIT

# 9.1 Observations of energy utilization

The energy management practices at the Abhijit Kadam Institute of Management and Social Sciences (AKIMSS) demonstrate a commendable commitment to sustainability through the adoption of renewable energy sources and energy-efficient systems. The institute has installed solar panels that significantly contribute to its energy needs. The Department of Management Studies generates approximately 65,850 units of energy annually from solar power, substantially reducing the dependency on non-renewable energy sources and lowering the campus's carbon footprint. Additionally, the Department of Computer Applications produces around 24,767 units of energy from solar power annually. However, it was observed that the Department of Social Work Studies does not currently utilize solar energy, indicating a potential area for improvement.

The Maharashtra State Electricity Board (MSEB) provides the Management Studies department with an overall energy consumption of about 6,134 units per year, highlighting the significant role of solar energy in meeting the department's energy requirements. Energy-efficient lighting systems and appliances are utilized across the campus, further contributing to energy conservation efforts.

Despite these positive steps, there is a need for more systematic and regular energy audits to ensure all departments optimize their energy use. The audits will help identify additional opportunities for energy savings and ensure that the benefits of renewable energy are maximized across the entire campus.

Table 4: Energy Usage in the Campus

| Name of                                   | Energy from solar (in unit) | Total unit composition /   |  |  |  |
|---|-----------------------------|----------------------------|--|--|--|
| the Department                            |                             | Yearly (KWh) from MSEB     |  |  |  |
| Management Studies                        | 65850                       | 6134 unit/80.00 KW = 76.67 |  |  |  |
| Computer Applications Social Work Studies | 24767                       | 0/20.00 KW = 00            |  |  |  |



Plate 5: Solar Panel Installation

# 9.2 9.2 Opportunities for Energy Efficiency

#### 9.2.1 Expand Solar Energy Use

Install solar panels in the Department of Social Work Studies and other areas not currently utilizing solar energy to increase the overall contribution of renewable energy.

#### 9.2.2 Regular Energy Audits

Conduct systematic and regular energy audits across all departments to identify inefficiencies and opportunities for further energy conservation.

#### 9.2.3 Increase Energy Efficiency

Upgrade to more energy-efficient appliances and lighting systems where possible. Implement smart energy management systems to monitor and optimize energy usage in real-time.

#### 9.2.4 Awareness Programs

Organize awareness programs and workshops for students, staff, and faculty to promote energy-saving practices and the benefits of renewable energy.

#### 9.2.5 Monitoring and Reporting

Establish a robust monitoring and reporting system to track energy consumption and savings achieved through various initiatives. This will help in making informed decisions and setting future targets.

#### 9.2.6 Incentive Programs

Introduce incentive programs for departments and individuals who achieve significant energy savings, encouraging broader participation in energy conservation efforts.

By implementing these identified opportunities, AKIMSS can further enhance its energy management practices, reduce its environmental impact, and serve as a model for other institutions striving for sustainability.

#### 10 Conclusion

The Green Audit of Abhijit Kadam Institute of Management and Social Sciences (AKIMSS), Solapur, reveals a commendable commitment to sustainability and environmental stewardship across various domains of campus operations. The audit highlights significant efforts in tree plantation, energy management, water conservation, waste management, environmental awareness, and community engagement. AKIMSS has established a solid foundation for sustainable practices and environmental management. By addressing the identified opportunities provided in this report, the institute can continue to build on its successes, fostering a more sustainable and environmentally responsible campus. The commitment of the entire campus community will be pivotal in driving these initiatives forward and setting a benchmark for other educational institutions.

The campus has successfully implemented exemplary waste management practices, including efficient segregation, recycling, and disposal systems. Its water management strategies, such as rainwater harvesting and detailed usage monitoring, demonstrate a strong commitment to conserving water resources. Utilizing solar energy and energy-efficient appliances underscores the campus's dedication to reducing its carbon footprint and promoting renewable energy.

Community engagement activities, including environmental awareness programs and workshops, extend the campus's sustainability efforts beyond its boundaries, fostering a culture of environmental responsibility. The involvement of vendors and local stakeholders further enhances the campus's comprehensive approach to sustainability.

In conclusion, Bharati Vidyapeeth (Deemed to be University), Solapur Campus, has significantly promoted environmental sustainability. The campus's proactive approach and adherence to regulatory compliance set a benchmark for other institutions. By continuing to enhance these practices and implementing the identified opportunities, the campus can further solidify its role as a model for environmental stewardship and sustainability