Best Practice – I

Title of the Practice – "Save Nature to Sustain Life"

The Objectives

1. **Promoting Environmental Awareness:**

   - To organize workshops, seminars, and awareness campaigns to educate the university community about the interconnectedness of nature and human life.
   - To collaborate with environmental organizations to host events, guest lectures, and documentary screenings highlighting environmental issues and solutions.

2. **Biodiversity Conservation:**

   - To conduct biodiversity surveys to identify and catalog plant and animal species on the campus.
   - To implement habitat restoration projects to create or enhance ecosystems conducive to local flora and fauna.
   - To establish protected areas and wildlife corridors to safeguard biodiversity and promote ecological resilience.

3. **Resource Conservation:**

   - To implement water conservation measures such as installing low-flow fixtures, rainwater harvesting systems, and drought-resistant landscaping.
   - To introduce energy-saving initiatives like LED lighting upgrades, HVAC system optimization, and renewable energy installations.
   - To adopt sustainable land management practices to minimize soil erosion, preserve natural habitats, and optimize land use.

4. **Waste Reduction and Recycling:**

   - To implement a comprehensive waste management program encompassing waste reduction strategies, source separation, and recycling facilities.
   - To provide education and training to promote waste minimization, reuse, composting, and proper disposal practices.
   - To establish partnerships with local recycling centres and waste management agencies to ensure effective recycling and waste diversion.

5. **Green Infrastructure Development:**

   - To design and implement green infrastructure projects such as green roofs, permeable pavements, and bioswales to manage stormwater runoff and improve urban biodiversity.

- To develop campus green spaces, botanical gardens, and arboretums to enhance biodiversity, provide ecosystem services, and promote outdoor recreation and education.

6. **Education and Research:**
   - To integrate environmental sustainability into academic programs across disciplines, offering courses, research opportunities, and hands-on experiences related to conservation and ecological stewardship.
   - To facilitate interdisciplinary research collaborations addressing pressing environmental challenges and developing innovative solutions for sustainable development.
   - To support student-led initiatives, research projects, and community outreach efforts focused on environmental conservation and sustainability.

7. **Community Engagement:**
   - To foster partnerships with local communities, government agencies, NGOs, and businesses to collaborate on environmental conservation projects and initiatives.
   - To engage community members in participatory decision-making processes, inviting input and feedback on environmental policies, programs, and projects.
   - To organize volunteer opportunities, service-learning projects, and outreach events to involve community members in hands-on conservation activities and environmental stewardship.

8. **Policy Advocacy:**
   - To advocate for the adoption of environmentally friendly policies and practices within the university, advocating for sustainability principles to be integrated into institutional policies, strategic plans, and governance structures.
   - To participate in advocacy campaigns at the local, regional, and national levels, lobbying for stronger environmental regulations, incentives for sustainable practices, and support for conservation initiatives.

9. **Carbon Footprint Reduction:**
   - To conduct a greenhouse gas inventory to assess the university's carbon footprint and identify key emission sources.
   - To develop and implement a carbon reduction strategy encompassing energy efficiency measures, renewable energy adoption, transportation management, and carbon offset projects.
   - To engage the university community in carbon reduction efforts through awareness campaigns, behaviour change initiatives, and incentives for sustainable transportation options and energy conservation.

10. **Monitoring and Evaluation:**
    - To establish key performance indicators (KPIs) and metrics to track progress towards sustainability goals and objectives.

- To implement monitoring and evaluation mechanisms to assess the effectiveness of conservation initiatives, identify areas for improvement, and measure the impact of interventions on biodiversity, resource conservation, waste reduction, and carbon footprint reduction.
- To use feedback from stakeholders, data analysis, and periodic evaluations to inform decision-making, prioritize actions, and continuously improve best practices for environmental conservation and sustainability.

The Context

1. The imperative to safeguard nature and promote environmental sustainability has become increasingly urgent in the face of escalating global environmental challenges such as climate change, biodiversity loss, and ecosystem degradation. As an institution of higher learning, our university recognizes its responsibility to contribute meaningfully to addressing these pressing issues and nurturing a sustainable future for current and future generations.

2. Our campus, nestled within a diverse ecological landscape, serves as both a microcosm of natural beauty and a nexus of human activity. However, rapid urbanization, population growth, and unsustainable development practices have exerted significant pressures on local ecosystems, threatening biodiversity, degrading habitats, and compromising the resilience of natural systems.

3. Against this backdrop, the 'Save Nature to Sustain Life' initiative emerges as a timely and imperative response to the environmental challenges confronting our university community and broader society. By championing the conservation and restoration of nature, this initiative seeks to foster a culture of environmental stewardship, promote sustainable living practices, and empower individuals to become agents of positive change.

4. Moreover, the 'Save Nature to Sustain Life' initiative aligns with our university's mission and values, which prioritize environmental sustainability, social responsibility, and the pursuit of knowledge for the betterment of society. By integrating principles of conservation and sustainability into our institutional ethos and operations, we endeavour to lead by example, inspire action, and cultivate a campus culture that reveres and protects the natural world.

5. In light of the interconnectedness between human well-being and ecological health, the 'Save Nature to Sustain Life' initiative underscores our commitment to fostering a harmonious relationship between humanity and nature, recognizing that the preservation of biodiversity and the integrity of ecosystems is fundamental to the continued existence and prosperity of all life on Earth.

Our Practices

To implement the "Save Nature to Sustain Life" best practice initiative effectively, a range of practices spanning various aspects of university operations, education, and community engagement can be adopted. Here are some examples of initiatives taken by the University for the ground-level Implementation of this best practice:

1. **Campus Greening and Biodiversity Enhancement:**
   - Established green spaces, gardens, and wildlife habitats on campus to promote biodiversity and provide refuge for native flora and fauna.
   - Incorporated native plant species into landscaping projects to support local ecosystems and reduce water consumption.
   - Implemented sustainable land management practices, such as organic gardening and natural pest control, to maintain ecological balance.

2. **Resource Conservation and Efficiency Measures:**
   - Conducted energy audits to identify opportunities for energy conservation and efficiency improvements in university buildings and facilities.
   - Installed energy-efficient lighting, heating, and cooling systems, as well as renewable energy technologies such as solar panels and wind turbines, to reduce carbon emissions and reliance on fossil fuels.
   - Implemented water conservation strategies, such as installing low-flow fixtures, rainwater harvesting systems, and drought-tolerant landscaping, to minimize water usage and preserve freshwater resources.

3. **Waste Reduction and Recycling Programs:**
   - Established comprehensive waste management programs that prioritize waste reduction, recycling, and composting.
   - Provided recycling bins and composting facilities across campus, along with educational outreach to promote proper waste sorting and disposal practices.
   - Implemented initiatives to reduce single-use plastics, such as banning plastic water bottles and implementing reusable alternatives.

4. **Environmental Education and Outreach:**
   - Integrated environmental sustainability into the university curriculum across disciplines, offering courses, seminars, and workshops on topics such as ecology, conservation biology, and sustainable development.
   - Organized environmental awareness campaigns, Earth Day celebrations, and sustainability-themed events to engage students, faculty, staff, and the broader community in environmental stewardship.

- Established student-led environmental clubs and organizations to empower students to take action on environmental issues and lead sustainability initiatives on campus.

5. **Research and Innovation for Sustainability:**
   - Supported interdisciplinary research projects and collaborations focused on environmental conservation, renewable energy, climate change mitigation, and sustainable development.
   - Created research funding opportunities and scholarships for students researching environmental topics, fostering innovation and creativity in sustainability.
   - Established partnerships with industry, government agencies, and non-profit organizations to leverage resources and expertise for addressing complex environmental challenges.

6. **Policy Development and Advocacy:**
   - Developed and implemented environmental sustainability policies and guidelines that govern university operations, procurement practices, and campus development projects.
   - Advocated for environmentally-friendly policies and practices at the local, regional, and national levels, engaging with policymakers, advocacy groups, and other stakeholders to advance sustainability goals.
   - Participated in sustainability-focused initiatives and networks, such as the Association for the Advancement of Sustainability in Higher Education (AASHE) or the United Nations Sustainable Development Goals (SDGs), to exchange best practices and collaborate on collective action.

7. **Community Engagement and Partnerships:**
   - Forged partnerships with local communities, environmental organizations, government agencies, and businesses to collaborate on environmental conservation projects and initiatives.
   - Engaged community members through volunteer opportunities, service-learning projects, and outreach events that promote environmental awareness and action.
   - Established community-based conservation initiatives, such as habitat restoration projects, tree planting campaigns, and environmental monitoring programs, to involve residents in preserving and protecting natural resources.

By implementing these practices and fostering a culture of environmental stewardship, Swami Vivekanand Subharti University plays a pivotal role in advancing sustainability and contributing to the preservation of nature for present and future generations.

Evidence of Success

Rapid industrialization and globalization have resulted in a number of environmental concerns that affect ecosystems worldwide. Unfavorable natural changes are causing problems for all organisms. As a result, we must preserve the natural environmental quality by implementing environmentally friendly practices and treating Mother Earth with the love and respect that she deserves.

Swami Vivekanand Subharti University always aims to protect and improve the environment as a valuable asset to provide a clean, healthy, and well-protected environment to all employees and students. To achieve this, our university has projected a vision to engage the youth in environmental protection which would create direct and indirect impacts on changing youth behavior and attitude towards sustainable conservation of the existing natural resources.

At Swami Vivekanand Subharti University we have always been vigilant towards our duties towards Mother Nature. We have started numerous projects towards a 'Greener India' in alignment with 'National Objectives' and initiated many steps to 'awaken' our youth towards their duty towards the environment.

The 'Subhartian' student is encouraged to make their homes, and institutes environment friendly by adopting environmentally friendly practices, recycling different materials as well as preserving resources such as water and electricity.

The students are encouraged to ditch paper use & adopt the digital platform, save water & electricity, buy recyclable bags, recycle books and buy eco-friendly supplies, and so on.

The following initiatives have been taken up for improvement of the surrounding environment.

1. Paperless Reforms
2. Battery operated Vehicles
3. Solar Power
4. Sensor-based lights
5. Reclaiming the waste
6. Segregate and recycle
7. Awareness, Encouragement, and Involvement
8. Car-free day (Every Tuesday and Wednesday)

1) **Paperless Reforms:** "Paperless" generally refers to the transition from traditional paper-based systems to digital or electronic alternatives. This shift aims to reduce reliance on physical paper, streamline processes, and increase efficiency.

a. More than 200 million trees are cut down daily to make paper. This means that a tree is cut down every 2.5 seconds. With the aim to make the university on paperless functioning system our in-houseIT cell has made several modules of ERP such that most of the functioning of t h e university happens from, 'computer to computer'.

Subharti app on app store and onscreen after intallation

b. 'KIOSKs' are installed from which the students can check their profiles and are encouraged to make online entries, online queries, online payments etc. We have launched a **'Subharti App'** to further strengthen our initiative.

c. There are places where paper is needed. Then use of rough or single side used paper is encouraged. Students are encouraged to take prints on both sides to utilize every bit ofthe paper they are using.

(STUDENT USING THE 'KIOSK')

2) **Battery Operated Vehicles**:

Another contribution towards environmental protection is to minimize the pollution created as a result of several activities. In the same league, we encourage the use of battery-operated vehicles. The university is using battery-operated rickshaws, scooters, and carts for in campus transport. Our students are also encouraged to build and use the same.

a. **E Cycle:** An E-cycle made by our student of Subharti Institute of Engineering is successfully made and is even in production. The e-cycle assists the rider's pedal-power and uses rechargeable batteries. It has a top speed of 25 km/h. E-bikes act as a source of exercise and also allow the rider to take short breaks from pedalling. The University intends to make this a part of cardiac rehabilitation programs, as a study has shown that it can reduce deaths in people with coronary heart disease by around 27%.

<u>News on the E-Cycle made by our student</u>

b. **Twin Bicycle:** John F Kennedy very aptly said "Nothing compares to the simple pleasure of riding a bicycle" and what makes it more pleasurable is when you have someone to ride with you. The twin bicycle has been designed by Dr. Krishna Murty, an illustrious student of Subharti Medical College and the design has been industrially designed too (Reg No. 306717). The twin cycle is available for use both for the residents and non-residents of the campus within the campus. In the twin cycle, campus residents have started enjoying evening rides rather than taking any other form of transportation. The residents can take the cycles from the designated parking places and can leave them at other

dedicated parking spaces. The concept has gained popularity just like carpooling;the residents prefer cycle pooling.

c. **Garbage Van:** The garbage van of the University was made by the students of mechanical engineering department to be fully mechanized and electrically driven. The University's all garbage is collected and thrown in the designated place with the help of this van.

The Launch of Garbage van

3) **Solar Power:**

The University has been slowly getting solar electricity panels, solar heaters etc. installed. Meanwhile our students took inspiration and built;

a. **Solar Rickshaw:** Another variant of the e-Rickshaw which has been designed by the students of Subharti Technical Campus is solar-powered e Rickshaw that is fitted with solar panels. It is directly solar-powered, driven solely by electric motors, powered by solar panels mounted on the vehicle and capable of operating while the vehicle is in motion. The solar panels provide power directly to the motor without the need for batteries. These solar panel fitted rickshaws are used exclusively for the waste disposal. Currently two solar rickshaws are plying in the campus and the efforts are on to redesign the same as it looks bulkier in its present state.

b. **Solar based water purifier:** Solar water purifier has been designed by the students of Subharti Technical campus and has been installed near the Vice Chancellor office. The water is purified based on solar radiation treatment and water distillation with additional use of solar heating. The system consists of three main components: the solar energy collector, the solar distillation system and the solar water disinfection system. The solar energy collector collects solar radiations and converts it into thermal energy for the solar distillation process. Solar water disinfection system takes low turbidity,

micro-biologically contaminated water and disinfects it to drinkable water with utilization of solar radiation. The main advantages associated with are Free of charge sun energy and it is reliable and almost maintenance free. However, it has low production capacity so the students are working on increasing the same.

4. **Sensor Based Lights:**

   Our students committed towards adopting the newer means of energy conservation and a firm belief that every unit of energy saved can be utilized in the future. The students of Subharti Institute of Technology and Engineering have been instrumental in installing the electronic motion detector-based sensor lights at 125 different locations in the University campus. Motion detectors are being used in activating street lights as well as indoor lights in walkways, lobbies and staircases. Due to these lighting systems, energy is conserved by only powering the lights for the duration of a timer, after which the person has presumably left the area.

5. **Achievement due to implementation of solar plant**

   By installing a 2 MW solar power plant on campus, we are able to lower the amount of coal burned and the corresponding 700 tons of CO_2 emissions released into the atmosphere. We are nevertheless able to cut down on the removal of roughly 100,000 trees. By doing this, we are attempting to meet sustainable goals and contribute to environmental protection.

Carbon Dioxide reduced (in tons)	776.22
Standard Coal saved (in tons)	776.22
Deforestation reduced (in number of trees)	106733.6

6. **Reclaiming the Waste:**

   Our multitalented founder who has started a blog of her own called 'busy bee' (https://subharti.org/blog/category/busybee/) has inspired many of our students to do the same. Our students from the Faculty of fine arts, department of interior design, have been making several sculptures and art items from 'scrap'. This not only redefines creativity but also reduces the waste created. Some examples for such are Lamp Shades from waste, Cartoon characters from discarded newspapers; waste carrying man sculpture and many more.

<u>SCULPTURES AND ART PIECES MADE FROM SCRAP</u>

7. **Segregate and Recycle:**

    The University initiates, encourages and ensures the segregation of waste along with it its adequate disposal. Along with it we involve our students to become participants in recycling the green waste into compost.

(DUSTBINS FOR RESIDENTS)   (FOR SEGREGATION OF WASTE)   BIO FERTILIZER PROGRAMME (BIOCOMPOST, VERMICOMPOST)

a. **Bio compost:** The University has 3 pits for utilizing the green waste and making it into bio compost.

b. **Vermi-compost:** The University has defined an area for making vermicompost.

In both the projects the students of Faculty of Science, department of agriculture are made to participate to help them learn and also inspire them to do it at homes, spread its awareness.

8. **Encouragement, Awareness, and Involvement:**

   a. All days like 'Environment Day' 'Plantation Day' are celebrated, our students are encouraged to plant saplings, donate trees to encourage them to realize the importance of nature.

b. The University gifts planters on all events, and gets students to prevent plucking of flowers, and encourage growing of plants.

c. Students are involved in '*nukkadnatak*', 'poster competition' etc., on such themes toencourage their mindset towards encouraging 'Green India'

Welcome of guests with Saplings

d. Regular Blogs, Facebook campaigns for using environment friendly things, like 'own cloth bags' instead of plastic ones, carry own bottles instead of using plastic bottles, not using single time plastic etc..

Few snapshots of blog

FEW MORE GLIMPSES

Subharti University: A message of environmental protection on World Car Free Day

(FACULTY SETS EXAMPLES FOR STUDENTS BY APAPTING WHAT THEY PREACH)

NUKKAD NATAKS

(PROJECTS MADE BY STUDENTS FOR ENVIRONMENT)

A plantation drive of planting 547 trees, each on the name of each soldier who gave the country his life – in his memory, to make his memory unforgettable! The families of the Martyrs were called and honoured. Offered jobs (ifthey needed, education and support)

In addition to the activities outlined previously, the faculties of Swami Vivekanand Subharti University are actively engaged in implementing the following initiatives:

- At Swami Vivekanand Subharti University, we have adopted the innovative **Miyawaki Technique** of plantation to enhance our green cover. This technique involves planting densely packed native species in a small area to create a dense forest in a short span of time.

- As part of our commitment to environmental sustainability and fostering a sense of ownership among our faculty members, we have implemented a special tradition. Upon joining the university, each faculty member plants a tree, which becomes synonymous with their tenure and contribution to the institution. Additionally, on their birthdays, faculty members plant another tree, symbolizing growth, renewal, and their personal connection to nature.

- To ensure the effective maintenance and care of our green spaces, the university has divided its campus into designated zones, each allocated to different faculties. This zoning approach fosters a sense of responsibility and accountability among faculty members for the preservation and enhancement of the biodiversity and greenery within their respective zones. Faculty members are tasked with overseeing the maintenance of vegetation, biodiversity, and overall aesthetics of their allocated areas, contributing to a vibrant and sustainable campus environment.

- Through these initiatives, Swami Vivekanand Subharti University not only aims to increase its green cover but also cultivates a culture of environmental stewardship and community engagement among its faculty members, promoting a harmonious coexistence with nature on campus.

The Challenges

Promoting the best practice of "Save Nature to Sustain Life" within a university setting can be both crucial and challenging. While universities are often hubs of innovation and education, they also face unique obstacles when it comes to implementing sustainable practices. Here's a detailed exploration of the challenges such a best practice might encounter within the university:

1. **Limited Funding:** One of the primary challenges the Swami Vivekanand Subharti University face is securing adequate funding for sustainability initiatives. While there may be goodwill and interest in promoting environmental conservation, without financial resources, it can be challenging to implement meaningful programs. This limitation may hinder efforts to invest in renewable energy sources, green infrastructure, or educational campaigns.

2. **Resource Intensive Operations:** University is large institution with diverse operations ranging from classrooms to laboratories, residences, and hostel facilities etc. These operations can consume significant amounts of resources such as energy, water, and materials. Implementing sustainable practices across these diverse areas requires careful planning, investment, and cooperation from various stakeholders.

3. **Resistance to Change:** Resistance to change is a common challenge in any organization, including our university. Some faculty, staff, and students generally resistant to adopting sustainable practices due to inertia, scepticism, or concerns about inconvenience. Overcoming this resistance requires effective communication, education, and leadership to demonstrate the benefits of sustainability and address concerns.

4. **Lack of Coordination:** University is often decentralized organization with numerous departments, faculties, and administrative units. This decentralized structure can lead to siloed efforts and a lack of coordination in sustainability initiatives. Without effective coordination mechanisms in place, efforts to save nature and sustain life may lack coherence and impact.

5. **Complex Regulatory Environment:** University must comply with various regulations and policies related to environmental protection, health, and safety. Navigating this complex regulatory environment can be challenging, particularly when regulations are ambiguous or inconsistent. Compliance with regulations while simultaneously promoting sustainability requires careful planning and expertise.

6. **Limited Awareness and Education:** While university is centres of learning, there may be limited awareness and education about environmental issues and sustainability among faculty, staff, and students. Without adequate education and awareness-raising efforts, it can be challenging to garner support for sustainability initiatives and encourage behaviour change.

7. **Infrastructure Limitations:** Upgrading existing infrastructure to support sustainable practices can be costly and time-consuming. Older buildings may lack energy-efficient features, and retrofitting them to improve energy efficiency or incorporate renewable energy sources can require significant investment. Additionally, the availability of space for implementing green infrastructure such as green roofs or rain gardens may be limited on densely populated campuses.

8. **Engagement and Participation:** Achieving meaningful sustainability goals requires active engagement and participation from all members of the university community, including faculty, staff, students, and administrators. However, engaging diverse stakeholders with varying interests and priorities can be challenging.

9. **Measuring and Monitoring Progress:** Finally, measuring and monitoring progress towards sustainability goals is essential for accountability and continuous improvement. However, tracking metrics such as energy consumption, waste generation, and carbon emissions across a complex institution like a university can be daunting. Investing in robust data collection systems and establishing clear metrics for success is critical for evaluating the effectiveness of sustainability initiatives.

In conclusion, while promoting the best practice of "Save Nature to Sustain Life" within the university setting is vital for addressing environmental challenges, it is not without its challenges. Overcoming these challenges requires leadership, collaboration, innovation, and a commitment to sustainability across all levels of the institution. By addressing these challenges head-on, universities can play a significant role in protecting nature and ensuring a sustainable future for generations to come.