

OFFICE OF THE PRINCIPAL, NORTH GAUHATI COLLEGE

P. O. College Nagar, Guwahati-781031

অধ্যক্ষৰ কাৰ্যালয়,

ডাক : কলেজ নগৰ,



উত্তৰ গুৱাহাটী মহাবিদ্যালয়

গুৱাহাটী-৭৮১০৩১

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Date: 16-05-2024

<http://www.northgauhaticollege.in/bestpractices.php>

Two Best Practices of the institution (2023-2024)

BEST PRACTICE-1

1. Title of the Practice:

"MITIGATING CARBON FOOTPRINT: IMPLEMENTING MIYAWAKI FOREST PLANTATION FOR CO₂ REDUCTION IN COLLEGE CAMPUS ECOSYSTEMS"

2. Objectives of the Practice:

Choosing the Miyawaki forest plantation as a best practice in college offers a multifaceted learning experience, covering ecological restoration, biodiversity conservation, climate change mitigation, community engagement, and sustainable development.

- The primary objective is to enhance and promote biodiversity by planting a variety of native plant species in a small area. For Utilization of Organic Waste Resources
- Miyawaki Forests aim to restore ecosystems by mimicking the structure and composition of natural forests. This can be a valuable learning experience for students studying ecology, ecosystem dynamics, and environmental science.
- To contribute to climate change mitigation by sequestering carbon dioxide and releasing oxygen. The fast growth of plants in a Miyawaki Forest aids in capturing and storing carbon, emphasizing the role of forests in addressing climate change.
- Miyawaki Forests provide a practical and hands-on learning environment for students.
- In urban areas where space is limited, Miyawaki Forests serve as a method for urban greening. The objective is to create green spaces within cities, improving air quality, reducing the urban heat island effect, and enhancing the overall well-being of urban communities.
- Colleges may use Miyawaki Forests as living laboratories for research projects.

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- In addition to ecological benefits, Miyawaki Forests contribute to the aesthetic value of the campus. They create green spaces that can be used for recreational purposes, providing students and the community with a natural environment for relaxation and enjoyment.

3. The Context:

In a college setting, the adoption of Miyawaki forest plantation as a best practice encompasses diverse facets, spanning environmental, educational, and community dimensions. The Miyawaki method involves creating 3-4 layers of plants in terms of height and types within a 1 sq m area, achieving a dense plantation of various indigenous tree layers in as little as a 600 sq ft space. Notably, this technique requires minimal maintenance for saplings compared to conventional methods, enabling the planting of a greater number of trees in confined areas. The Miyawaki Technique, globally proven irrespective of soil and climate conditions, stands out as it is 10 times faster and 30 times denser than traditional plantation methods. This methodology contributes to the rapid restoration of biodiversity, aiding local ecosystem conservation and climate change mitigation. Through hands-on involvement, students gain valuable experiential learning, fostering interdisciplinary collaboration and a holistic understanding of ecological systems. Integrating Miyawaki forests into campus planning underscores a dedication to sustainability by repurposing small, unused plots for green spaces.

4. The Practice:

The Miyawaki Forest Plantation utilized 13,000 square feet of college land situated in front of the Science Building of the College Campus. The implementation involved the design and subsequent adherence to the following steps for practical application.

Step 1: Assessing Soil Characteristics and Quantifying Biomass

The initial step involves evaluating soil texture, crucial for understanding water retention, root penetration, and nutrient retention. Identify if the soil is sandy, loamy, or clayey. Introduce perforator materials, such as spongy and dry biomass like rice husk, wheat husk, corn husk, or groundnut shells, to enhance root growth. Water retainers like coco-peat or dry sugarcane stalks can boost moisture retention. Incorporate organic fertilizers, such as cow or goat manure, and mulching materials like rice straw or wheat straw.

Step 2: Selecting Tree Species for Plantation

A total no. of 74 variety of native tree species were selected. They were categorized based on type, height, and growth layer.

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Step 3: Designing the Forest

Creating a master plan, delineating the afforestation area, water pipeline layout, and project execution spaces was done. Planning for regular watering during the initial years and identifying storage areas for materials, saplings, and equipment was done.

Step 4: Preparing the Area

A site inspection was done, removing debris, weeds, and ensuring adequate sunlight. Installation of watering facilities and identifying mark mounds for the forest creation process was done.

Step 5: Planting the Trees

Perforator, water retainer, and fertilizer materials were mixed in the predetermined ratio. Preparing the ground by shaping a mound, incorporating biomass, and planting selected tree species was done. Support saplings with sticks and applying mulch for insulation.

Step 6: Caring for the Forest for Three Years

Monitoring and assessing the forest monthly for the first 8-12 months, recording survival rates and growth was done. Regular watering, weed-free conditions, and proper drainage was maintained. Chemical use was avoided and proper mulching was ensured to support for growing trees.

Step 7: Long-Term Maintenance

Monitoring and maintenance are to be done for at least three years, ensuring straight and healthy growth of trees. After that gradually reducing support stick reliance as trees mature. Cutting or pruning the forest is to be avoided and sustain mulching practices for ongoing soil health. Utilizing jute ropes to secure mulch for promoting long-term sustainability.

5. Evidence of Success:

The success of a Miyawaki Forest plantation within the first year can be evaluated through several observable indicators. Here are key pieces of evidence that demonstrate the effectiveness of a Miyawaki Forest during its initial year:

Rapid Growth and Height Increase:

Visible Growth: Within the first year, the saplings planted using the Miyawaki method should exhibit noticeable growth in terms of both height and overall size. Regular monitoring and measurement of the plants' height can provide evidence of their rapid development.

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Early Canopy Formation:

Canopy Development: While a full canopy may take several years, signs of early canopy formation can be evident within the first year. The upper layers of the plants should start interweaving, creating a dense cover that contributes to the overall health of the ecosystem.

Weed Suppression:

Minimal Weed Growth: One of the advantages of Miyawaki forests is their ability to naturally suppress weed growth. In the first year, evidence of minimal weed intrusion indicates the success of the method in creating a competitive environment for unwanted vegetation.

Biodiversity Establishment:

Variety of Species: A successful Miyawaki Forest would showcase a diverse array of plant species within the first year, occupying different layers of the ecosystem. The presence of various native species indicates the establishment of biodiversity in the early stages.

Soil Improvement:

Organic Matter Accumulation: Fallen leaves and natural decomposition contribute to the accumulation of organic matter in the soil. Evidence of improved soil health, such as increased organic content, indicates the positive impact of the Miyawaki Forest in its first year.



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6. Problems Encountered and Resources Required:

Essential resources include suitable land for planting, diverse native plant species, perforator materials (like husks or shells), water retainers (such as coco-peat), organic fertilizers (cow or goat manure), mulching materials (like straw), watering infrastructure, and educational resources. Expertise development through training programs, community engagement initiatives, and monitoring tools are crucial. Adequate funding, external partnerships, and grants are necessary to alleviate initial cost constraints. Combining these resources can ensure a successful Miyawaki Forest plantation in a college environment.

Due to our college's collaboration with Bajaj Consumer Care Ltd. and Young Indians (Guwahati Branch), we have not encountered any issues or constraints thus far. Furthermore, they have also supplied labourers for the maintenance of the forest.

Principal
North Gauhati College

(Dr. Bhaskar Jyoti Hazarika)
Principal
North Gauhati College

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BEST PRACTICE-2

1. Title of the practice:

**“EMPOWERING COMMUNITIES THROUGH
ADOPTED VILLAGE INITIATIVES”**

2. Objectives of the Practice:

- To promote sustainable development and empower local communities.
- To provide students with practical experience, exposing them to real-world societal challenges.
- To make a positive contribution to the socio-economic well-being of the adopted village.
- To contribute positively to the environmental well-being of the adopted village.
- To have a holistic impact on the adopted community, addressing both social and environmental aspects.
- To foster the well-being of the adopted village in various dimensions, creating a symbiotic relationship between the academic institution and the community.

3. The Context:

In contemporary education, numerous colleges acknowledge the imperative for a holistic learning experience extending beyond conventional classroom boundaries. The adoption of a village emerges as a tangible and pragmatic avenue for students to translate theoretical knowledge into real-world applications. This initiative not only facilitates a dynamic learning environment but also serves as a manifestation of colleges actively embracing their social responsibility. By engaging in the adoption of marginalized or underserved communities, colleges can play a pivotal role in community development. This approach transcends theoretical discourse, offering students a firsthand understanding of societal complexities and challenges. The practical platform afforded by adopting a village reinforces the college's commitment to cultivating socially responsible individuals equipped to address real-

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world issues, thereby bridging the gap between academic learning and practical, community-oriented application.

4. The Practice:

The adopted village practice involves forming a collaborative partnership between the college and the local community.

Name of the Adopted Villages:

- I. Barbaka
- II. Sarubaka
- III. Rajaali
- IV. Manik Nagar
- V. Bar Nijarapar

Key components of this practice include:

- Conducting needs assessments to identify the specific requirements of the community.
- Developing and implementing sustainable projects in areas such as education, healthcare, sanitation, and skill development.
- Involving students in the planning, execution, and evaluation of projects to enhance their leadership and problem-solving skills.
- Establishing regular communication channels between the college and the village to ensure ongoing support and adaptability to changing needs.
- Involvement of the NSS Unit of North Gauhati in various activities of the villages.

5. Evidence of Success: Success in adopted village initiatives can be measured through various metrics, including:

- Improved literacy rates or educational outcomes.
- Enhanced healthcare access and improved health indicators.
- Increased economic opportunities for the community through skill development and entrepreneurship.

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- Positive environmental impact, such as improved waste management or conservation efforts.
- Community testimonials and feedback showcasing the perceived benefits of the adopted village program.

6. Problems Encountered and Resources Required:

While adopted village initiatives are commendable, challenges may arise, including:

- Resistance or skepticism from the local community.
- Limited resources, both financial and human.
- Cultural differences that may affect the effectiveness of certain interventions.
- To overcome these challenges, colleges need to allocate dedicated resources, build strong community partnerships, and implement thorough training programs for students and faculty involved in the initiatives.

Principal

North Gauhati College

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