

Green & Environment Audit Report Of Government Women's College Sambalpur



SUBMITTED BY
GREEN AUDIT COMMITTEE





INTRODUCTION:

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of various establishments. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. The green audit of Govt Women's College aims to analyse environmental practices within and outside the college campus, which will have an impact on the eco-friendly atmosphere. Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan.

Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade a, Grade B or Grade C according to the scores assigned at the time of accreditation. The intention of organizing Green Audit is to upgrade the environment condition in and around the institutes, colleges, companies and other organizations. It is carried out with the aid of performing tasks like waste management, energy saving and others to turn into a better environmental friendly institute.

Scope and Goals of Green Auditing

A clean and healthy environment aids effective learning and provides a conducive learning environment. Green Audit is the most efficient and ecological way to manage environmental problems. It is a kind of professional care which is the responsibility of each individual who are the part of economical, financial, social, environmental factor. It is necessary for our college to conduct green audit on campus to make students aware of the academic environment. Thus Green audit becomes necessary at the college level.

A very simple indigenized system has been devised to monitor the environmental performance of Govt. Women's College, Sambalpur. It comes with a series of questions to be answered on a regular basis. This innovative scheme is user friendly and totally voluntary. The aim of this is to help the institution to set environmental examples for the community, and to educate the young learners.

OBJECTIVES OF GREEN AUDIT

The main aim objective of this green audit is to assess the environmental quality and the management strategies being implemented in Government Women's College, Sambalpur. The specific objectives are:

1. To assess the quality of the water and soil in the Govt. Women's college campus
2. To monitor the energy consumption pattern of the college
3. To quantify the liquid and solid waste generation and management plans in the campus.
4. To assess the carbon foot print of the college
5. To assess whether the measures implemented by Alphonso College have helped to reduce the Carbon Footprint.
6. To impart environment management plans to the college
7. Providing a database for corrective actions and future plans.
8. To assess whether extracurricular activities of the Institution support the collection, recovery, reuse and recycling of solid wastes.

METHODOLOGY:

The methodology adopted to conduct the Green Audit of the Institution had the following components

Onsite Visit

Four day field visit was conducted by the Green Audit Team. The key focus of the visit was on assessing the status of the green cover of the Institution, their waste management practices and energy conservation strategies etc.

Energy, waste management and carbon foot print analysis survey

With the help of teachers and students, the audit team has assessed the energy consumption pattern and waste generation, disposal and treatment facilities of the college. The monitoring was conducted with a detailed questionnaire survey method. In order to perform the green audit, methodology covered with various exercises such as preparation of campus geographical maps, physical inspection of the campus with help of student volunteers, observation and reviews of the documents, interviewing with various key persons such as estate maintenance officers, garden worker, teaching and non-teaching staffs and students, and data analysis, measurements and recommendations.

Target Areas of Green Auditing

Green audit forms part of a resource management process. Although they are individual events, the real value of green audits is the fact that they are carried out, at defined intervals, and their results can illustrate improvement or change over time. Eco-campus concept mainly focuses on the efficient use of energy and water; Minimize waste generation or pollution and also economic efficiency. All these indicators are assessed in process of "Green Auditing of educational institute". Eco-campus focuses on the reduction of contribution to emissions, procure a cost effective and secure supply of energy, encourage and enhance energy use conservation, promotes personal action, reduce the institute's energy and water consumption, reduce wastes to landfill, and integrate environmental considerations into all contracts and services considered to have significant

environmental impacts. Target areas included in this green auditing are water, energy, waste, green campus and carbon footprint.

Auditing for Water Management

Water is a natural resource; all living matters depend on water. While freely available in many natural environments, in human settlements potable (drinkable) water is less readily available. We need to use water wisely to ensure that drinkable water is available for all, now and in the future. A small drip from a leaky tap can waste more than 180 liters of water to a day; that is a lot of water to waste - enough to flush the toilet eight times! Aquifer depletion and water contamination are taking place at unprecedented rates. It is therefore essential that any environmentally responsible institution should examine its water use practices. Water auditing is conducted for the evaluation of facilities of raw water intake and determining the facilities for water treatment and reuse. The concerned auditor investigates the relevant method that can be adopted and implemented to balance the demand and supply of water. It is therefore essential that any environmentally responsible institution examine its water use practices.

Auditing for Waste Management

Pollution from waste is aesthetically displeasing and results in large amounts of litter in our communities which can cause health problems. Plastic bags and discarded ropes and strings can be very dangerous to birds and other animals. Unscientific landfills may contain harmful contaminants that leach into soil and water supplies, and produce greenhouse gases contributing to global climate change. Furthermore, solid waste often includes wasted material resources that could otherwise be channelled into better service through recycling, repair, and reuse. Thus the minimization of solid waste is essential to a sustainable college. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems. It is therefore essential that any environmentally responsible institution examine its waste processing practices.

Auditing for Green Campus Management

Newly planted and existing trees decrease the amount of carbon dioxide in the atmosphere. Trees play an important ecological role within the urban environment, as well as support improved public health and provide aesthetic benefits to cities. In one year, a single mature tree will absorb up to 48 pounds of carbon dioxide from the atmosphere, and release it as oxygen. The amount of oxygen that a single tree produces is enough to provide one day's supply of oxygen for people. So while you are busy studying and working on earning those good grades, all the trees on campus are also working hard to make the air cleaner for us. Trees on our campus impact our mental health as well; studies have shown that trees greatly reduce stress, which a huge deal is considering many students are under some amount of stress.



Commutation of stakeholders has an impact on the environment through the emission of greenhouse gases into the atmosphere consequent to burning of fossil fuels (such as petrol). The most common greenhouse gases are carbon dioxide, water vapour, methane, nitrous oxide and ozone. An important aspect of doing an audit is to be able to measure your impact so that we can determine better ways to manage the impact. In addition to the water, waste, energy and biodiversity audits we can also determine what our carbon footprint is, based on the amount of carbon emissions created. One aspect is to consider the distance and method travelled between home and college every day.

Tree Plantation

Tree-planting is the process of transplanting tree seedlings, generally for forestry, land reclamation, or landscaping purpose. It differs from the transplantation of larger trees in arboriculture, and from the lower cost but slower and less reliable distribution of tree seeds. In silviculture the activity is known as reforestation, or afforestation, depending on whether the area being planted has or has not recently been forested. It involves planting seedlings over an area of land where the forest has been harvested or damaged by fire, disease or human activity. Tree planting is carried out in many different parts of the world, and strategies may differ widely across nations and regions and among individual reforestation companies.

Temperature

The existing large trees in the college campus almost having dense canopy which reduces the local atmospheric temperature upto 7° Centigrade which is well experience by the local people and the passengers passing through the road in front of the college.

Scope for Improvement:

Liquid Waste Management

The proper disposal of liquid waste is a must in order to maintain a good human and animal health. Because liquid waste has a high amount of dangerous compounds such as salts and metals, it is important for companies to get rid of it in a timely manner.

Present Condition

There is an improvement opportunity for college. Sewage treatment facility can be provided to re-use the waste water for applications other than drinking. It is recommended that to make standard operating procedure (SOP) for disposal of chemicals which has been used in laboratories for practical purpose.

Laboratory waste bins and controlled waste

All waste suitable for the Local Authority refuse collection, except recyclable paper and glass, is termed 'controlled waste'. Items in this category which includes dirty paper, plastic, rubber and wood, should generally be placed in the waste bins available in each laboratory and will be collected by the cleaners. However, each laboratory must also have a container for certain items which are not allowed to be put in the normal waste bins. In this special controlled waste container should be put:- all broken laboratory glassware, any sharp objects of metal or glass, all fine powders (preferably inside a bottle or jar) and dirty sample tubes or other items lightly contaminated with chemicals (but not any syringes or needles).



E-Waste Management

Electronic waste or e-waste describes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling, or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution. Electronic scrap components, such as CPUs, contain potentially harmful components such as lead, cadmium, beryllium, or brominated flame retardants. Recycling and disposal of e-waste may involve significant risk to health of workers and communities in developed countries and great care must be taken to avoid unsafe exposure in recycling operations and leaking of materials such as heavy metals from landfills and incinerator ashes. College need to have E-waste management policy and all the E-waste disposals generated in the college campus should be disposed/ reuse as per standard procedures/norms.

Waste management Practices adopted by the college

For the last few years, college is following zero organic waste protocol throughout the campus. Vegetable waste and other leaf litters were used to feed in the vermi-compost pit and the resulting vermicompost is used as manure in the garden. The chemicals from the laboratories are disposed in a sealed tank along with water, so that the chemicals undergo neutralization with the water.

Rain Water Harvesting

There is a good potential for rain water harvesting in a college. This water can be used for purposes like gardening, bores, wells; etc. Feasibility study can be carried out to know the actual potential from rain water harvesting Project.

Plastic Free and Paper Free Campus

Concept of plastic free and paper free campus can be successfully implemented in the college. Management need to take initiative to make the policy for same. It will help to do reduce the use of plastic and papers which will be a good contribution towards sustainable environment.

Routine Green Practices

Every year college celebrates World Environment Day, World Forest Day, Van Mohatsava Week, Wild Life Week, World Water Day and Ozone Day in the campus. The main focus of these programmes was to provide awareness to the students about the importance of the environment. The programmes are conducted through seminars, poster presentation, quiz competition, debates etc.

Consolidation of Audit Findings

By participating in this green auditing procedure students have gained knowledge about the need of sustainability of the college campus. It will create awareness on the use of the Earth's resources in their home, college, local community and beyond.

Major Audit Observations

The environmental awareness initiatives are substantial.
There is Green policy/ environmental policy statement indicating the commitment of the college towards its environmental performance.
Gardens inside the college premises are found well maintained.
Use of notice boards and signs adequate to reduce over exploitation of natural resources.



Programs on green initiatives are adequate. Campus is declared plastic free, stringent actions should be taken to maintain this.

Rain water harvesting systems, solar power generation, environmental education programs have to be strengthened.

Common Recommendations

- ❖ Adopt an environmental policy for the college
- ❖ Establish a purchase policy for environmental friendly materials
- ❖ Introduce UGC Environmental Science course to all students
- ❖ Conduct more seminars and group discussions on environmental education
- ❖ Students and staff can be permitted to solve local environmental problems
- ❖ Renovation of cooking system in the canteen to save gas
- ❖ Establish water, waste and energy management systems

Criteria Wise Recommendations

Water

Remove damaged taps and install sensitive taps is possible. Drip irrigation for gardens and vegetable cultivation can be initiated. Establish rain water harvesting systems for each building. Awareness programs on water conservation to be conducted. Install display boards to control over exploitation of water.

Waste

Establish a functional bio gas plant.

A model solid waste treatment system to be established.

Practice of waste segregation to be initiated.

A model Vermicomposting plant to be set up in the college campus.

Establish a plastic free campus.

Avoid paper plates and cups for all functions in the college.

Green Campus

All trees in the campus should be named scientifically.

Create more space for planting.

Grow potted plants at both verandah and class rooms.

Conducting competitions among departments for making students more interested in making the campus green.

Follow Up and Action Plans

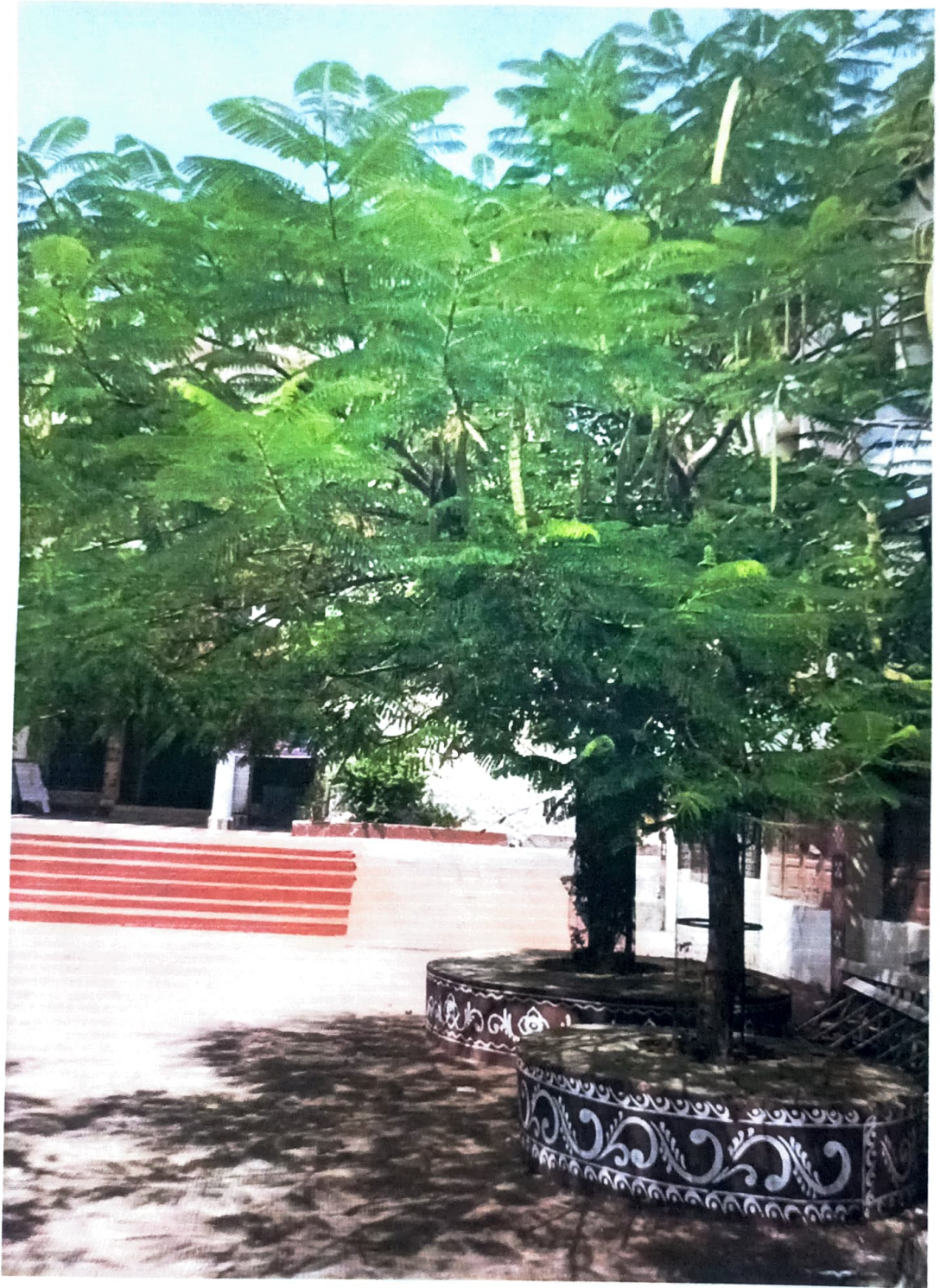
Green audits form a part of an on-going process. Innovative green initiatives have to be designed and implemented every year to make the college environmentally sustainable.

Follow up programs of green auditing recommendations should be done meticulously before the next audit.

Acknowledgements: -

We are thankful to the Management and the Principal of the Govt. Women's College, Sambalpur for entrusting processes of Green auditing with us. We thank all the participants of the auditing team especially students, faculty and non-teaching staff who took pain along with us to gather data through survey. We also thank the office staff who helped us during the document verification.





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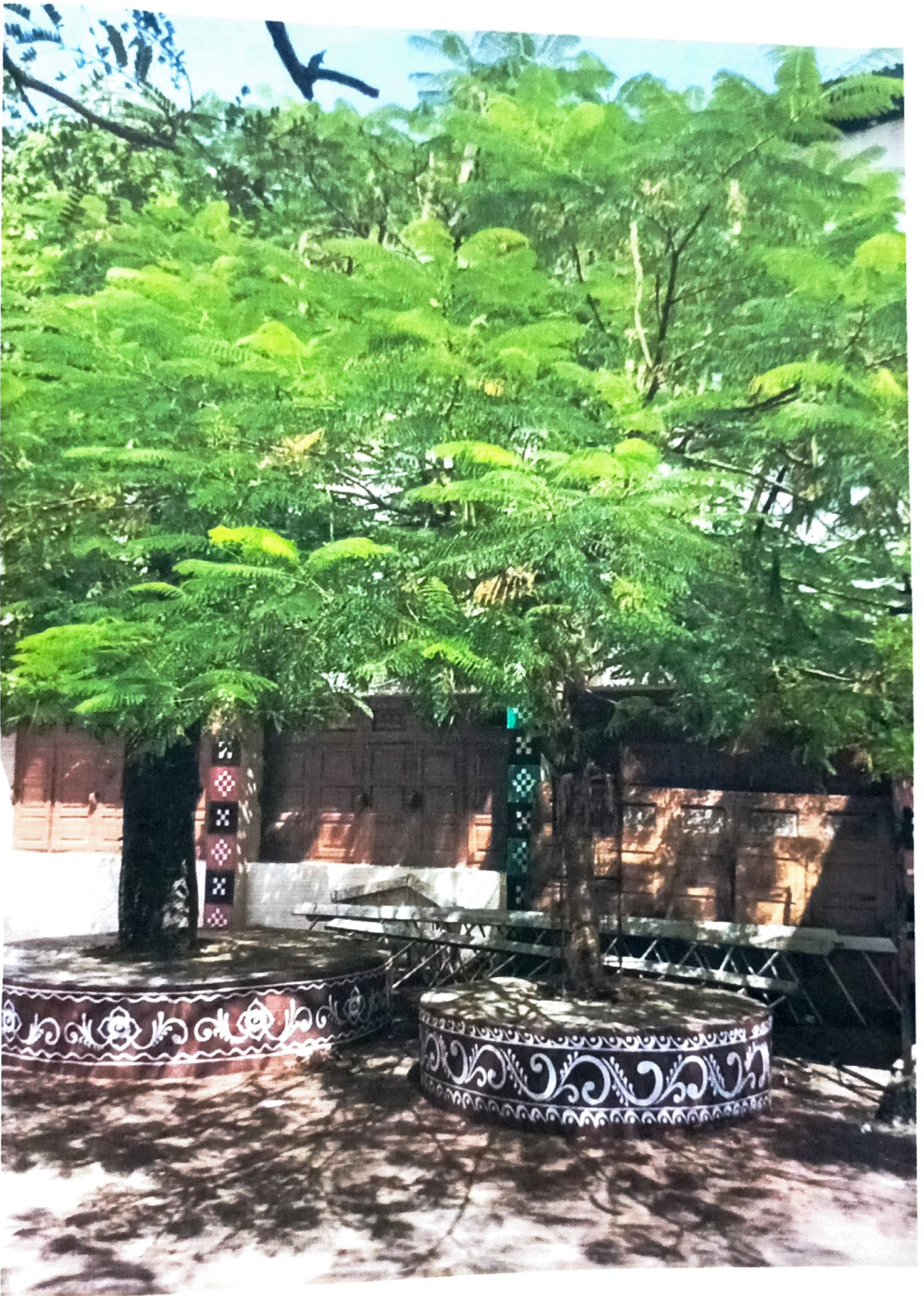
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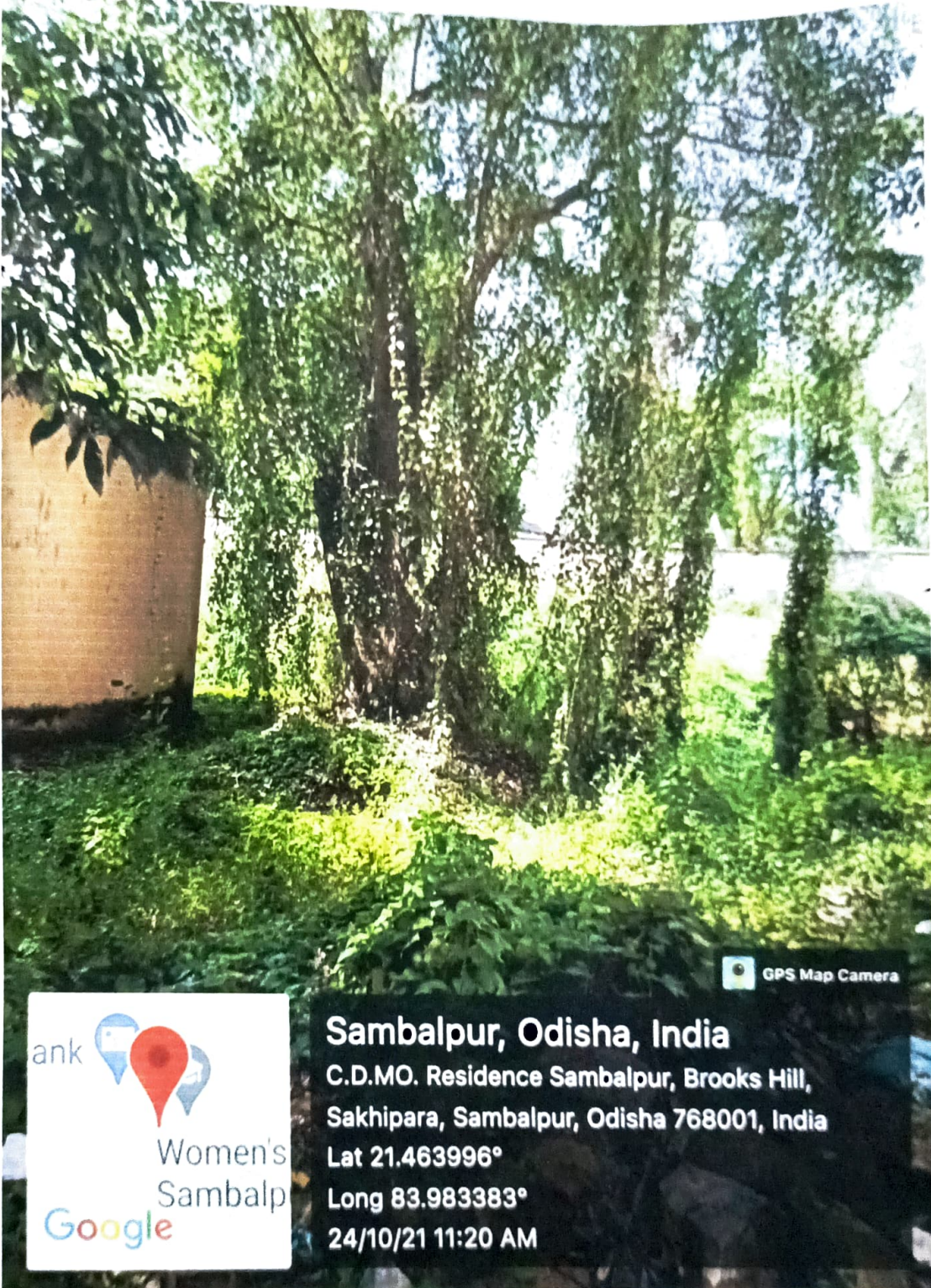
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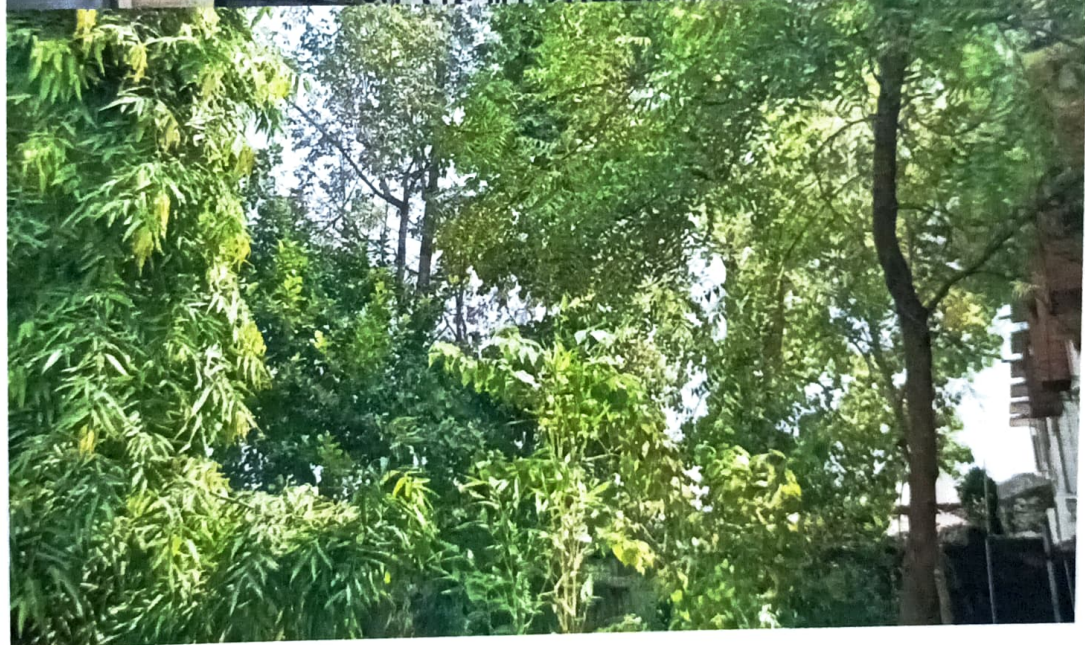
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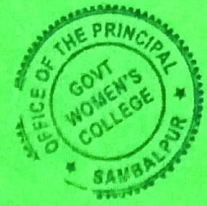


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Govt. Women's College
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