

Sri Guru Gobind Singh College Sector 26, Chandigarh



BEST PRACTICE

ENVIRONMENTAL SUSTAINABILITY

This document contains information regarding the following Green initiatives:

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- **The Practice**
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TITLE OF THE PRACTICE: ENVIRONMENTAL SUSTAINABILITY

➤ OBJECTIVES OF THE PRACTICE

The College has taken the initiative to sensitise all the stakeholders about the importance of environment conservation and its role in Sustainable National Development. Keeping in mind the National Educational Policy 2020, National Biodiversity Targets 2020 and Sustainable Development Goals announced by the United Nations, the College adopted the best practice of Environmental Sustainability. This best practice incorporates tradition and modernity for improving the quality of life, protection of the ecosystem and preservation of natural resources along with representing cultural diversity.

➤ THE CONTEXT

Focusing on Environmental Sustainability is significant to protect the environment from degradation by human activities and alarming climatic changes due to global warming. The College, as a socially conscious entity with a vision for the future, has come forward to take measures to preserve the environment by motivating and involving the younger generation and academia in practices beneficial to the environment. Drawing inspiration from the teachings of the *Gurbani*, the College aims at improving the ecosystem by planting native species of trees and creating their seed bank as a viable solution. Outreach environmental activities are conducted to sensitise wide group of stakeholders beyond campus. The faculty and students are facilitated to conduct studies, research and development pertaining to environmental issues. Tremendous efforts have been made to create social consciousness about environmental sustainability by involving youth and academia through collaboration with government and non-government organisations.

➤ THE PRACTICE

The College follows its Environment and Sustainability Policy while undertaking green initiatives in the campus.

A. Environment And Sustainability Policy

Policy Document: <https://sggcollege.ac.in/Downloads/POLICIES%2030%20MARCH.pdf#page=15>

B.Guru Nanak Sacred Forest: A Mini Urban Forest With Native Trees

An Initiative amalgamating the aspects of Environmental Sustainability and Heritage and Cultural Preservation

The College initiated a novel idea of creating a mini urban forest on-campus in April 2019 with an objective to promote a sustainable environment. The mini forest amalgamates the aspects of ecosystem diversity, curative diversity (a wide variety of medicinal plants) and cultural diversity (including spiritual values) successfully. This habitation has flourished into a natural air-purifying dense forest with 550 trees comprising 37 different native species of the region planted in an area of 180 square metres. This novel initiative amalgamates the tradition by selecting species native to the region and modern Miyawaki technique thereby promoting natural restoration of land. A multi-layered natural forest is created by grouping the plants into different layers- shrub, sub tree, tree and canopy – in each sq m. The forest grown by this methodology grows 10 times faster, 30 times denser and helps to produce more oxygen than that produced by regular plantations. It is developing into a hub of natural biodiversity and is a step towards reducing the carbon footprint of the region. This is a significant contribution towards the National Biodiversity Target 2020 of the Government of India which stresses on the need to spread awareness involving young minds and intelligentsia to play a positive role for restoration, conservation and sustainable use of the vulnerable ecosystem.

• List of 37 Native Species Planted in the Mini Forest

S.No.	Local Name	Scientific Name	Category
1	Semal	<i>Bombax ceiba</i>	Top Canopy
2	Bahera	<i>Terminalia bellirica</i>	Top Canopy
3	Arjun	<i>Terminalia arjuna</i>	Top Canopy
4	Phulai	<i>Acacia modesta</i>	Tree
5	Shisham	<i>Dalbergiasissoo</i>	Tree
6	Jhingan	<i>Lanneacoromandolica</i>	Tree
7	Palash	<i>Butea monosperma</i>	Tree
8	Babool/ Kikar	<i>Vachellianilotica</i>	Tree

9	Sohanjana	<i>Moringa concanensis/ Moringa oleifera</i>	Tree
10	Jand	<i>Prosopis cineraria</i>	Tree
11	Roheda	<i>Tecomella undulate</i>	Tree
12	Jamun	<i>Syzygium cumini</i>	Tree
13	Gular	<i>Ficus racemosa</i>	Tree
14	Papri (Indian Elm Tree)	<i>Holoptelea integrifolia</i>	Tree
15	Desi mango	<i>Mangifera indica</i>	Tree
16	Harar	<i>Terminalia chebula</i>	Tree
17	Mahua	<i>Madhuca longifolia</i>	Tree
18	Pilkhan (White Fig)	<i>Ficus virens</i>	Tree
19	Neem	<i>Azadirachta indica</i>	Tree
20	Peepal	<i>Ficus religiosa</i>	Tree
21	Bargad/Bohar (Indian Banyan)	<i>Ficus benghalensis</i>	Tree
22	Lasura	<i>Cordia myxa</i>	Tree
23	Amaltas	<i>Cassia fistula</i>	Tree
24	Khair/ Katha	<i>Acacia catechu/ Senegalia catechu</i>	Tree
25	Lasora / Goonda	<i>Cordia dichotoma/Cordia myxa</i>	Tree
26	Chamror	<i>Ehretia laevis</i>	Tree
27	Kharajal/Pilu/Meswak	<i>Salvadora oleoides</i>	Initial years Shrub & after Tree
28	Meethajal	<i>Salvadora persica</i>	Initial years Shrub & after Tree
29	Dhonk/Dhauk/Dhok	<i>Anogeissus pendula</i>	Tree
30	Gum Arabic	<i>Acacia Senegal/Senegalia senegal</i>	Tree
31	Karanj	<i>Millettia pinnata</i>	Tree
32	Harshingar	<i>Nycanthes arbor-tristis</i>	Shrub
33	Karir	<i>Capparis decidua/ Capparis decidua</i>	Shrub
34	Vasaka	<i>Justicia adhatoda</i>	Shrub
35	Karonda	<i>Carissa carandas</i>	Shrub

36	Guggul	<i>Commiphorawightii</i>	Shrub
37	Nirgundi	<i>Vitex negundo</i>	Shrub

- **Virtual Tour of Guru Nanak Sacred Forest**

<https://youtu.be/KrqbR-8FtEs>

- **Relevance to National Mission/Priorities**

The creation of Guru Nanak Sacred Forest on the campus will contribute towards the National Mission and Environment Priorities of the Government in a big way by involving the youth and academia as evident from the various policies enlisted below:

- i. The Government of India has time and again garnered people’s attention and support towards the cause of the environment. Prime Minister NarendraModi has launched numerous initiatives to safeguard the environment and steer India towards being a leader in restoration of Green Global Environment.
- ii. The United Nations Environment Programme (UNEP) named the Indian Prime Minister NarendraModi and French President Emmanuel Macron as joint ‘Champions of the Earth’ in the policy leadership category.
- iii.A Green Skill Development Programme was launched in June 2017 by the Ministry of Environment, Forest, and Climate Change to focus on developing skills among youth in the environment and forest sector.
- iv. National Biodiversity Target 2020: The target of the Government under NBT (National Biodiversity) by 2020 is that the youth, right from their formative years, should be acquainted with the value of biodiversity and take positive steps to conserve and use it sustainably.
- v. The Ministry of Environment, Forest and Climate Change will receive World Bank’s Global Environment Facility Grant for India’s Ecosystem Services Improvement Project (ESIP). As part of this, models will be developed and tested for improving forest quality through effective management of invasive alien species.
- vi. The Green India Mission (GIM) aims to improve forest quality over five million hectares and develop new forests over another five million hectares. The ESIP project in alignment with GIM will develop and implement innovative approaches and field-based activities for invasive

species removal, replanting with native species and biological control. It will result in an enhanced national knowledge base to support the policy on containing the geographic spread of such invasive species.

C. Environment Committees in the College

The College has formed two committees, ***DharatSuhavi Environment Society*** and **Campus Beautification Committee** which work towards raising environmental consciousness to achieve sustainability towards biodiversity and maintain greener campus.

DharatSuhavi Environment Society



The Environmental Society was renamed as *DharatSuhavi Environment Society* and its official logo was released on Sep 02, 2019 commemorating Van Mahotsav. The term *Dharat Suhavi* has been derived from *Gurbani*, which literally means ‘Blessed Land’. The primary focus of the society is to work constantly towards creating awareness and sensitising the staff, students and community at large regarding sustainable environmental issues. The Society organises Environment Awareness Drives, holds Environment Education classes for the first year UG students, participates in projects of National Environment Awareness Campaigns and organises educational trips for students. The Environment Society takes part in planting trees on special occasions like *Van Mahotsav* every year. Keeping in view the 2021 global theme of ‘Forest Restoration – A Path to Recovery and Well Being’, various fruit and ornamental trees were planted. During the lockdown, various commemorative days related to environment were celebrated by providing online platforms to students to participate in various competitions and sensitising about the importance of environment preservation.

Campus Beautification Committee functions towards raising and maintaining plant diversity in the campus green areas largely in Botanical Garden with special emphasis on giving practical

demonstrations to science students. The Botanical Garden also includes a special spot for raising native herbal and medicinal plants which are environmentally beneficial as well as economical to maintain. This garden is used as a central nursery for raising horticultural plants which are used to beautify the campus. Under the *Saugaat*– Gift-a-Sapling Scheme, saplings raised in central nursery are gifted to various dignitaries and guests who visit the college on different occasions to raise environmental awareness.

D. Green Cover and Floral Diversity

Sri Guru Gobind Singh College has 10,281 sqft of green cover with over 1200 varieties of plants, 1000 trees (approximately) and nearly 1000 other potted plants providing oxygen, improving air quality, climate amelioration, conserving water, preserving soil and supporting biodiversity. The pedestrian path in the campus is lined with mango trees, which provide a green canopy cover over the path. Fruit trees are planted all across the College campus to attract birds and frugivorous mammals. The green cover other than the mini forest includes Botanical Garden, Herbal Garden, *Barah Maha* Garden of Biodiversity, *Bebe Nanaki* Garden of Serenity, garden adjacent to the Cafeteria, Sports Grounds and Hostel Garden.

E. Faunal Diversity

The mini forest has improved the biodiversity index of the area by attracting many species of birds and insects, which are disappearing from environment. The vast green cover and floral diversity of the College attracts huge faunal diversity comprising birds, insects, bees, wasps and squirrels etc. The students learn to appreciate their natural habitats and get acquainted with their interactions within their ecosystems. The Lotus and Lily pond has *Gambusia*, a larvicidal fish, to control the breeding of mosquitoes. The College has also adopted few dogs and cats to create an environment of dignity and respect between humans and animals. The vast green cover of the College also provides a resting place and food source to help migratory birds coming to Chandigarh reach their destination.

F. Waste Management

The College, in a constant bid to create a zero-waste campus, ensures that the campus waste is segregated at source and recycled or sold off to authorised vendors. The College continually tries to ensure the implementation of the 5R's: Refuse, Reduce, Reuse, Repurpose and Recycle.

- Colour-coded dustbins are placed all across the campus for segregation of wet and dry waste. Leaf litter is accumulated in the simple, bacterial and vermicomposting pits for biodegradation. The College has restricted single-use plastic and plastic bags in campus.
- The College is connected with the Municipal Corporation drainage system for management of liquid waste. The wastewater generated from air conditioners is reused for watering the gardens.
- The biomedical waste generated from bacterial culture lab is autoclaved before being disposed of to avoid any contamination.
- Incinerator has been installed in Girls Common Room to dispose of sanitary waste.
- The College has a designated e-waste collection store and an e-waste collection box for periodic disposal of electronic waste from authorised vendor. Printer cartridges are refilled and reused.

G. Water and Energy Conservation

The College realises the importance of sustainable ecosystem as prescribed in numerous Government campaigns and commemorates important days pertaining to water and energy conservation such as *Jal Shakti Abhiyan*, *Akshay Urja Diwas* etc. The students as well as staff are also sensitised regularly for undertaking such practices through several awareness drives in and beyond campus as outreach programmes in adopted villages and other public places.

H. Research and Development

Research and development is an important domain where the faculty and students of the College work diligently on theme of environmental sustainability. Students from faculties of Science, Social Sciences and Languages undertake interdisciplinary research initiatives based on the native species grown in the mini forest. The faculty has presented and published several research papers along with noteworthy research projects.

I. Activities Conducted on Theme of Environmental Sustainability

Various activities are conducted throughout the session to promote environmental sustainability. The College took the opportunity and engaged a wider range of beneficiaries across the North Indian region by conducting its activities online during COVID 19 pandemic, organised by Guru Nanak

Sacred Forest Committee, *Dharat Suhavi* Environment Society, Campus Beautification Committee, NSS unit and various Departments of the College.

➤ EVIDENCE OF SUCCESS

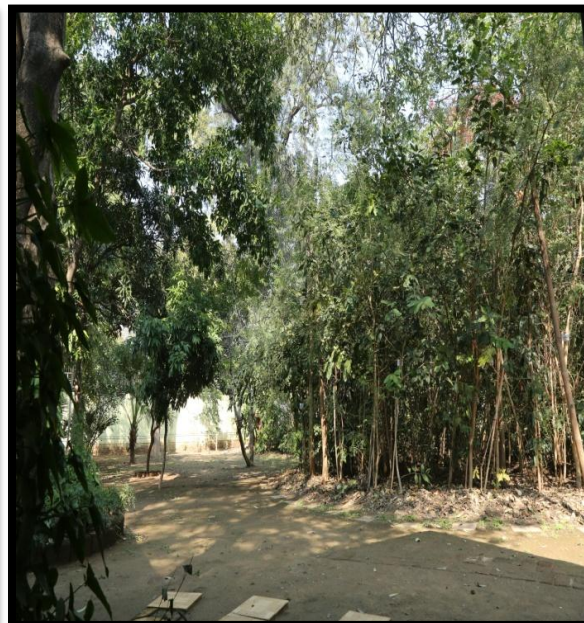
I. Guru Nanak Sacred Forest: A Mini Urban Forest with Native Trees

The creation of the mini urban forest in the College has been of great significance towards documentation and preservation of genetic heritage. It involved a study and documentation of traditional ways of collecting and storing seeds of native species and helped to understand how tiny forest spaces can act as safe refuges for insects, birds and other fauna that are gradually disappearing from the ecosystem. It has successfully contributed towards promoting environment related policies of the government by mobilising people for this noble cause.

View of Mini Urban Forest



Board inside Guru Nanak Sacred Forest displaying common names, botanical names and pictures of 37 species of native trees planted in the mini forest



Aesthetic Pathway developed around flourishing Mini Forest

A **Heritage Wall** was created in the Guru Nanak Sacred Forest with quotes on ecology taken from the *Gurbani*.



Heritage Wall with quotes on ecology from *Gurbani* in mini forest

- **Plantation of Native Trees**

Desi Beriyan Planted to Promote Biodiversity: Saplings of *Desi Beriyan (Zizyphussp.)* were planted on August 21, 2020 along the boundaries of Guru Nanak Sacred Forest: A Mini Urban Forest with Native Trees and Botanical Garden. Sardar Kahan Singh Pannu, IAS, Secretary, Department of Agriculture and Climate Change, Government of Punjab cum Director Mission and Trust, Punjab was the Chief Guest on this occasion. This event is in consonance with the goal of ‘Environmental Sustainability’ and ‘Heritage Preservation’ promoted by the College. This event was conducted to commemorate the 400th Birth Anniversary of Sri Guru Tegh Bahadur ji.



The College collaborated with Beerh Mallan Society, Sri Muktsar Sahib that promotes and propagates indigenous species. The Society gifted 150 saplings of '*Desi Beriyan*' to the College. These saplings were further gifted to various Institutes as part of the Community Outreach Programme of the College:

- i. Guru Gobind Singh College for Women, Chandigarh
- ii. Sri Guru Gobind Singh College of Pharmacy, Chandigarh
- iii. Sri Guru Gobind Singh Collegiate Public School, Chandigarh
- iv. Sikh National College, Banga, Punjab
- v. Panjab University, Chandigarh
- vi. Saplings were also gifted to Municipal Corporation, Chandigarh
- vii. Members of Sikh Educational Society
- viii. Faculty and students of the College also received some saplings

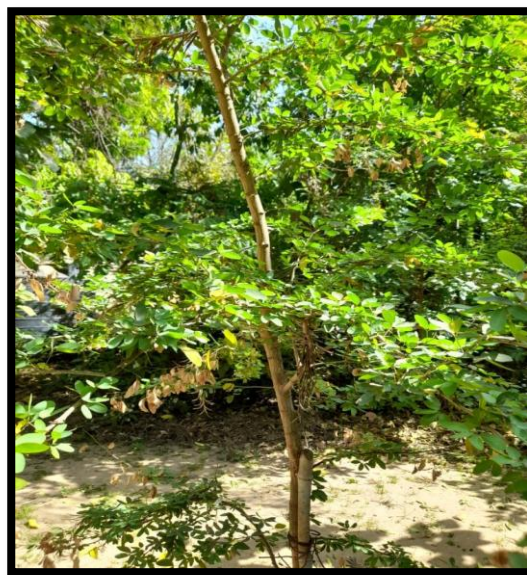
Desi Beriyan have numerous health benefits and enhance ecological biodiversity by attracting more birds. Through the Outreach Programme, the College aimed to spread awareness regarding the importance of dwindling native species which have immense cultural, traditional and religious significance that was otherwise overlooked in the race for modernisation.

- **Addition of Native Species: Plantation of *Triveni* and *Jungle Jalebi***

Indigenous trees such as *Triveni* (Neem-*Azadirachta indica*, Peepal- *Ficus religiosa* and Bohar- *Ficus benghalensis*) and *Jungle Jalebi* (*Pithecellobium Dulce*/ Madras Thorn/Manila Tamarind) were planted in the mini urban forest to celebrate International Day of Forests and to commemorate the creation of Guru Nanak Sacred Forest in the College. *Triveni* plantation holds ecological and spiritual significance. It prevents soil erosion, improves soil fertility and structure, helps in attracting rains and has many medicinal values too. *Jungle jalebi* is a tropical Indian fruit which has numerous health benefits.



Triveni (Neem, Peepal and Bohar)



Jungle Jalebi

- **Visit by Important Dignitaries to the Guru Nanak Sacred Forest: A Mini Urban Forest With Native Trees**

- i. Sardar Kahan Singh Pannu, IAS, Secretary, Department of Agriculture and Climate Change, Government of Punjab-cum-Director Mission and Trust, Punjab visited mini forest as Chief Guest for the plantation of *Desi Beriyan*. He lauded the sincere efforts of the College in creating balance between culture and ecology and appreciated for being the only educational Institute of the region to initiate a novel idea of creating a mini forest on-campus in an area of 180 sq m.
- ii. On Aug 17, 2020, a three-member team from Punjab Biodiversity Board and Punjab State Council of Science & Technology visited mini forest for advice on further development and

research related to various native species of trees. S Satnam Singh Ladhar and Dr Gurharminder Singh, Principal Scientific Officer, Directorate of Environment and Climate Change and Punjab Biodiversity Board and Dr Sangeeta Sarangal, Scientist, Punjab Biodiversity Board comprised the expert team.

VISITORS BOOK		
Date	Name & Address	Remarks
17.08.20	I am immensely impressed by vision of management & faculty towards nature & biodiversity. I cannot be earnest supporter of Punjab Biodiversity Board, Govt. of Punjab. For setting up Biodiversity Park cum Herbarium Garden at Pusa College, CND.	Gurharminder Singh, Principal Scientific Officer Punjab Biodiversity Board, Govt. of Punjab.
	Dr. Sangeeta, Scientist Punjab Biodiversity Board Chandigarh.	Biodiversity rich areas included various types of species. Highly appreciated.
17.8.20	It was great pleasure to visit SGGs in connection with development of Biodiversity Park in the Institute. This is really a very good initiative of the Institute to conserve biodiversity of the region. The already set up Gurm Nanak Rajioli is a unique initiative. Good work being done.	
	Dr. Satnam S. Ladhar 9462200886	

Valuable Remarks by the Dignitaries in Visitor’s Book of the College

iii. On Sep 25, 2020 the Coordinators of Guru Nanak Sacred Forest, Dr Amandeep Kaur and Dr Navjot Kaur, were invited to visit the Museum of Trees, Chandigarh established by S Damanbir Singh Jaspal, senior IAS Officer of Punjab, former Head of Department of Forests, Punjab, an eminent scholar and academician. He appreciated the unique initiative of creation of mini forest in the College as an ‘Action through Awareness and Education’. He gifted his book *Tryst with Trees: Punjab’s Sacred Heritage* for the Observation and Research Centre.

Visit to Museum of Trees by the Coordinators of Guru Nanak Sacred Forest



• Collaboration with Government Agencies

The College collaborated with the following Government offices for assistance in further development and expansion of the mini forest at various stages:

Punjab Biodiversity Board (PBB); ENVIS Centre; Department of Environment; Punjab State Council for Science & Technology; CREST Chandigarh Renewal Energy Science & Technology Promotion Society; Forest & Wildlife Preservation Department; Department of Soil & Water Conservation; Department of Agriculture and Farmer Welfare, Dera Bassi, SAS Nagar; Punjab Mandi Board; Central Ground Water Board, Chandigarh; Punjab State Rural Development Board.

II. Green Cover and Floral Diversity

The extensive green cover of the College has contributed towards improving air quality, climate amelioration, conserving water, preserving soil and sustainable biodiversity. Different areas are covered with various types of plants, trees, shrubs, climbers etc. The pedestrian path in the campus is lined with mango trees, which provide a green canopy cover over the path. Fruit trees are planted all across the College campus to attract birds and other frugivorous insects etc.

• The College has following Green Areas in addition to the mini urban forest:

i. Botanical Garden

ii. Herbal Garden

iii. *Barah Maha* Garden of Biodiversity

iv. *Bebe Nanaki* Garden of Serenity

v. Garden Adjacent to Cafeteria

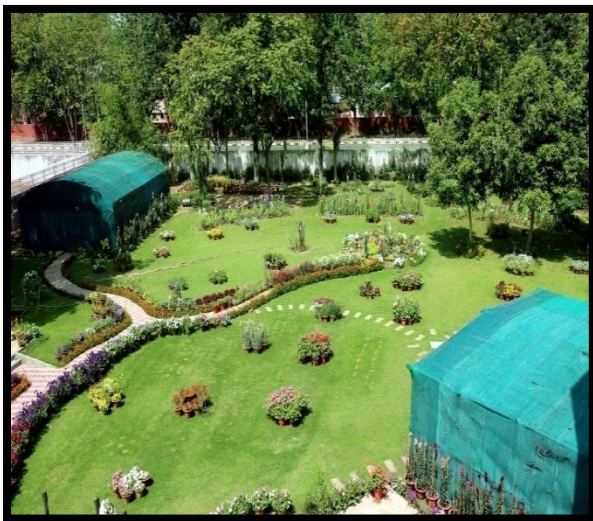
vi. Sports Grounds

vii. Hostel Garden

viii. Pedestrian Friendly Pathways with Green Cover

i. Botanical Garden

The Campus Beautification Committee maintains the Botanical Garden and 5 lawns which add to the greenery and rich biodiversity in the campus. A plethora of seasonal and perennial flowering plants adorn the College. In addition to the annuals in the garden beds, approximately 500 seasonal flower pots were cultivated and nurtured in the central nursery inside the botanical garden. The garden presents a unique blend of beauty and culture, where each tree holds a different meaning to individual viewers. A sprinkle irrigation system has also been installed to provide ideal growth to plants and reduce the consumption of water.





ii. Herbal Garden

Herbal Garden has been set up in the Botanical Garden of the College established in 2016 under the aegis of Department of Environment, Chandigarh. The traditional and aromatic herbs like Tulsi, Mint, Coriander, Thyme, Rosemary, Oregano, Chives and Garlic, to name a few are flourishing. All these plants are important therapeutically, environmentally and educationally. Herbal Garden has a collection of approximately 100 species of medicinal plants like Mint, Coriander, Peppermint, Tulsi, Basil, Thyme, Oregano, Fenugreek, Cardamom, Clove, Bayleaf, Kewda, Brahmi, Ashwagandha, Vacha, Lemon, Lemongrass, Calotropis, Fennel, Chives, Turmeric, Ginger etc. which aid in teaching of Ethnobotany and in research by students of Botany, Biotechnology and Chemistry. For the above said purpose, these plants are cultured and maintained annually at their designated areas. The produce of plants like Cherry tomatoes, Lemons, Papaya, Plum, Guava, Grapes, Peaches, Mango etc. on-campus are collected and distributed amongst students and the under-privileged. They also attract a rich diversity of fauna in the campus. Name plates with Botanical name, common name and uses are displayed thus raising awareness and consciousness about nature among students.



Herbal Garden

Flowering plants: Dahlia, Chrysanthemum, Zinnia, Poppy, Dianthus, Petunia, Phlox, Marigold etc. are among the numerous flowering plants that have fetched many laurels to the College in various flower shows.



Saplings of Seasonal Plants

Seasonal Flowers on Campus

Fruit Plants: The College has a wide variety of indigenous and exotic fruit trees such as mango, jackfruit, amla, pear, plum, peach, jamun, lemon, mausami, grapevine, dragon fruit. To commemorate International Day of Forests 2021, as many as 20 different species of fruit trees were planted.



Grapes



Guava



Dragon-fruit



Mangoes

A **Solar GreenHouse** is constructed in the College with the dimension of 10x6 m² with the GI pipe and green shade net. It is used to shield green plants from extreme environmental conditions and prepare seedlings.



Solar Greenhouse in Botanical Garden

iii. Barah Maha Garden of Biodiversity

The concept of *Barah Maha* Garden of Biodiversity is being realised through a Pilot Project by the Department of Botany. This project involves study and plantation of flowering plants which will attract birds, butterflies and honey bees enriching the faunal diversity and making the garden pollinator-friendly. The *Ixora* flowers and *Desi* roses have been aesthetically planted in the first stage to be followed by more species after research.

The Garden of Biodiversity is aptly named from our rich heritage. *Barah Maha*, meaning ‘Twelve Months’, describes the months of the Indian Lunar Calendar and it is in the form of Calendar poetry, a collection of hymn-verses composed by Guru Nanak Dev ji.



iv. Bebe Nanaki Garden of Serenity

The Garden of Serenity adds to the environment sustainability and aesthetics of the campus. This garden is a reflection of the spiritual radiance of Bebe Nanaki, the elder sister of Guru Nanak Dev Ji, after whom it is named.



v. Garden Adjacent to Cafeteria



vi. Sports Grounds



vii. Hostel Garden Aerial View



viii. Pedestrian Friendly Pathways with Green Cover

The pedestrian path of the College is lined with shady heritage mango trees, which provide a green canopy over the path.

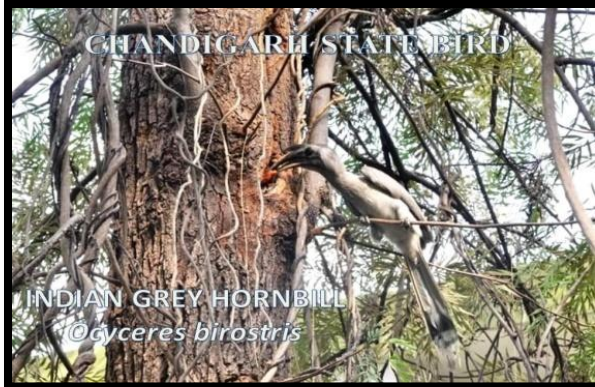


III. Faunal Diversity

In addition to the floral diversity, the College also houses a rich faunal diversity.

• Bird Diversity

The E-bird data collected from the campus is evidence of increasing bird diversity --the Chandigarh State bird, Indian Grey Hornbill, Mynah, Sparrow, Parrot, Pigeon, Shrike, Dove, Himalayan Bulbul, Jungle Babbler, Greater Coucal, Red Turtle Dove, Warbler, Munia, Ashy Prinia, Hoopoe, Barbet, Indian Robin, Baaz, Kingfisher, Koel and other birds. Bird feeders are placed in different parts of the College in order to provide secure source of food and water during summer season.



Bird Houses placed at different areas

- Gambusia fish is there in the lotus and lily ponds to control the breeding of mosquitoes. Other than that, the pond also has dragonflies, frogs, snails. In summer, the pond provides water for pollinators like bees and wasps. The College has a steady population of squirrels. Insects belonging to 7 common orders (Odonata, Diptera, Hymenoptera, Hemiptera, Isoptera, Coleoptera and Lepidoptera) are found in the campus. Many nests of *Polistes* (wasps) are seen in the campus.



LADYBUG, ANTS AND INSECTS



BUTTERFLY



Nephila Pilipes-ORB-WEB SPIDER



GIANT ASIAN MANTIS



Mynah Hatchlings



Caterpillar of Plain Tiger Butterfly



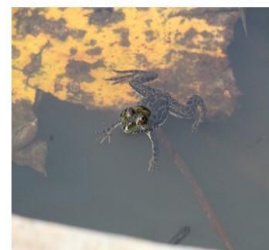
Jewel Bug



Yellow Wasp (*Polistes wattii*)



Butterfly (*Junonia* sp.)



Common Indian Frog (*Rana tigrina*)

Faunal Diversity in the Campus



Gambusia/ Mosquito Fish in Lily Pond



Earthworm in Composting Pit



Indian Palm Squirrel



Domestic Cat in Boys Hostel

IV. Waste Management

The College provides a safe and healthy environment for students and staff by adhering to the provisions under Rule 15 of Solid Waste Management Rules, 2016 issued by the Ministry of Environment, Forest and Climate Change, Govt. of India, and Chandigarh Solid Waste Management Bye-laws, 2018, in a phased manner. The College, in a constant bid to create a zero-waste campus, ensures that the campus waste is segregated at source and recycled or sold off to authorised vendors. Keeping in mind the Swachh Bharat Mission, Government of India, the College constituted the

Swachhata Committee in 2018, which comprised of teaching, non-teaching, cleaning staff and the Student Council with the aim to follow the 5R's: Refuse, Reduce, Reuse, Repurpose and Recycle.

- **Solid Waste Management**

- i. Solid waste is segregated into wet (biodegradable) and dry (non-biodegradable) waste. For smooth and efficient waste management, marked and colour-coded dustbins are placed across the campus. These are sent for disposal and recycled as per standard procedures by the authorised vendors.



Separate bins for Wet and Dry Waste



Pig Farmer collecting wet waste from canteen

- ii. Wet waste generated in the College Mess and Canteen is collected by local pig farmers on alternate days.
- iii. The leaf litter generated in the campus is composed in a composting unit comprising bacterial, vermicomposting, simple composting pits and a vermiwash unit. These units were made operational on the campus which also provided hands-on training to students.



Dry Leaves Compost Pit at Botanical Garden

Cow dung mixed Compost Pit at Botanical Garden

- iv. Waste paper generated during the house examinations is sold periodically to the paper-recycling vendors as per University guidelines.
- v. Broken furniture, sanitary items, pipes and other construction and demolition-related wastes are given to an authorised vendor for proper disposal.
- vi. Laboratory machinery and equipment which becomes obsolete, unusable or beyond economical repair is written-off and given to government- authorised vendors.
- vii. An incinerator has been installed to dispose of sanitary waste.



- **E-Waste Management**

- i. The College strictly adheres to E-Waste Management Rules, 2016. The electronic waste is segregated and collected in E-waste dustbins and E-waste store accordingly. The e-waste includes used batteries, cells, ear phones, head phones, damaged mobile chargers, wires etc.



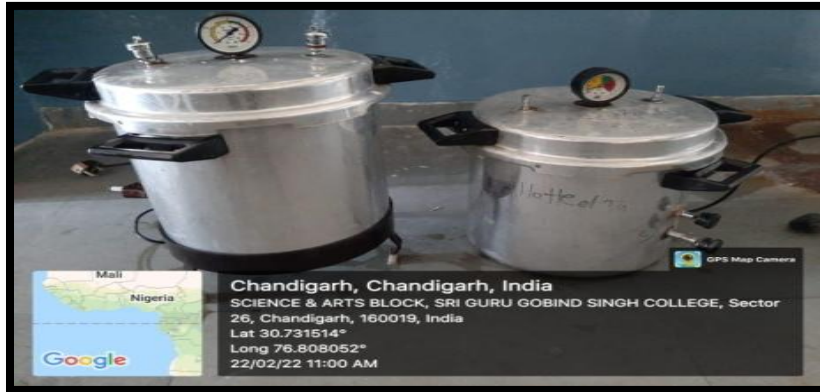
- ii. Various awareness drives are conducted to sensitise stakeholders for the scientific disposal of electronic waste. These include an expert lecture on E-Waste and Single-Use Plastic Management in collaboration with Swarmani Youth Welfare Association & Chandigarh Pollution Control Committee on Mar 06, 2021. NSS volunteers attended the session and took a pledge to make Chandigarh an ‘e-waste free city’.

<https://www.facebook.com/NSSSGGS26OFFICIAL/posts/2622889934667976>



- **Biomedical Waste**

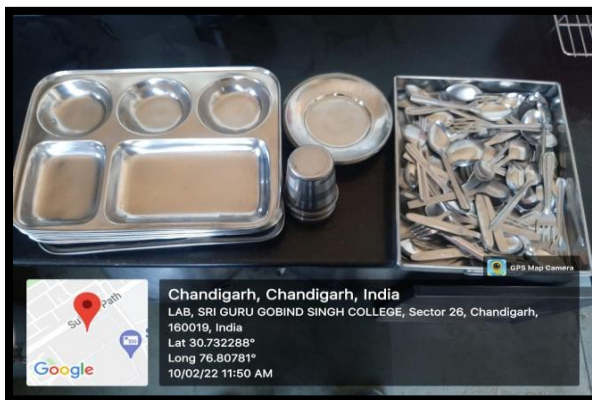
The biomedical waste generated from bacterial culture is autoclaved at 121°C under 15 lbs pressure for 30 minutes before being disposed of to contain the spread of unwanted bacterial cysts and spores.



Autoclave equipment in Biotechnology Laboratory

- **Initiatives for Reduce, Reuse, Recycle**

- Ban on Single-Use Plastic in Campus:** The College adheres to the 'Plastic Waste Management Rules, 2016' given by the Ministry of Environment, Forest and Climate Change, Govt. of India and also abides by 'Plastic Waste Management Bye-Laws 2019' of Municipal Corporation Chandigarh. Therefore single-use plastic, including plastic cold drink bottles less than 1 litre, plastic plates, cups, glasses, cutlery etc. are banned in the College premises. The students and staff are encouraged to adopt eco-friendly products for reducing the use of plastic. The use of stainless steel utensils is promoted in Canteen and Hostel Mess. During celebration of Founder's Day and other religious occasions eco-friendly green *pattals* are used to serve food in *Langar*.



Use of Steel Utensils in Canteen



Langar being served on green *pattals*

ii. **International Plastic Free Day** celebrated by NSS by launching campaigns on ‘No plastic Use’ and ‘Reuse Before Recycle’ on July 03, 2020.

<https://www.facebook.com/watch/?v=581518552761118>

<https://www.facebook.com/NSSSGGS26OFFICIAL/posts/2470469529910018>

iii. **Promoting Paper-Less Initiatives**

- a) Office automation has largely reduced the use of paper for administrative purposes including maintenance of records, leave application etc.
- b) Internal notices and communications regarding admissions, examination, fees etc. are done through email and broadcasting messages.
- c) The library is partially automated with bar-coded books. Library membership smart cards are issued to students to get access to these books. The College library has e-library facilities with INFLIBNET, N-List and DELNET.
- d) Most of the storage is in digitised form in the library, laboratories and various departments.
- e) Prints and photocopies are taken on both sides of the pages to avoid excess paper usage.
- f) The single side printed papers are reused for internal office work.

V. **Water And Energy Conservation**

• **Water Conservation and Rainwater Harvesting Initiatives**

- i. Rainwater Harvesting Unit has been installed to reuse the rainwater collected from roof of Boy’s Hostel and used for gardening in the Botanical Garden.



Supply of rain water into the Botanical Garden using motor

- ii. Plantation of drought-resistant plants such as *Desi Beriyan (Zizyphus sp.)*, *Jand (Prosopis)*, *Bougainvillea*, *Karir (Capparis)*, *Amaltas (Cassia fistula)*, *Aloe vera*, *Sedum*, *Sansevieria* (Mother-in-law’s Tongue), *Euphorbia*, *Kalanchoe*, *Agave*, etc. is encouraged.

- iii. Treated tertiary water is used for watering the lawns, herbal garden and playgrounds. This helps in preventing the wastage of potable fresh water.
- iv. Grey water generated from washrooms is connected to Municipal Corporation Sewage system with well maintained drainage system of the College.
- v. To overcome water shortage, watering cans are used for irrigation instead of water pipes
- vi. The water dripping from the air conditioners of the administrative office is used to water the plants in front of the Administrative office.
- vii. Overflowing of rooftop tanks is avoided with the floaters.

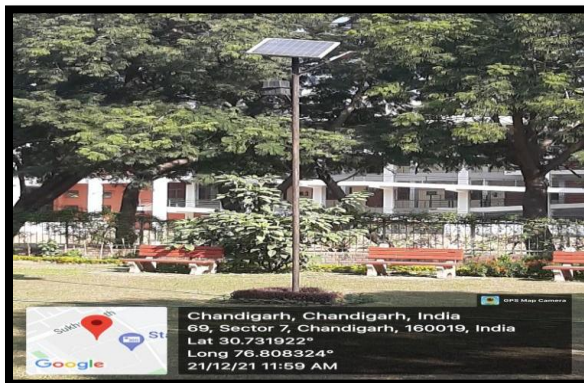
● **Energy Management**

- i. Solar Power Plant with a capacity of 100 kw is installed on the roof of Boys’ Hostel and College buildings.



Solar Panels on the rooftop of Boys Hostel of the College

- ii. Solar lights are also installed in the College premises.



Solar Light in Bebe Nanaki Garden



Solar Light in Boys Hostel

- iii. Committed efforts are being made by the College to reduce the carbon footprint by installing power efficient electricity devices such as 5 star energy-efficient AC units, LED lights, UPS connected systems.
- iv. Audit of energy efficient heating, cooling, lighting and water systems in the campus has been conducted.

VI. Research and Development

- An **Observation and Research Centre** has been created in the Guru Nanak Sacred Forest: A Mini Urban Forest with Native Trees, to involve students and faculty of various streams.



View of Observation and Research Centre in the mini forest

Various observations and studies are underway on growth of the mini forest under different conditions characterised as follows:

- i. Plants have been grouped into different layers – shrub, sub tree, tree and canopy – in each sq m. Such a multi-layered dense green forest will eventually become maintenance-free due to the *Miyawaki* technique used during plantation.
- ii. Restoration of native and heritage plant habitat vital to preserving biodiversity
- iii. 100 % organic, zero pesticides
- iv. Natural biodiversity habitat for pollinators
- v. More CO₂ absorption and sequestration
- vi. SPM reduction and ground water recharge
- vii. Soil conservation
- viii. Regeneration of ecosystem

Students of the Department of Botany and Zoology are involved in the study of restoration of native plant habitat vital to preserving biodiversity since it forms the ecological basis upon which life depends. The mini forest has improved the biodiversity index of the area by attracting many species of birds and insects, which are disappearing from environment. Students of Chemistry and Biotechnology are involved in projects for *in vitro* antioxidant potential and phytochemical screening of the native species of trees. In a way, this mini forest has provided a platform for inter-disciplinary research. Students of History, Literature and Religious Studies are involved in studying and preserving the historical, cultural and religious significance of various species of trees growing in the mini forest. Many noteworthy research publications, presentations and projects pertaining to environmental issues have been undertaken by the faculty.

- **Major Research Project**

A major research project under UGC–STRIDE COMPONENT-2 Scheme titled ‘Biodiversity Conservation and Gradual Regeneration of Ecosystem through Cultivation of Native trees and Evaluating the Effectiveness of Native Species Reforestation for Carbon Sequestration’ has been submitted by Dr Navjot Kaur, Associate Professor, PG Department of English, Dr Inderpal Pasricha, Assistant Professor, PG Department of Chemistry, Dr Hardeep Kaur, Assistant Professor, Department of History.

- **Published Research Papers/Book Chapters/Paper Presentations**

- i. Ms Amol Virk (Department of Economics) published 'Plastic Regulation Practices around the World and Lessons for India' in *Shodh Sanchar Bulletin*.
- ii. Dr Anita Chhatwal (Department of Library) published ‘Globalisation and Changing Dimensions of Agricultural Marketing’ in *Studies in Indian Place Names*.
- iii. Dr Kirtanjot Kaur (Department of Chemistry) published a book chapter ‘Nanocomposites Materials as Environmental Cleaning’ in the book *Environmental Remediation through Carbon-based Nanocomposites*, Green Energy and Technology, Springer Publication, Singapore.
- iv. Faculty also attended various online seminars, symposia and conferences on issues pertaining to biodiversity conservation, role of biodiversity during the pandemic, water conservation and purification, Sustainable Development Goals, Environment and Renewable Energy, Valuing Water – *Jal Ek Dharohar*, Green Human Resource Management’ etc.

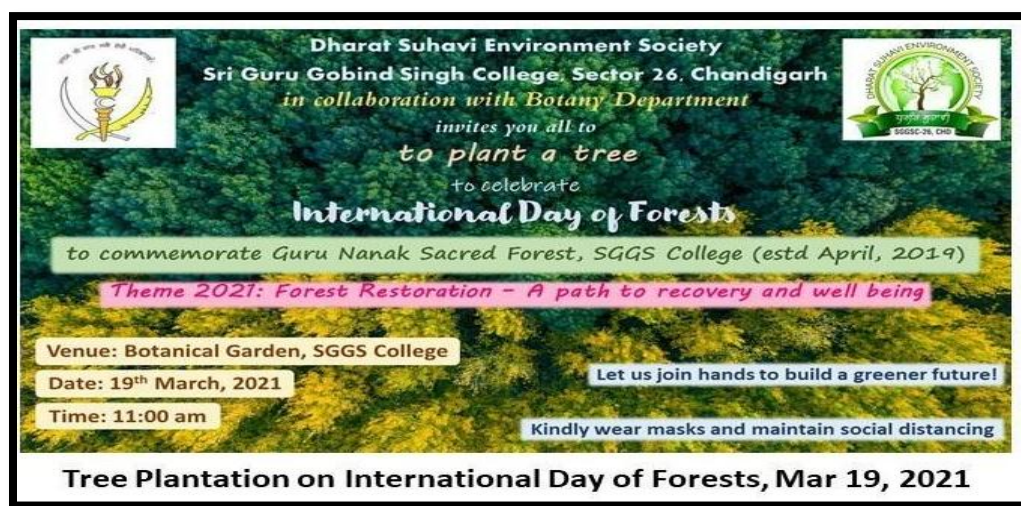
VII. Activities Conducted on Theme of Environmental Sustainability

During the session 2020-21, the College has successfully engaged students through various online activities and has sensitised them about the significance of conserving the environment and the ethics pertaining to prudent use of natural resources.

• Tree Plantation Drives

The College conducted various tree plantation drives by *Dharat Suhavi* Environment Society, Campus Beautification Committee and NSS Unit.

- i. **International Day of Forests** was celebrated by planting several fruit trees in College on Mar 19, 2021 keeping in view the 2021 global theme of 'Forest Restoration – A Path to Recovery and Well Being'. These trees included Mango, Pear, Apricot, Walnut, Apple, Avocado, Kinnow, Cherry, Champa, Bamboo, Pinus, Deodar and Insulin Plant.



- ii. **Sikh Environment Day**

As a tribute to Guru Har Rai Ji, the seventh Sikh Guru, who is remembered in Sikh history for his deep sensitivity to nature and fervent desire for its preservation, the Campus Beautification Committee, in association with the *Gurmat Vichaar Sabha* celebrated **Sikh Environment Day** on Mar 14, 2021. To mark the occasion, medicinal plants were planted in the Herbal Garden of the College. Keeping in mind Covid-19 norms, the number of participants was restricted to 20.



iii. Van Mahotsav 2020

Tree Plantation of Golden Bottle Brush (ornamental tree) was carried out in the Bara Maha Garden of Biodiversity in the College to commemorate Van Mahotsav on Jul 25, 2020. This will enhance the aesthetic ambience of the College.



Adopt a Tree/Plant' campaign was carried out from Jul 25 – Oct 31, 2020, wherein students planted a sapling in their locality, cared for it and sent pictures of those saplings after 3 months.



- **Distribution of Saplings as Community Outreach Programme**

- i. Under the **Eco-green Project ‘Saugaat -Gift-a-Sapling’** started in 2019, the College felicitates all visiting dignitaries and guests with herbal/flowering plants as a community outreach programme. Despite Covid-19, approximately 50 dignitaries visiting the campus were felicitated with the saplings cultivated in the Botanical Garden of the College.



ii. *Desi Beriyan* saplings were distributed to various schools, colleges, Panjab University, Municipal Corporation Chandigarh, SES Management, College staff and students, mentioned above in section A under plantation of native trees, as a Community Outreach Programme.

• **Competitions and other Activities**

i. World Environment Day

On World Environment Day i.e. June 05, 2021 an online campaign "STRIKE A BALANCE" was undertaken to compensate for the damage caused to the environment and also to meet halfway between the conveniences of modern living and the beauty of a pure and natural environment.



College NSS volunteers participated in the campaign and planted tree saplings in their homes and neighbourhoods as a positive step towards improving the environment.



‘Strike a Balance’ – A World Environment Day initiative

ii. World Ocean Day

Online Inter-College Slogan and Caption Writing Competition was organised by *Dharat Suhavi* Environment Society to commemorate World Ocean Day on June 08, 2021 on the theme ‘The Ocean: Life & Livelihoods’.

Dharat Suhavi Environment Society
Sri Guru Gobind Singh College, Sector 26, Chandigarh

Result

Inter-College Caption Making Competition

Theme: The Ocean: Life & Livelihoods

Congratulations to Winners and Participants

Winners:

- 2nd Nishi Thakur, SGGGS College, Sector 26, Chandigarh
- 1st Neeraj Kaur, SGGGS College, Sector 26, Chandigarh
- 3rd Ansh Kaur, PGGGS-II, Chandigarh

Dr Saranjeet Kaur Coordinator
Ms Sarabjeet Kaur Principal

All the winners & participants will receive their certificates at their respective mail id.

DHARAT SUHAVI ENVIRONMENT SOCIETY
SRI GURU GOBIND SINGH COLLEGE
SECTOR 26, CHANDIGARH

RESULT-WORLD OCEAN DAY

Theme - The Ocean: Life & Livelihoods

Online Inter-College Slogan Writing Competition

We whole heartedly appreciate the active participation of all the participants. Thanks a lot for making the event a great success!!!

WINNERS

All the winners & participants will receive their certificates at their respective mail id.

CONGRATULATIONS

2nd Gazarev Kumar Verma, Sri Guru Gobind Singh College, Sector 26, Chandigarh

1st Meenakshi Kumari, Post Graduate Government College for Girls, Sector 42, Chandigarh

3rd Megha, Post Graduate Government College for Girls, Sector 42, Chandigarh

Dr Saranjeet Kaur Coordinator
Ms Sarabjeet Kaur Principal

To the Winners & All the Participants

iii. *Akshay Urja Diwas* was celebrated by organising a Logo Competition on the topic of ‘Green Energy’ on Aug 20, 2020 to instill the value of energy conservation.

Dharat Suhavi Environment Society
Sri Guru Gobind Singh College, Sector 26, Chandigarh
in collaboration with Physics Association
Celebrates
AKSHAY URJA DIWAS 2020
August 20, 2020

Event: Logo Design Competition Email id : envsociety.sggs26@gmail.com

Topic: GREEN ENERGY

Registration: <https://forms.gle/4QgdgiE3u5dyRxVE7>
After Registration, join whatsapp group: <https://chat.whatsapp.com/LMaLiLhig1z35LoIph0VNj>

Registration starts : August 20, 2020
Last date of submission: August 27, 2020
Result Declaration : August 31, 2020

1st Prize: Rs. 500
2nd Prize: Rs. 300
3rd Prize: Rs. 200

Logo Design Competition, Akshay Urja Diwas, Aug 20, 2020

iv. Wildlife Week

An Inter-College Poster Making Competition was organised by PG Department of Zoology to celebrate Wildlife Week which is commemorated from Oct 02-08 every year on the theme 'Wildlife of India' with the sub-themes: Special Conservation Efforts in India; Migratory Birds in India and National Parks and Sanctuaries in India. Total 78 posters were received from 30 institutes of various states across India.

Inter-college poster making competition
Organized by
PG Department of Zoology
Sri Guru Gobind Singh College
Sector 26, Chandigarh

Wild life week
2nd-8th October

Theme: Wild life of India
Choose a Sub-theme:
1. Special conservation efforts in India,
2. Migratory birds in India,
3. National parks and sanctuaries in India

Patron: S. Charanjit Singh, Convener: Dr. IPS Sidhu,
Principal, HOD, PG Dept. Zoology
Organizing Team: Dr. Ruchira Sen and Dr. Saranjeet Kaur

Make a poster - Win a prize!

1. First Prize: 800/-
2. Second Prize: 500/-
3. Third Prize: 200/-
4. All participants will get electronic certificates

Play by these rules!
Make an original poster on the given theme on paper or electronically and submit it in PDF format through google form, on or before 7th October, 2020.
<https://forms.gle/9t76Sfr6ra9Bj7hm9>
Result will be declared through official account of SGGs College

v. A campaign on the theme 'Ek Diwali, AuronKeSaathBhi' was launched pre-Diwali, including donations to needy people, signing of a petition on the theme "Say No to Fire Crackers and Yes to Happiness" and a Diya Painting Competition from Nov 10-13, 2020.

SRI GURU GOBIND SINGH COLLEGE,
SECTOR 26, CHANDIGARH

**Ek Diwali,
Auro ke
Saath Bhi**
Diwali Donation Drive
Organized by NSS Unit

About Our Drive
The motive of our drive is to help the needy and make this diwali more egalitarian.

Important Instructions
1. Campaign of Donating Diyas to the poor should be covered through photographs.
2. All volunteers will take necessary precautions pertaining to the safety measures. Covid - 19.
3. Upload/Share your photographs in the link given.

Contact For Further Information
outlet: 828883325
cell: 9781044027

Shubh Deepavali!
SRI GURU GOBIND SINGH COLLEGE
SECTOR 26 CHANDIGARH

"EK DIWALI, AURON KE SAATH BHI"
ORGANISED BY NSS UNIT

**LET'S UNITE TO HELP OTHERS AND TO MAKE THIS
DIWALI MORE EGALITARIAN**

1. Talk with local sellers of your area and dissuade them from selling crackers
2. In return Take a Photo of their Business, note their location, their full name and phone numbers.
3. Send the Details You've Collected on the Google Form Given Below.
4. We shall publicise their products through social media platforms.
5. Last Date Of Submission is 12th November 2020

Registration Form Link: <https://forms.gle/9t76Sfr6ra9Bj7hm9>

For Queries Contact:
Aman: 85470 74076, Gurjot: 79968 38194

Campaign on 'Ek Diwali, Auron ke Saath Bhi'

vi. **National Pollution Prevention Day** was celebrated on Dec 02, 2020 by conducting an online Inter-College Poster Making Competition. The theme of the competition was ‘Stubble Burning: An Environmental Threat’.



vii. **Cleanliness Drives:** A one-day ‘Campus Beautification and Cleanliness Drive’ was organised on Feb 12, 2021. Approximately 50 NSS volunteers took the ‘SwachhataPledge’ to keep their surroundings clean.



A **7-day Special NSS Camp** was organised on the theme ‘Swachh Bharat Abhiyan and Jal Shakti Abhiyan’ from Mar 10-16, 2021. A total of 145 volunteers attended this camp. Volunteers were given the task to make posters on ‘Swachh Bharat Abhiyan’ and ‘Jal Shakti

Abhiyan'. All NSS Volunteers visited the adopted village Kaimbwala. A Donation Drive was conducted, wherein eatables, masks and sanitizers were distributed in the economically disadvantaged localities. After the rally, a *Nukkad Natak* entitled '2051 mein paani' was performed to encourage the people to save water for future generations. During Covid-19 environmental, hygiene and cleanliness awareness activities were done in Kaimbwala Village. This has been adopted by NSS Volunteers of College since 2015.



- viii. An interactive session on 'Eco-bricks' followed by a **workshop on 'Vermicomposting, Bacterial-composting and Simple composting'** was conducted on Mar 12, 2021



Faculty demonstrating making of eco-bricks in workshop

ix. Earth Day

Earth Day is commemorated globally to support environmental conservation. The College celebrated Earth Day by organising an online Inter-College Essay Writing Competition on Apr 22, 2021 on the topic 'Pavan Guru Paani Pita, Mata Dharat Mahat – Let's Rethink, Reset, and Restore'. Taking inspiration from the *Gurbani*, to live in harmony with nature and its Creator, the competition aimed at spreading awareness among students on the significance of conserving Mother Earth. Total 146 students from 22 colleges all across Punjab participated with great zeal. Cash prizes worth Rs. 2500 were awarded to winners. Participants and winners were given e-Certificates.



x. International Day for Biological Diversity

International Day for Biological Diversity was celebrated by organising Inter-College Short Film Contest on May 22, 2021 dedicated to the cause of raising awareness and understanding the significance of preserving faunal diversity. The students were required to prepare either narrative or documentary on any of the three themes: 'Wonders of Wildlife', 'Backyard Wilderness' and 'Biodiversity from My Balcony'. About 325 students registered with the

event and 50 YouTube video entries were received from colleges across Chandigarh, Punjab and Delhi.



VIII. Environment, Green and Energy Audits

The College conducted Environment, Green and Energy Audit realising the social responsibility of the institution by evaluating its contribution towards a sustainable future. These Audits focused on the green campus, waste management, water management, air pollution, energy management and carbon footprint reduction being implemented in the College. The green initiatives carried out by the College towards environment and sustainability have been highly appreciated in the Audit certificates. These Audit reports will further facilitate to effectively manage and govern the eco-friendly initiatives in the College and provide students and staff a better understanding of green impact on campus.

Certificate



CERTIFICATE No. EHSAP33A

CERTIFICATE

M/s Sri Guru Gobind Singh College

Sector-26 Chandigarh 160019 (India)

Has been assessed by us for the comprehensive study of environmental impact on institutional working framework to fulfill the requirement of

Environment & Green Audit

The green initiatives carried out by the college have been verified on the report submitted and was found to be satisfactory.

The efforts taken by management and faculty towards environment and sustainability are highly appreciated and noteworthy

Date of Audit: 27 Dec, 2021


Puneet Kaushik
For EHS Alliance Services



EHS Alliance Services
Plot No A-72, Surya Vihar, Near Sector-4, Gurugram (Haryana)-122001
Phone-0124-2250624, Email: ehsalliance@gmail.com, www.eshall.in

Certificate of Environment & Green Audit

AUDIT CERTIFICATE



CERTIFICATE No. EHSAP33B

CERTIFICATE

M/s Sri Guru Gobind Singh College

Sector-26 Chandigarh 160019 (India)

Has been assessed by us for the comprehensive study of Energy Audit on institutional working framework to fulfill the requirement of

Energy Audit

The energy saving initiatives carried out by the college has been verified on the report submitted and was found to be satisfactory.

The efforts taken by management and faculty towards all type of energy used in college and sustainability are highly appreciated and noteworthy

Date of Audit: 27 Dec, 2021



EHS Alliance Services
Plot No A-72, Surya Vihar, Near Sector-4, Gurugram (Haryana)-122001
Phone-0124-2250624, Email: ehsalliance@gmail.com, www.eshall.in

Certificate of Energy Audit

IX. Awards and Accolades

- **Award of Honour:** The College has won the Best Environment Society Award for its endeavours towards environmental sustainability initiatives for two consecutive sessions, 2018-19 and 2019-20. In addition to that the College has been awarded with an Award of

Honour for the time period Feb 01-Mar 31, 2021 for 'Action for Clean and Green Chandigarh', under E-Waste and Plastic Management Campaign organised by Chandigarh Pollution Control Committee, in collaboration with Swarmani Youth Welfare Association, UT Chandigarh.

