

# **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**

<b>S.No.</b>	<b>Local Name</b>	<b>Scientific Name</b>	<b>Category</b>
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>Dalbergia sissoo</i>	Tree
6	Jhingan	<i>Lannea coromandelica</i>	Tree
7	Palash	<i>Butea monosperma</i>	Tree
8	Babool/ Kikar	<i>Vachellia nilotica</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>Magnifera 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>Salvadorapersica</i>	Initial years Shrub & after Tree
29	Dhonk/Dhauk/Dhok	<i>Anogeissus pendula</i>	Tree
30	Gum Arabic	<i>Acacia Senegal/Senegaliasenegal</i>	Tree
31	Karanj	<i>Millettia pinnata</i>	Tree
32	Harshingar	<i>Nycanthes arbor-tristis</i>	Shrub
33	Karir	<i>Capperis decidua/ Capparis decidua</i>	Shrub
34	Vasaka	<i>Justicia adhatoda</i>	Shrub
35	Karonda	<i>Carissa carandas</i>	Shrub

36	Guggul	<i>Commiphora wightii</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 Narendra Modi 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 Narendra Modi 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, ***Dharat Suhavi Environment Society*** and **Campus Beautification Committee** which work towards raising environmental consciousness to achieve sustainability towards biodiversity and maintain greener campus.

#### ***Dharat Suhavi Environment Society***



The Environmental Society was renamed as *Dharat Suhavi 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 sq ft 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 even 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 College took a big stride in reducing the Carbon Footprint of the region through a novel idea of creating a mini forest on-campus with an objective to promote sustainable environment. It has been aptly named ‘Guru Nanak Sacred Forest’, commemorating the 550<sup>th</sup> Birth Anniversary of Guru Nanak Dev ji. 550 native species of trees were planted as a tribute to Guru Nanak Dev ji’s ideology to live in harmony with the environment. This mini urban forest, aiming to provide holistic and multidisciplinary education, falls in congruence with the basic essence of National Education Policy 2020. The amalgamation of tradition and modernity provides a sound solution to biodiversity conservation and sustainability.

This habitation has now 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. It will help in creating 30 times more oxygen than regular plantation and it is developing into a hub of biodiversity. It is a major step in reducing the Carbon Footprint of the region. This is a significant contribution towards the Biodiversity Target 2020 of the Government of India NBT (National Biodiversity) Project which stresses on the need to spread awareness among youth to play a positive role for the restoration, conservation and sustainable use of the vulnerable ecosystem.

The creation of the mini urban forest in the College will also be of great significance towards documentation and preservation of genetic heritage. To reach this target a study and documentation of traditional ways of collecting and storing seeds of native species has been initiated. It involves how tiny forest spaces can act as safe refuges for insects, birds and other fauna that are gradually disappearing from the ecosystem. It will contribute towards the Environment related policies of the Government by mobilising people with foresight from academia, youth, government and private agencies.

In the true sense of trans-disciplinary experiential education, it involved the disciplines of Humanities and Sciences. Students of NCC, NSS, graduate, postgraduate and doctoral levels

studying in this Institute and other colleges under Panjab University, Chandigarh, students belonging to various regions of India and different socio-cultural backgrounds, considerable number of foreign students studying in our Institute were involved in creating this forest. They are the future Ambassadors of Environment who will work together to realise the shared vision of environmental sustainability. Transcending borders and institutions, several government agencies, private companies and NGOs also joined in implementing the novel idea, making this endeavour more inclusive and intersectional. The College received total sponsorship of Rs 1,46,100/- from eight sponsors for setting up the forest.

- **Three Day Workshop for Creation of Guru Nanak Sacred Forest: A Mini Urban Forest with Native Trees**

A three-day Workshop from April 01-03, 2019, was organised to create the mini urban forest in collaboration with EcoSikh and Afforest International organisations committed to promote environmental awareness. Students and faculty from various institutes of the region participated in this workshop for hand-on training. On day one, students and faculty visited Nepli Forest in the vicinity to study and enlist the native species of trees of the region.



On day two, an area of 180 sq. meters on campus was identified and prepared for the creation of the Mini-Urban Forest with the enthusiastic participation of the students and faculty.



### **Identification and Preparation of the area for Mini Forest**

On day three , tree planatation was carried out by members of Management, faculty and students accompanied by recitation of Shabad Kirtan related to ecology from *Gurbani* rendered by renowned Hazuri Raagi. 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 was created by grouping the plants into different layers- shrub, sub tree, tree and canopy – in each sq m.



**Plantation by Dignitaries and Faculty during creation of mini forest**



**Plantation by students during creation of mini forest for hand-on training**

- **Collaboration with Government and Non-Government Organisations**

Various dignitaries both International and National have visited the mini forest and highly appreciated the efforts of the College. Mr Debendra Dalai, IFS Chief Conservator of Forests & Chief Wildlife Warden, Chandigarh, Dr Dalip Kumar, ASPD RUSA, District Forest Officers of Punjab and SES Executive members along with participants planted 550 saplings in the Guru Nanak Sacred Forest while Bhai Manpreet Singh Kanpuri rendered *Shabad Kirtan* from *Gurbani*. District Forest Officers of Punjab and Haryana along with farmers also attended the workshop. During the session, the Sacred Forest was visited by S Kahan Singh Pannu, IAS Secretary, Agriculture & Soil Conservation & Mission Director, Punjab and Commissioner, Food & Drug Administration and Director, Environment & Climate Change; Mr K S Sangha IAS, Secretary, Punjab State Agricultural Marketing Board and Secretary, Punjab State Rural Development Board; Mr Kanwarpal Gujjar, Minister of Education, Forests and Tourism, Haryana; Dr (Mrs) Amrinder Kaur IFS, Principal Chief Conservator Forests Haryana; Mr T P Singh, IFS, Chief Conservator Forests, Haryana, also an alumnus of the College; Mr Alok Verma, IFS Asstt Principal Chief Conservator Forests & Wild Life , Haryana; S Kundan Singh, father of S Harjit Singh Sajjan, Minister of National Defence and Member of Parliament, Canada; S Jaswant Singh Khaira, Secretary Akal College Council, Gurusagar Mastuana Sahib, Punjab and Mr Aditya Sharma, Hydrometrologist, Central Ground Water Board, Chandigarh visited along with his team on the occasion of World Sikh Environment Day. 30 students from local Government schools visited the mini urban forest on the occasion of 150<sup>th</sup> Birth

Anniversary of Mahatma Gandhi from Aug 12-15, 2019 under the aegis of Nehru Yuva Kendra, Chandigarh, Ministry of Youth Affairs and Sports, Govt of India.

## *Eminent Guests*



Mr Kanwarpal Gujjar, Minister of Education, Forests and Tourism, Haryana accompanied by Dr (Mrs) Amrinder Kaur IFS, Principal Chief Conservator Forests Haryana, Mr T P Singh, IFS, Chief Conservator Forests, Haryana and Mr Alok Verma, IFS Asstt Principal Chief Conservator Forests & WildLife, Haryana visiting Guru Nanak Sacred Forest



S Kundan Singh, father of S Harjit Singh Sajjan, Minister of National Defence and Member of Parliament, Canada alongwith S Jaswant Singh Khaira, Secretary Akal College Council, Gurusagar Mastuana Sahib, Punjab inaugurating the Observation and Research Centre of Guru Nanak Sacred Forest



Mr Debendra Dalai, IFS Chief Conservator of Forests & Chief Wildlife Warden, Chandigarh and Dr Dalip Kumar, ASPD RUSA, District Forest Officers of Punjab.



S Kahan Singh Pannu, IAS Secretary, Agriculture & Soil Conservation & Director, Environment & Climate Change visiting Guru Nanak Sacred Forest



S Kamaldeep Sangha IAS, Secretary, Punjab State Agricultural Marketing Board and Secretary, Punjab State Rural Development Board visiting Guru Nanak Sacred Forest



Mr Aditya Sharma, Hydrometrologist, Central Ground Water Board, Chandigarh visited Guru Nanak Sacred Forest along with his team on the occasion of World Sikh Environment Day.

**Present Day view of Guru Nanak Sacred Forest: A Mini Urban Forest with Native Trees**



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

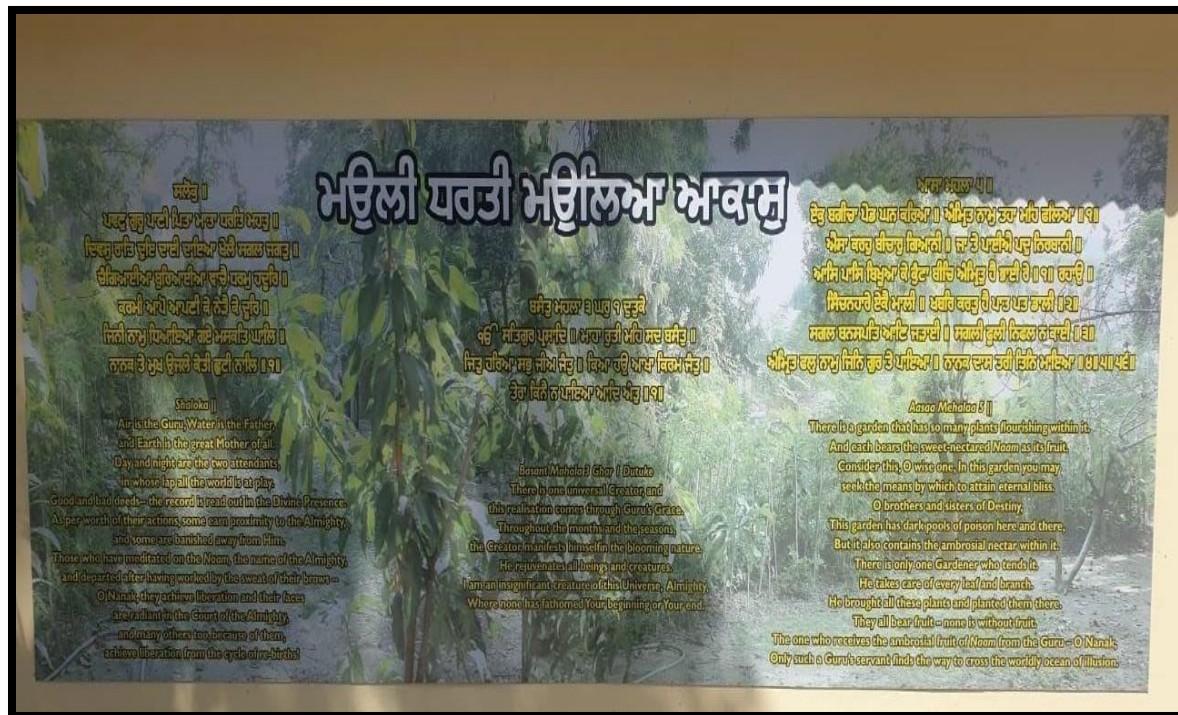
Observation and Research Centre, GNSF

Commemorating 550 <sup>th</sup> Birth Anniversary of Guru Nanak Devji											
ਗੁਰੂ ਨਾਨਕ ਪ੍ਰੀਤਿਤਰ ਜੰਗਲ											
GURU NANAK SACRED FOREST											
SRI GURU GOBIND SINGH COLLEGE, CHANDIGARH											
PICTURE	COMMON NAME	BOTANICAL NAME	TYPE	PICTURE	COMMON NAME	BOTANICAL NAME	TYPE	PICTURE	COMMON NAME	BOTANICAL NAME	TYPE
	Semai ਬੰਬ	<i>Bombax ceiba</i>	Canopy		Desi Mango ਦੇਸੀ ਆਂਢ	<i>Mangifera indica</i>	Tree		Chamrer ਚਮਰ	<i>Ehretia laevis</i>	Sub tree
	Bahela ਬਾਹਲਾ	<i>Terminalia bellerica</i>	Canopy		Harad ਹਰਦ	<i>Terminalia chebula</i>	Tree		Khara Jal Pila ਖਰਾ ਜਲ ਪੀਲਾ	<i>Salvadora oleoides</i>	Sub tree
	Arjun ਅਰਜੁਨ	<i>Terminalia arjuna</i>	Canopy		Madhu ਮਧੂ	<i>Madhuca longifolia</i>	Tree		Meeha Jal ਮੀਹਾ ਜਲ	<i>Salvadora persica</i>	Sub tree
	Phulai ਫੁਲੀ	<i>Acacia modesta</i>	Tree		Pikhan ਪਿਕਾਣ	<i>Ficus virens</i>	Tree		Kari ਕਾਰੀ	<i>Capparis decidua</i>	Sub tree
	Sheesham ਸ਼ੀਸ਼ਮ	<i>Dalbergia sissoo</i>	Tree		Neem ਨੀਮ	<i>Azadirachta indica</i>	Tree		Dhank ਧਾਂਕ	<i>Anogeissus pendula</i>	Sub tree
	Jhingam ਝੰਗਮ	<i>Lannea coromandelica</i>	Tree		Peepal ਪੀਪਲ	<i>Ficus religiosa</i>	Tree		Gum ਗੁਮ	<i>Acacia senegal</i>	Sub tree
	Palash ਪਾਲਾਸ਼	<i>Butea monosperma</i>	Tree		Bargadi ਬਰਗਦੀ	<i>Ficus benghalensis</i>	Tree		Karanj ਕਰਾਨਜ	<i>Millettia Pinnata</i>	Sub tree
	Kikar ਕਿਕਰ	<i>Vachellia nilotica</i>	Tree		Lasura ਲਸੂਰਾ	<i>Cordia myxa</i>	Tree		Vasaka ਵਾਸਕਾ	<i>Justicia adhatoda</i>	Shrub
	Sahanjan ਸਹਾਜਾਨ	<i>Moringa concanensis</i>	Tree		Amolhas ਅਮੋਲਾਸ਼	<i>Cassia fistula</i>	Sub tree		Karenda ਕਾਰੇਂਦਾ	<i>Carissa carandas</i>	Shrub
	Jond ਜੋਂਦ	<i>Prosopis cineraria</i>	Tree		Guggul ਗੁਗੁਲ	<i>Commiphora wightii</i>	Shrub		Niguggul ਨੀਗੁਗੁਲ	<i>Vitex negundo</i>	Shrub
	Rohda ਰੋਹਦਾ	<i>Tecomaella undulata</i>	Tree		Khej ਖੇਜ	<i>Acacia catechu</i>	Sub tree	550 Saplings with 37 Species of Native Trees Area: 180 Sq Metres Density: 3.6 Saplings Per Sq Metre Established : April 03, 2019			
	Jamun ਜਮੁਨ	<i>Syzygium cumini</i>	Tree		Harshingar ਹਰਸ਼ਿੰਗਰ	<i>Nyctanthes arborescens</i>	Sub tree				
	Gular ਗੁਲ	<i>Ficus racemosa</i>	Tree		Lasora ਲਸੂਰਾ	<i>Cordia dichotoma</i>	Sub tree				



**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*.



- **Plantation of Native Trees**

***Desi Beriyan* Planted to Promote Biodiversity:** Saplings of *Desi Beriyan (Zizyphus sp.)* were planted on Aug 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 400<sup>th</sup> Birth Anniversary of Sri Guru Tegh Bahadur ji.



The College collaborated with Beerh Mallan Society, Sri Muksar 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.



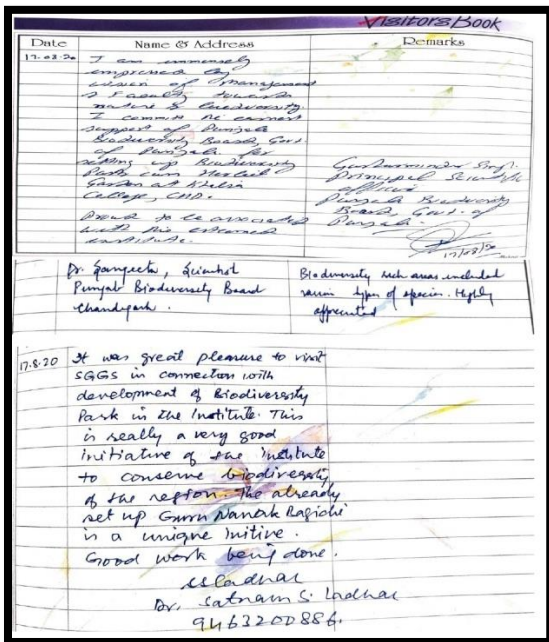
*Triveni (Neem, Peepal and Bohar)*



*Jungle Jalebi*

• **Recent Visits 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.



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

**Mr Gurmahinder Singh (Principal Scientific Officer, Punjab Biodiversity Board, Govt of Punjab) Aug 17, 2020**

I am immensely impressed by vision of Management and Faculty towards nature and biodiversity. I commit my earnest support of Punjab Biodiversity Board, Govt. of Punjab for setting up Biodiversity Park cum Herbal Garden at Khalsa College, Chandigarh.

**Dr Satnam S. Ladhar (Principal Scientific Officer, Punjab Biodiversity Board, Govt of Punjab) Aug 17, 2020**

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 Guru Nanak Bagichi is a unique initiative. Good work being done.

**Dr Sangeeta (Scientist, Punjab Biodiversity Board, Govt of Punjab) Aug 17, 2020**

Biodiversity rich areas included various types of species. Highly appreciated.

- 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**



## **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 Green House** is constructed in the College with the dimension of 10x6 m<sup>2</sup> with the GI pipe and green shade net. It is used to shield green plants from extreme environmental conditions and prepare seedlings.

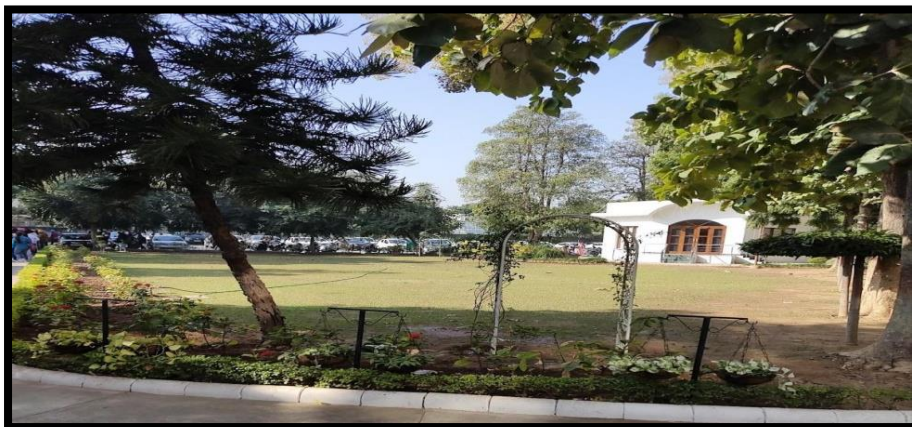


**Solar Green House in Botanical Garden**

### 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**

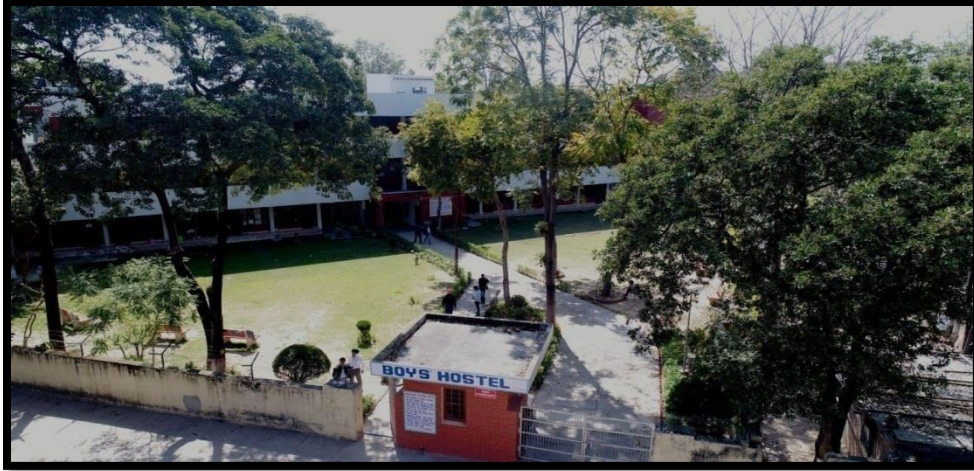


**vi. Sports Grounds**



**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



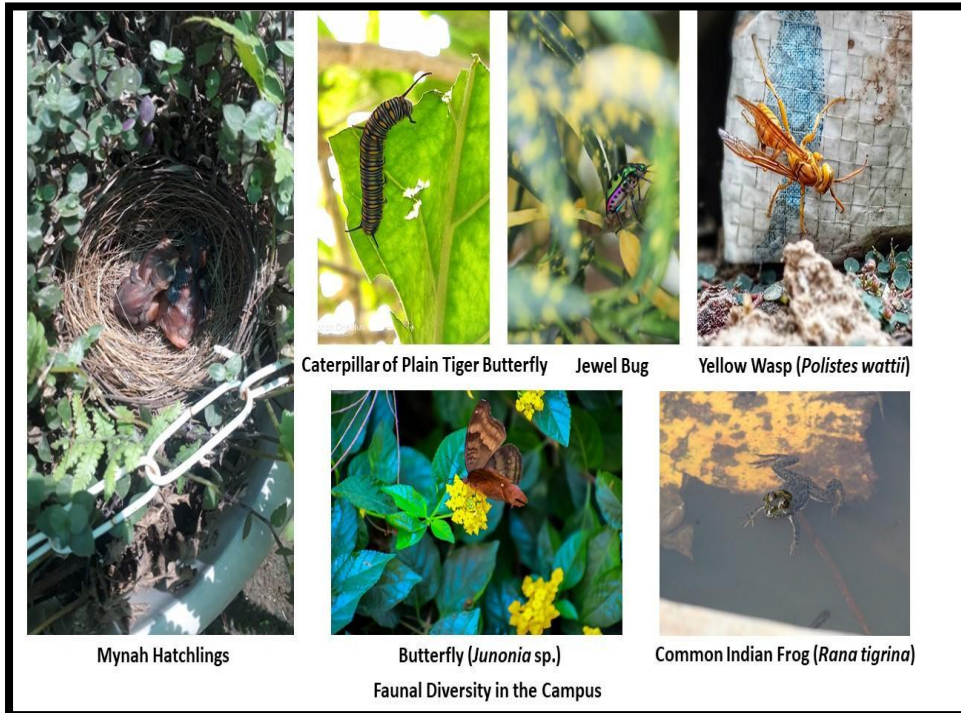
BUTTERFLY



*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



#### **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.



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 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**

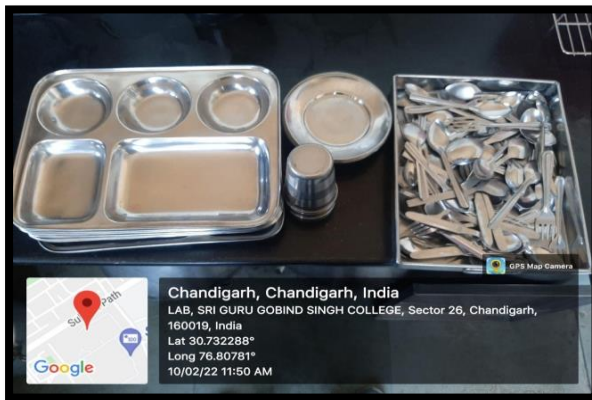
The biomedical waste generated from bacterial culture is autoclaved at 121°C under 15 lbs pressure for 30 minutes before being disposed of to contain the spread of unwanted bacterial cysts and spores.



**Autoclave equipment in Biotechnology Laboratory**

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

i. **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. **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



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

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

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

- iv. **Two Day Donation Stall** was put upon on the Founder’s Day Celebrations, on Jan 27– 28, 2020, to promote the concept of ‘reduce, reuse and recycle’, whereby students and faculty donated old and reusable items. About 150 kg of material including books, clothes, toys and crockery etc. was channelised through Social Substance to ‘Developing Indigenous Resource Charitable Trust’ to be distributed among the underprivileged. Social Substance extended appreciation to efforts of Team *Dharat Suhavi* Environment Society.
- v. **Inter-College Poster Making Competition** on the theme ‘Covid-19 – The New Normal’ was organised on May 25, 2020 to encourage students to be more creative during the lockdown. As many as 280 entries were received from all over India.



- vi. **Intra-College Best-Out-of-Paper Waste Competition** on the theme ‘Raddi Se Pragati’ was organised in collaboration with Prasanchetas Foundation to celebrate World Environment Day on Jun 05, 2020. A total of 20 NSS volunteers of the College came up with innovative ideas on how to use waste to make needful things used in day-to-day life.
- vii. **Workshop on ‘Waste Segregation’** was organised in collaboration with Department of Botany, NCC Army and Naval Wing on Sep 26, 2019 in order to celebrate the Green Consumer Day and Mega Swachhta Pakhwada. Cloth-bags were distributed among the students in order to shun the use of plastic bags, to support employment generation and waste management. The event was concluded by screening the famous ‘How Dare You?’ speech of

16-year old Swedish environmentalist, Greta Thunberg. In order to inculcate waste segregating habits amongst the students, separate green-blue dustbins for wet and dry waste were installed in the campus.

- viii. **Workshop on Waste Management and Segregation** was organised on Nov 22, 2018. Ms Kavleen Kaur, SDO, MC Chandigarh and Ms Jyoti Arora from Daily Dump Organisation imparted information regarding waste management. Multiple techniques and strategies to combat waste was discussed along with Zero Waste, Blue-Green oath etc.
- ix. **Expert talk on ‘Waste to Wealth- Value Recovery from Agro-residues and Processing Wastes’** was organised by the Environmental Society in collaboration with Department of Environment, Chandigarh delivered by Dr Bhuwan Bhushan Mishra, Scientist, Centre of Innovative and Bio-processing, Mohali on Feb 22, 2018 for undergraduate and postgraduate students. Around 250 students and 25 faculty members attended the expert talk. On the same day Bio Rangoli, Slogan Writing and Poetry Recitation competitions were also held on the theme ‘Environment Conservation and Drug Abuse’ to observe Environment Activity Day. Students of SGGSC-26 and GGSCW-26 participated enthusiastically and recited inspirational poems, displayed fascinating slogans and made beautiful Rangolis. Environmental Pledge was also administered to the participants
- x. **Slogan Writing and a lecture on ‘Anti- Polythene’**: On Aug 8, 2017, NSS units of the College organised a slogan writing competition on ‘Anti-polythene’ followed by a campus rally and a presentation on the topic - ‘PLASTIC BAGS: An awful load of Rubbish’.
- xi. **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.



- ii. **Expert Lecture on 'Water Management'** was organised by the Environmental Society in collaboration with Punjab State Council of Science and Technology, Chandigarh by Prof UN Roy, Head, Deptt of Rural Development, NITTTR, Sec 26 Chd on Feb 18, 2017. Students actively participated in Caption Writing Contest organised on the occasion. They also performed skits on the theme 'Save Earth'.
- iii. 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.
- iv. Treated tertiary water is used for watering the lawns, herbal garden and playgrounds. This helps in preventing the wastage of potable fresh water.
- v. Grey water generated from washrooms is connected to Municipal Corporation Sewage system with well maintained drainage system of the College.
- vi. To overcome water shortage, watering cans are used for irrigation instead of water pipes
- vii. The water dripping from the air conditioners of the administrative office is used to water the plants in front of the Administrative office.
- viii. Overflowing of rooftop tanks is avoided with the floaters.

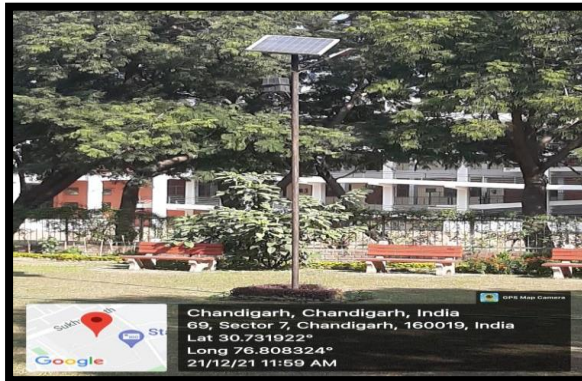
- **Energy Management**

- 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.



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

- 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.
- Restoration of native and heritage plant habitat vital to preserving biodiversity
- 100 % organic, zero pesticides
- Natural biodiversity habitat for pollinators
- More CO<sub>2</sub> absorption and sequestration
- SPM reduction and ground water recharge
- Soil conservation
- 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 forest has provided a platform for interdisciplinary 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.

- **Minor Research Projects**

Name of Project	Name of Principal Investigator/ Co-Investigator	Department	Funding Agency
Development of Carbon Nano Tube Based Biodegradable Inkjet Printer Electrodes for Routine Analysis of Hemoglobin Feb2020	Dr Pushpinder Kaur (Co-PI)	Chemistry	DST Renewal Energy Chandigarh Administration
Comparing The Efficacy of Vermicomposting and Bacterial Composting Units Supplemented on Fallen Tree Leaves of Chandigarh Oct 2019	Dr Kawalpreet Kaur (PI)	Botany	DST Renewal Energy Chandigarh Administration

Evaluation of Healthcare Infrastructural Facilities For Cancer Patients of Cotton Belt of Punjab Mar 2019	Dr Kanwaljeet Kaur Marwaha (PI) and Dr AP Singh (Co-PI)	Economics (PI) and Zoology (Co-PI)	ICSSR
Potential Threat To Standing Trees of Chandigarh By Bracket Fungi Oct 2018	Dr Kawalpreet Kaur (PI)	Botany	DST Renewal Energy Chandigarh Administration
To Study Butterfly Diversity of Chandigarh; and Also its Seasonal Succession <i>vis-a-vis</i> Nectar and Host Plants Oct 2018	Dr AP Singh and Dr Jasvir Kaur	Zoology (PI) and Botany (Co-PI)	DST Renewal Energy Chandigarh Administration
Extraction And In-Vitro Evaluation of Antitumor And Antibacterial Activity of Bioactive Constituents From Local Fruit Waste of Chandigarh	Dr Pushpinder Kaur (PI) and Dr Satinder Kaur (Co-PI)	Chemistry (PI) Biotechnology (Co-PI)	DST Renewal Energy Chandigarh Administration

• **Published Research Papers/Book Chapters**

Name of Paper	Name of Teacher	Name of Department	Name of Journal	Link to article/paper/abstract of the article
Distinction of Two Featherback Species (Osteoglossiformes: Notopteridae) in India Based on Scale Structure Jun,2020	Dr Inderpal Singh Sidhu	Zoology	Records of the Zoological Survey of India	<a href="http://www.recordssofzsi.com/index.php/zsoi/article/view/152790">http://www.recordssofzsi.com/index.php/zsoi/article/view/152790</a>
Stock Structure Delineation of an Endangered Mahseer, <i>Tor Putitora</i> (Teleostei: Cyprinidae) from Two Indian Rivers by Morphological and Meristic Attributes Dec,2020	Dr Inderpal Singh Sidhu	Zoology	Iranian Society of Ichthyology	<a href="http://www.ijichthyol.org/index.php/iji/article/view/7-4-5/324">http://www.ijichthyol.org/index.php/iji/article/view/7-4-5/324</a>
Environment reporting practices - A case study of Indian pharmaceuticals companies Dec,2019	Ms Abhineet Kaur	Commerce	Think India Journal	<a href="https://thinkindiaquarterly.org/index.php/think-india/article/view/13365/8618">https://thinkindiaquarterly.org/index.php/think-india/article/view/13365/8618</a>

Cancer prevalence: A study of cotton belt of Punjab state Mar,2020	Dr Kanwaljit Kaur	Economics	Studies in Indian Place Names	<a href="#">Screenshots attached in PDF</a>
Bharatiya dharmon mein paryavaran sarankshan Mar,2020	Dr Sukhjinder Kaur	Religious and Sikh Studies	Parishodh	<a href="#">Screenshots attached in PDF</a>
Seasonal biochemical changes in three species of liverwort Plagiochasma of Mandi (Himachal Pradesh), India Dec,2018	Dr Kanchan Devi	Botany	Journal of Applied and Natural Science	<a href="https://journals.ansfoundation.org/index.php/jans/article/view/1854">https://journals.ansfoundation.org/index.php/jans/article/view/1854</a>
Redescription of three species of genus Stomrhina rondani (Diptera: Calliphoridae) from India Dec,2019	Dr Inderpal Singh Sidhu	Zoology	Halteres	<a href="#">Screenshots attached in PDF</a>
Taxonomic studies on the genus Cosmina robineau-Desvoidy (Diptera: Calliphoridae) from North-West India Mar,2018	Dr Inderpal Singh Sidhu	Zoology	Annals of Agri Bio Research	<a href="#">Screenshots attached in PDF</a>
Studies on three species of the genus Rhycomya robineau-Desvoidy (Diptera: Calliphoridae) from North-West India 2018	Dr Inderpal Singh Sidhu	Zoology	Journal of Advanced Zoology	<a href="#">Screenshots attached in PDF</a>
Deciphering the competence of microbial isolate in synthetic consortium for Dairy Wastewater Treatment Jul,2017	Dr Sonia Chaman	Biotechnology	International Journal of Pharma and Bioscience	<a href="http://dx.doi.org/10.22376/ijpbs.2017.8.3.b1109-1114">http://dx.doi.org/10.22376/ijpbs.2017.8.3.b1109-1114</a>
Green Computing : An Ecofriendly Approach to Manage E-waste Feb,2018	Ms Khushwant Kaur, Ms Meena Gupta and Ms Anu Kaul	Computer Sciences	International journal of scientific research in computer science, engineering and information technology	<a href="https://ijsrcseit.com/CSEIT1831483">https://ijsrcseit.com/CSEIT1831483</a>



Effect of Surfactant and Natural Coagulant on Biodegrading Capability of Bacterial Isolates from Dairy Effluent Oct-Dec,2016	Sonia Chaman	Biotechnology	International Journal of Research in Electronics and Computer Engineering (IJRECE)	<a href="http://www.i2or-ijrece.com/vol.-4-issue-4.html">http://www.i2or-ijrece.com/vol.-4-issue-4.html</a>
Vimarsh ke Canvas par Pryavaran Aug,2016	Dr Anish Kumar	Hindi	New Horizons	<a href="http://newhorizonsjournal.com/pdf/nh2016.pdf">http://newhorizonsjournal.com/pdf/nh2016.pdf</a>
Efficacy of Plant Aerva Tomentosa on the Percentage of Damaged Grains of Triticum Vulgare Infested by the Beetle Tribolium Castaneum' Dec,2016	Dr Amandeep Kaur Mann	Zoology	Indian Journal of Applied Research	<a href="https://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/recent-issues-pdf/2016/December/December_2016_14809283_85_273.pdf?msclid=1Furfhe8BFbkEhXn1xcYPr8jYAACNpfV7p">https://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/recent-issues-pdf/2016/December/December_2016_14809283_85_273.pdf?msclid=1Furfhe8BFbkEhXn1xcYPr8jYAACNpfV7p</a>

- **Paper/ Poster Presentations:**

Faculty attended and organised various seminars, symposia and conferences and presented papers 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.

### **2020-21**

Dr Navjot Kaur (PG Deptt of English) presented a paper on 'Ecological Restoration through Mini Urban Forests created Native Species of Trees' at the National Conference on Environment, Human Health and Sustainable Development and World Environment Day 2020 organised by ESDA Delhi, Jun 05-06, 2020.

### **2019-20**

**Papers presented by faculty at Two Day International Conference on Road Map to Sustainability: Environment & Health, Mar 05-06, 2020 organised in the College on Mar 06-07, 2020:**

- i. Dr Navjot Kaur (PG Deptt of English) presented paper on ‘Afforestation and Conservation of Native Species to tackle Climate Change: A Practical Strategy adopted by Sri Guru Gobind Singh College, Chandigarh’ which was declared as ‘Best Paper’ in the conference.
- ii. Dr Satinder Kaur (PG Deptt of Biotechnology) presented a paper ‘Screening of Fruit and Vegetable Waste for Bioactive Compounds Having Therapeutic Potential’.
- iii. Dr Sonia Batta (PG Deptt of Biotechnology) presented a paper ‘Lignocellulose Degradation by Fungi Isolated from Rice Straw’
- iv. Dr Jyoti Dadwal and Dr Rakhee (PG Deptt of Biotechnology) presented a paper on ‘Screening and Analysis of Polythene Degrading Microorganisms from Soil’
- v. Dr Var Ruchi Sharma (PG Deptt of Biotechnology) presented a paper ‘Bioinformatics and its Applications in Environmental Science’
- vi. Dr Kawalpreet Kaur (Deptt of Botany) presented a paper on ‘Efficacy of Spirulina against Cancer’. She also presented a poster on ‘Biodiversity’ on Biodiversity Day at Panjab University Chandigarh, May 22, 2019.
- vii. Dr Inderpal Pasricha (PG Deptt of Chemistry) presented a paper ‘Afforestation and Conservation of Native Species to Tackle Climate Change: A Practical Strategy Adopted by Sri Guru Gobind Singh College, Chandigarh’
- viii. Dr Pushpinder Kaur (PG Deptt of Chemistry) presented a paper ‘Screening of Fruit and Vegetable Waste for Bioactive Compounds Having Therapeutic Potential’
- ix. Dr Kirtanjot Kaur (PG Deptt of Chemistry) presented a paper ‘Role of Nanocomposites as Environment Cleaner’
- x. Dr Seema Mahajan (PG Deptt of Commerce) presented a paper on ‘Earnings Quality and Voluntary Environment Disclosures: A Literature Review’.
- xi. Dr Manjinder Singh and Ms Sharandeep Kaur (PG Deptt of Commerce) presented a paper titled ‘Literature on Sustainability Reporting in India: Bibliometric Analysis from 2005-2020’

- xii. Ms Pooja Bhagwan (PG Deptt of Commerce) presented a paper ‘Study of the Effect of Financial and Environmental Education on Environmental Awareness’
- xiii. Dr Kanwaljit Kaur Marwaha (PG Deptt of Economics) presented a paper on ‘Cancer Prevalence: A Study of Cotton Belt of Punjab State’. She also presented a paper on ‘A Comparison of Pattern of Agriculture in Two Asian Economies- China and India’ at the 102 Annual Conferences of IEA, Surat, Dec 27-29, 2019.
- xiv. Dr Sandeep Kaur and Ms Rupinder Aulakh (Deptt of Public Administration) ‘Rural Development through Sustainable Tourism in India: An Overview of Prospects and Interventions’.
- xv. Dr Sukhjinder Kaur (Deptt of Religious and Sikh Studies) presented a paper on ‘Environment Safety in Indian Religion’
- xvi. Dr IPS Sidhu (PG Deptt of Zoology) presented a paper on ‘Stubble Burning: Major Challenge for Sustainability’
- xvii. Dr Pooja Badotra presented a paper on ‘Varroa Mites: A Major Threat to Apicultural Industry’.
- xviii. Dr Ruchira Sen (PG Deptt of Zoology) presented a paper ‘Colony Collapse Disorder: Is Organic Farming the Solution?’.
- xix. Dr Saranjeet Kaur (PG Deptt of Zoology) presented a paper ‘Efficacy of Spirulina against Cancer’
- xx. Dr Seema Sood (PG Deptt of Zoology) presented a paper ‘Role of Flagship Species in Biodiversity Control Strategies’

**Papers presented in other seminars/conferences in 2019-20:**

- i. Dr Taranjit Rao (PG Deptt of Commerce) presented a papers on ‘Green HR Practices for Sustainable Development’ at National Seminar on Green Business Practices for Sustainable Development’ organised by Government PG College for Women, Panchkula, Feb 05, 2020.
- ii. Dr Sandeep Kaur (Deptt of Public Administration) presented a paper on ‘Effects of Cultural Transition in Fostering Sustainable Development: Indian Context’ in ‘2-Days National

Seminar on The Interlinkages Between Poverty, Population and Environment: Challenges and Opportunities' organised by Department of Sociology, PU Chandigarh, Mar 3-4, 2020.

- iii. Ms Rupinder Aulakh (Deptt of Public Administration) presented a paper on 'Environment Degradation and Women: An Overview of Opportunities and Challenges in Contemporary India' in '2-Days National Seminar on The Interlinkages Between Poverty, Population and Environment: Challenges and Opportunities' organised by Department of Sociology, PU Chandigarh, Mar 03-04, 2020
- iv. Dr Ruchira Sen (PG Deptt of Zoology) presented a poster 'Use of Biotechnology in non-human Agriculture' at DBTCTEP Biotechnology Popularisation Programme, MCM DAV College for Women, Chandigarh, Sep 18, 2019.

### **2017-18**

- i. Dr Kanwaljit Kaur (PG Deptt of Economics) presented a paper on 'Green Marketing A Way towards better environment' at 'National Seminar on Business Strategies for Excellence in Emerging Economies' sponsored by SGPC Amritsar, organised by Guru Nanak College, Budhlada, Mansa on Apr 22, 2017.
- ii. Dr Sachna Arora (Deptt of Political Science) presented 2 papers: 'Forgotten Issue of Environmental Pollution in Punjab Politics: A Critical analysis of Manifestoes of Political Parties of Punjab' at ICSSR sponsored National Seminar on Punjab Agriculture Emerging Challenges and Future Possibilities organised by Centre for Historical Studies, Lyallpur Khalsa College, Jalandhar, Mar 07, 2018 and 'Gandhi Swaraj: Relevance in Environment Sustainability' at ICSSR sponsored International Seminar on Sustainable Development, Gandhian Legacy and 21st Century Challenges organised by Department of Gandhian & Peace Studies, PU Chandigarh, Mar 09-10, 2018.

### **2016-17**

- i. Ms Anupama Bhardwaj (PG Deptt of Biotechnology) presented a posters titled: 'Treatment of Dairy Wastewater by Native Bacterial Isolates' at 2-day National Symposium (BioCamp 2016) on Current Trends and Future Prospects in Biotechnology organised by UIET, PU, Chandigarh on Nov 10-11, 2016.

- ii. Dr Jyoti Dadwal (PG Deptt of Biotechnology) presented a poster titled: ‘Isolation and Characterization of Sulfosulfuron Degrading Bacteria from Contaminated Soils’ at One Day National Conference on Emerging Trends in Biotechnology: A Paradigm shift to Cleaner and Greener India at GSSDGS Khalsa College, Patiala on Oct 08,2016.
- iii. Dr Sonia Chaman (PG Deptt of Biotechnology) presented 3 posters titled: ‘Study of Antimicrobial Activity of Hydrophytes by Agar Diffusion Method’ at one-day National Conference on Emerging Trends 22 in Biotechnology : A Paradigm shift to Cleaner and Greener India organised by Khalsa College, Patiala on Oct 8,2016; ‘Characterization of Metal and Antibiotic Resistance in Microorganism Isolated from Soil Sample’ at 2-day National Conference on Recent Advances of In Silico Analysis: Role in Plant Stress Biology organised by Lyallpur Khalsa College, Jalandhar on Oct 27-28, 2016 and ‘Study of Antimicrobial Activity of Cinnamomumverum’ at 2-day National Symposium(Bio-Camp 2016) on Current Trends and Future Prospects in Biotechnology organised by UIET, PU, Chandigarh on Nov 10-11, 2016.
- iv. Dr Anita Chhatwal, Librarian, presented a poster titled ‘Mapping of World research output on Nanotechnology during 2006-2016’ in National Seminar on Emerging Trends in Nanoscience and Nanotechnology organised by Guru Gobind Singh College for Women, Sector-26, Chandigarh on Feb 18, 2017.

- **International Conference organised:**

An International Conference was organised on the theme ‘Roadmap to Sustainability: Environment and Health’ sponsored by ICSSR from Mar 05 – 06, 2020. A Panel discussion on ‘Sustainable Environment’ was conducted on Mar 06, 2020. The Panellists put forward their views on the burning issue of environment degradation and farmers’ plight including factors like chemical farming, paddy growing, monopolised selling of seeds.



**Panel Discussion on Sustainable Environment during the ICSSR-sponsored two-day International Conference on 'Roadmap to Sustainability: Environment and Health', March 05-06, 2020**

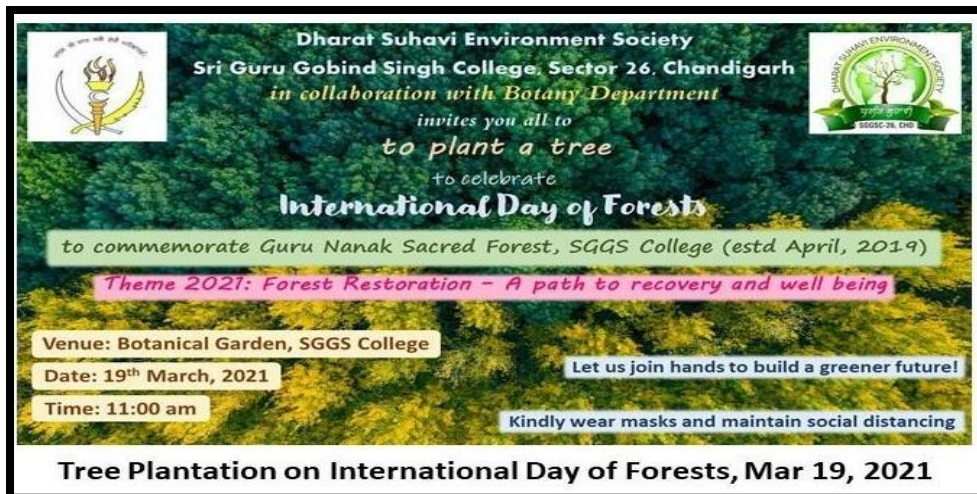
## **VII. Other Activities Conducted on Theme of Environmental Sustainability**

During last five years, the College has successfully engaged students and staff through various activities and has sensitised them about the significance of environment conservation and the ethics pertaining to prudent use of natural resources.

### **• Tree Plantation Drives**

The College conducted various tree plantation drives under Guru Nanak Sacred Forest Committee, *Dharat Suhavi* Environment Society, Campus Beautification 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. Tree plantation drive was carried out on Mar 14, 2020 to celebrate the International Day of Forests by planting saplings of Almonds, Babugosha, Causarina, Cherry, Chakotra, Chandan, Deodar, Jungle Jalebi, Kinnow, Laung, Nimbhu, Naspati and Shahtoot at botanical garden.



## 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, Environment Society, Campus Beautification Committee and Gurmat Vichar Sabha celebrates **Sikh Environment Day** on March 14<sup>th</sup>. To mark this occasion, medicinal plants are planted in different areas in the College. On Mar 14, 2021 Tree Plantation Drive with *Gurbani Kirtan* was conducted along with Environment Pledge.





Faculty and Students taking Environment Pledge

Tree Plantation Drive on Sikh Environment Day

### iii. Van Mahotsav

- a) **Van Mahotsav 2020** was celebrated by Tree Plantation of Golden Bottle Brush (ornamental tree) in the Bara Maha Garden of Biodiversity in the College on Jul 25, 2020 to enhance the aesthetic ambience of the College.



Tree Plantation of Golden Bottle Brush

**Adopt a Tree/Plant'** campaign was also 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.

<https://www.facebook.com/NSSSGGS26OFFICIAL/posts/2533999303557040>





b) **Van Mahotsav 2019** was commemorated by spreading awareness on the use of Medicinal Plants through an expert lecture on ‘Integrated Agrarian Lifestyle’, delivered by Dr Harinath Kasiganesa, renowned ex-DRDO scientist on Sep 02, 2019. He familiarised the audience with *Moringaoleifera* commonly known as Drumstick plant, which is used as an herbal medicine in treating arthritis, anaemia and high blood pressure. The Environment Society was re-named as Dharat Suhavi Environment Society and its official logo was released during the event.



**Dr Harinath Kasiganesa being felicitated after the lecture on Integrated Agrarian Lifestyles**

c) **Van Mahotsav 2018** was commemorated by organising ‘MulTREEply’- a Tree Plantation Drive on Jul 24, 2018. Plants of *Plumeriaalba* (Vern. Champa) were planted to adorn the Sports Ground.

d) **Van Mahotsav 2017** was commemorated by conducting a tree plantation in Botanical Garden and inauguration of the exotic Lotus Pond. The National Flower of India, the Lotus signifies supreme reality, purity, enlightenment and knowledge. Faculty members and students alike took an active part in the ceremony by planting various fruit trees. Models of birds and ducklings were placed to enhance the aesthetics and environment friendly ambiance of the Institution. A Tree Plantation Drive was conducted in the Herbal Garden in collaboration with PSCST, Chandigarh on Mar 08, 2017. Traditional plants were distributed among students.



Inaugration of Lotus Pond

Tree Plantation

e) **Van Mahotsav 2016** was commemorated by the Campus Beautification Committee in collaboration with the Department of Botany by organising a Tree Plantation Drive in the hostel campus on Aug 09, 2016. On the occasion they planted around 70 Ashoka plants, which hold great significance in the cultural tradition of the Indian subcontinent. NSS unit of the College also conducted tree plantation on Aug 18,2016.



- **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.

iii. *Dharat Suhavi* Environment Society of the College distributed herbal saplings like Parsley, Lemon Grass, Basil, Mint, Celery and Rosemary amongst the participants and the resource persons to promote the use of medicinal plants in daily life. This was an extension activity of the International Conference organised on the theme ‘Roadmap to Sustainability: Environment and Health’ sponsored by ICSSR from Mar 05 – 06, 2020.



**iv. Distribution of Saplings at Elante Mall:** Various herbal saplings were gifted to the visitors at Elante Mall by students and faculty members of Environment Society in association with NSS Unit of the College on Jun 05, 2019.



- **Commemorative Days and other Activities**

- **World Environment Day**

- a) **World Environment Day 2020** was celebrated by organising an Inter college photography competition was held by *Dharat Suhavi* Environment Society in collaboration with Gopa Foundation to commemorate the World Environment Day on Jun 05, 2020.



NSS unit of College celebrated World Environment Day on Jun 05, 2020 by organising Intra College ‘Best out of Waste Competition’ on the theme ‘Raddi Se Pragati’.

b) **World Environment Day 2019** was celebrated by Dharat Suhavi Environment Society on Jun 04, 2019 by planting saplings of *Plumeria alba* (Champa) in the College Campus and gifting saplings of Tulsi to the administrative staff.

- **Akshay Urja Diwas**

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



b) **Akshay Urja Diwas 2019** was celebrated by *Dharat Suhavi* Environment Society in collaboration with Physics Association and Department of Botany on Aug 29, 2019 sponsored by CREST, Chandigarh Administration, with a sanction of Rs 20,500/-. Prof Amrit Pal Toor, Ex-coordinator of Energy Research Center, PU Chandigarh, delivered an expert lecture on renewable sources of energy, highlighting the production and usage of bio-fuels. LED light bulbs were distributed to all participants and medals were awarded to the winners. PEDDA also organised a mobile exhibition to sensitise students on operations and maintenance of renewable energy devices. Students participated in various events such as, Slogan Writing, Poster Making, Eco-Rangoli, Photography, Power Point Presentation and Poetry Recitation.

• **Wildlife Week**

a) **Wildlife Week 2020** was celebrated by organising an Inter-College Poster Making Competition by PG Department of Zoology 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 held on Oct 02-08, 2020. 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, Convenor: Dr. IPS Sidhu,  
Principal, HOD, PG Dept. Zoology  
Organizing Team: Dr. Ruchira Sen and Dr. Saranjeet Kaur

**Make a poster - Win a prize!**

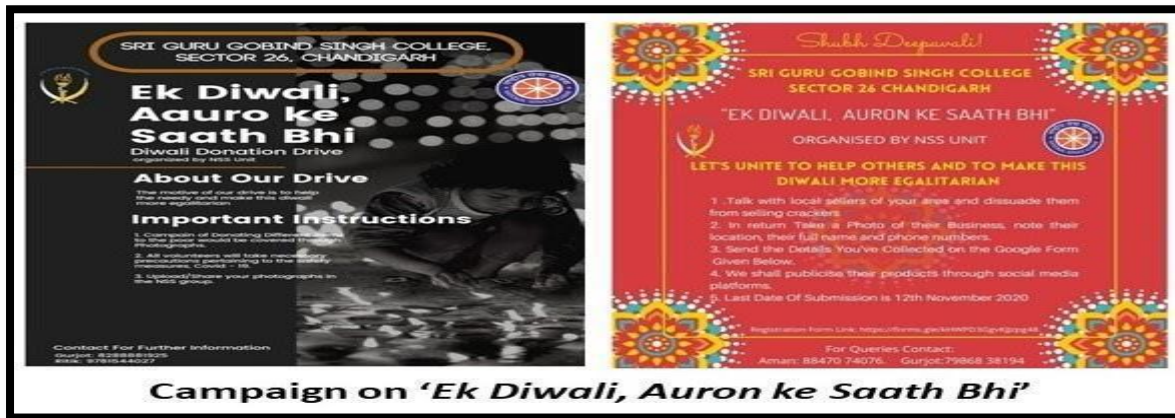
1. First Prize: 800/-  
2. Second Prize: 500/-  
3. Third Prize: 200/-  
4. All participants will get electronic certificates

**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 SGGG College

b) **Wildlife Week 2019** was observed by organising Nature Walk and Talk-cum-Photography Exhibition in collaboration with Department of Botany, Salim Ali Zoological Society and Natural Biodiversity Group, Chandigarh in the College to sensitise students about the importance of preserving flora and fauna.

- **Green Diwali**

a) **Green Diwali 2020:** A campaign on the theme *‘Ek Diwali, Auron Ke Saath Bhi’* 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.



b) **Green Diwali 2019** was celebrated by participation of NCC Cadets in a Mega Rally to increase awareness for preventing pollution in Diwali Festival. A total of about 300 students from different colleges and schools participated. The rally started from Sukhna Lake to the College premises.

<https://www.facebook.com/NSSSGGS26OFFICIAL/photos/pcb.2308753649414941/2308753626081610>

- **National Pollution Prevention Day**

a) **National Pollution Prevention Day 2020** 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’.



Power Point Competition was also organised from Jan 16-31, 2020 by the Environment Society in association with NSS on various themes such as Innovative Techniques for Recycling Waste, Water Conservation, Energy Conservation and Control of Environmental Pollution.

**b) National Pollution Prevention Day 2017** was observed by the Environment society in collaboration with Department of Science and Technology Chandigarh by organising various events like Collage Making and Slogan Writing competition for students on the theme ‘Clean and Green Environment for Better Future’ on Feb 03,2017 in the campus.

- **World Water Day** was observed on Mar 22, 2019 by the Environment Society in association with NCC Wing and NSS Unit of the college with poster making competition and carrying out a rally within the college campus. In order to check leakage of taps or any type of wastage of water and maintenance of water resources, a survey was conducted by the College students in the campus.

<https://www.facebook.com/NSSSGGS26OFFICIAL/photos/pcb.2095163444107297/2095163280773980/>

- **International Sparrow Day 2018** was celebrated by an initiative to spread awareness on the dwindling number of sparrows and ways to save the tiny birds on Mar 20, 2018 where lecture was delivered and water bath was placed in the Botanical Garden of College.





- **SBI Green Marathon** was organised in which 60 Volunteers along with a faculty member, participated in the marathon themed ‘Run to Make Chandigarh Greener’ held on Feb 10, 2019 at Lake Club, Chandigarh.



- **World Wetland Day & Oil Conservation Week**

a) **World Wetland & Oil Conservation Week 2020** was celebrated by a visit to Sukhna Lake jointly organised by the *Dharat Suhavi* Environment Society and Campus Beautification Committee on Feb 05, 2020. A student Rally was organised from the College till Sukhna Wetland. Students visited the Nature Park and witnessed the abundance of flora and fauna, their habitat and niche. Pooling of vehicles was also promoted during the event. Keeping in view the Oil Conservation Week and National Energy Conservation Day, in collaboration

with Dean Sciences, competitions pertaining to Poster Presentation and Model Making were conducted on Feb 27, 2020, to celebrate National Science Day.

b) **World Wetland & Oil Conservation Week 2019** was sponsored by CREST and PSCST and organised by the Dharat Suhavi Environment Society. Various competitions were organised including: Rangoli Making, Collage Making, Wonders of Science, Slogan Writing, Poster Making, Project Exhibition, Poster and Oral Presentation on Feb 28, 2019. Around 300 students from 7 science departments actively participated in different events.

- **Cleanliness Drives**

a) **Cleanliness Drive 2021:** A one-day ‘Campus Beautification and Cleanliness Drive’ was organised on Feb 12, 2021. Approximately 50 NSS volunteers took the ‘Swachhta Pledge’ 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.



b) **Swachhta Pakhwara 2019:** *Swachhta Pakhwara* was observed from Aug -Sep, 2019 by NSS unit which commenced with a Pledge by Principal, POs and volunteers on Aug 8, 2019. Three Cleanliness Drives were conducted on Aug 8, Aug 12 and Sept 03, 2019 respectively. Volunteers participated in 'Best out of Waste' Competition in Govt School, Sec 28, on Aug 10, 2019.



*Swachh Bharat* Summer Internship 2.0 (SBSI 2019) was observed from Jun 05-31, 2019. 15 Volunteers spent 50 hours in the adopted village Kaimbwala. Pledge for keeping the environment clean was taken. Inspection of coolers and awareness on spreading of malaria was created. Tree-plantation in the households of Kaimbwala residents, digging of Compost-Pit and Wall-Painting on

'Save Water' were undertaken. Volunteers conducted survey on 'Awareness on Solid Waste Management among residents at Kaimbwala' using google forms. Rally and *Nukkad Natak* on *Swachh Bharat* was performed.



- c) **Cleanliness Drive 2018:** NSS Unit of the College conducted cleanliness drive in Government School, Kaimbwala on Apr 18, 2018.



- d) **Swachh Bharat Abhiyan 2017:** The Swachhta Club was constituted in the College as per the recommendation of the Director Higher Education and comprise of Faculty as well as student community to bring about an improvement in the general quality of life by promoting cleanliness and hygiene. The main objective of the Club was to generate awareness about Swachh Bharat Mission among the faculty and students and motivate them to attain sustainable practices through awareness creation and campaigns. SBM Club organised an interactive session on Swachh Bharat Mission by Municipal Corporation (MC) Chandigarh for the teaching, non-teaching staff and students of the College on Nov 7, 2017 to create awareness

about the Swachhta App and celebrated Swachh Bharat Pakhwara with various activities in and beyond the campus in adopted village and Sector-8 Dispansary.

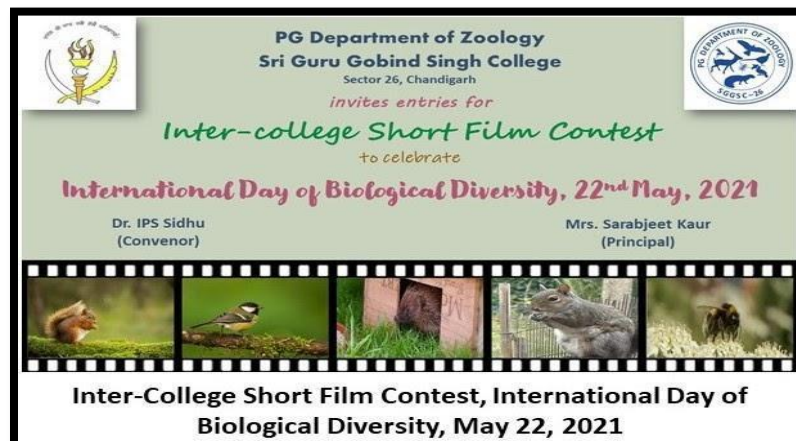


- **Earth Day** is commemorated globally to support environmental conservation. The College celebrated Earth Day by organising an online Inter-College Essay Writing Competition on Apr 22, 2021 on the topic '*Pavan Guru Paani Pita, Mata Dharat Mahat – Let's Rethink, Reset, and Restore*'. Taking inspiration 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.



- **International Day of Biological Diversity**

a) **International Day of Biological Diversity 2021** was celebrated by organising Inter-College Short Film Contest on May 22, 2021 by the PG Department of Zoology, dedicated to the cause of raising awareness and understanding the significance of preserving faunal biodiversity. 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.



b) **International Day of Biological Diversity 2020** was celebrated by Dharat Suhavi Environment Society by conducting an online Inter-College Poster Making Competition in collaboration with Department of Botany on May 22, 2020. The theme of the competition was 'Reclaiming Nature's Beauty whilst Covid-19'. Participants and winners were awarded e-Certificates.



c) **International Day of Biological Diversity 2017** was celebrated by organising Nature-Walk and Talk event by Department of Botany and Campus Beautification Committee in association with Natural Biodiversity Society, PU Chandigarh and sponsored by State Bank of India on Nov 11, 2017. Biodiversity Photography and an Exhibition were conducted to familiarise students about the flora and fauna around them. There was an enthusiastic participation of more than 100 students and teachers. All pictures were displayed and discussed through a power point presentation and prizes were given to the best three photographs.

• **Educational Tours and Visits**

Various tours and visits have been organised for the students by the College to gain practical knowledge and experience.

a) **Educational Visit to the Butterfly Park**

Department (Zoology) also organised visit to the Butterfly Park, Sector 26, Chandigarh to educate students of MSc II Zoology about the butterfly diversity on Aug 06, 2019.

b) **Educational Visit to the Govt. Fish Farm**

PG Deptt of Zoology organised a One Day visit to the Govt Fish Farm at Fagan Majra, Fatehgarh Sahib, Punjab on Apr 16, 2019 to acquaint students of MSc Zoology II with Pisciculture techniques.

**c) Educational Visit to the Chhatbir Zoo**

Department (Zoology) also organised another one day visit to the Chhatbir Zoo, Village Chhat, Punjab on Apr 16, 2019 to generate awareness about diversity of animals for BSc I Med students.

**d) Educational Tour to Kalpana Chawla Planetarium, Kurukshetra**

A one day trip to Kalpana Chawla Planetarium, Kurukshetra (sponsored by Deptt of Science and Technology Chandigarh) was organised by Society for Science Students on Feb 15, 2019. 76 students, 05 faculty members and 01 lab attendant visited the planetarium. The students experienced planetarium show based on Astronomy and Life of Astronauts, exhibition gallery demonstrating concepts like Day and Night, Seasons on Earth and many more. The students also visited `Dharohar Museum, Kurukshetra University, a unique archeological, cultural and architectural heritage of Haryana. They also visited Krishna Museum, Brahma Sarovar and Bala ji Tirupati Temple.

**e) Educational Visit to Botanical Garden**

Department of Botany organised an educational trip on Mar 27, 2018 to Botanical Garden and Labs of Botany Department, PU Chandigarh in which 68 students were accompanied by teachers from the college.

**f) Educational Visit to Energy Park, Sarangpur**

It was organised by Environmental Society in collaboration with Punjab State Council of Science and Technology, Chandigarh for science students on Mar 24, 2018.





**Educational Visit to Energy Park, Sarangpur**

## **VIII. Awards and Accolades**

### **• Accolades and Appreciation in Flower Shows**

Seven prizes were won in categories of flower competition during the 11<sup>th</sup> Panjab University Rose Festival held from Feb 07-09, 2020. In the Potted Flower Category, first position was bagged in 'Dahlia' and second in 'Geranium' and 'Marigold'. In Cut-Flower Category, the first position was won in 'Dahlia' and 'Dianthus' and second in 'Dahlia' and 'Gladiolus'. The College also participated in 48<sup>th</sup> Chandigarh Rose Festival held on Feb 28, 2020.



Award winning Entries at various Flower Shows in the City

9th Punjab University Rose Festival, Feb 9, 2018 – Feb 11, 2018			
Potted Flower Category	Position	Cut Flower Category	Position
Kale	First and Third	Gladiolus	First
Namesia	Third	Pansy	First
Collection of Cactus	Second and Third	Dahlia	Second and Third
Bonsai	Second	Candytuft	Third
Any Other Category	Second and Third	Any Other Category	Third
46th Chandigarh Rose Festival Feb 23, 2018- Feb 26, 2017		Spring Fest Flower Festival Mar 10, 2018- Mar 11, 2018	
Flower	Position	Flower	Position
Gerbera	First	Petunia (hybrid)	First
Pansy	Second		
Namesia	Third		

The College won 14 prizes in various categories at the 9th Panjab Univeristy Rose Festival and was among the prominent winners.



SRI GURU GOBIND SINGH COLLEGE

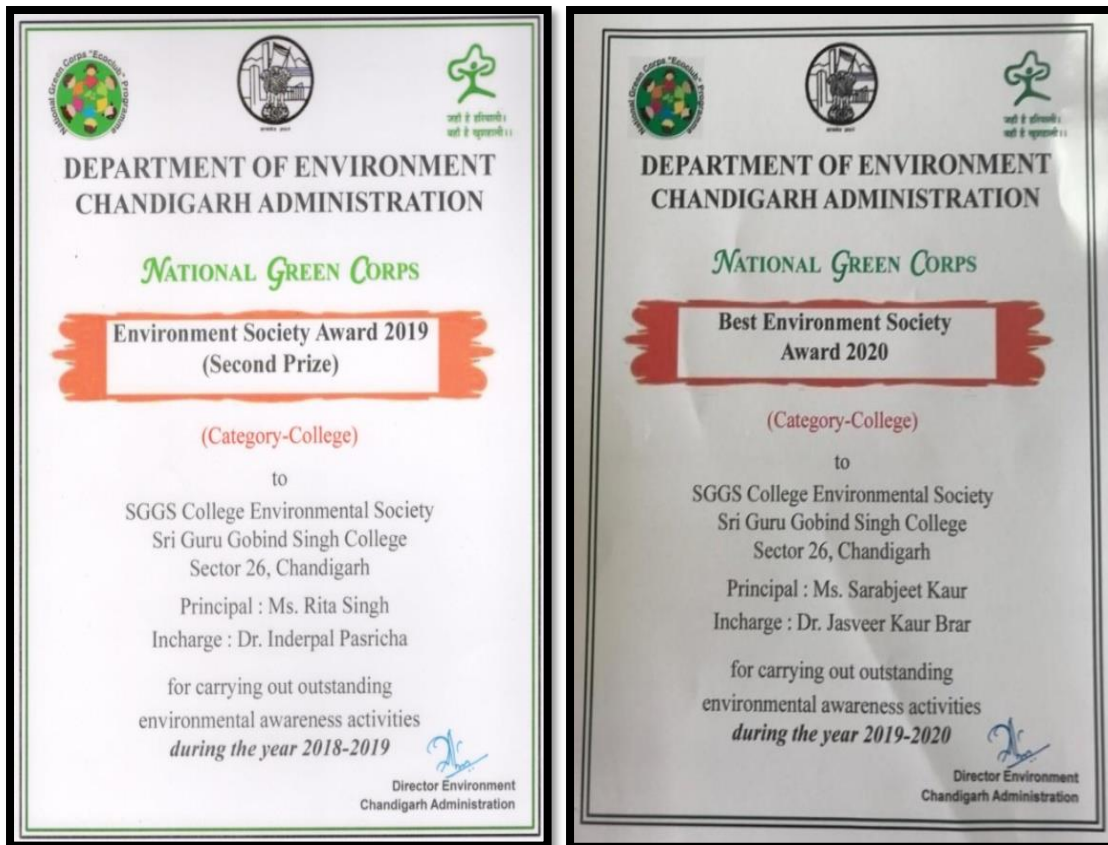
- **Award of Honour**

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.



- **Best Environment Society Awards**

The novel mini forest project and the outstanding environmental awareness activities of the Dharat Suhavi Environment Society fetched the National Green Corps Best Environment Society Award 2019 and 2020 under the aegis of Department of Environment, Chandigarh Administration.



- **Green ThinkerZ Academic Excellence Award 2019**

The College bagged Green ThinkerZ Academic Excellence Award 2019 under Institution category for remarkable contribution in the field of holistic education during 4th International Convention on Interdisciplinary Research for Sustainable Development (IRSD) organised by Green ThinkerZ Society, IIT Bombay, FOSS Community and Western Sydney University, Australia on Jan 10, 2020.



IIT Bombay  
Spoken Tutorials



I2OR  
India



Green  
ThinkerZ



FOSS COMMUNITY  
FOSS  
Community



Sustainable  
Cosmos

## **Green ThinkerZ**

# **Academic Excellence Award 2019**

presented to

**Sri Guru Gobind Singh College,  
Chandigarh, UT, India**

for remarkable contribution in the field of  
*Holistic Education*

at 4th International Convention on **Interdisciplinary Research  
for Sustainable Development** held at Confederation of Indian  
Industry (CII) Chandigarh (UT), India, 10 January 2020 in  
association with Centre for Smart Modern Construction,  
Western Sydney University, Australia

**Er. Tanvir Singh**  
President  
Green ThinkerZ



**Dr. Sapna Mehta**  
Head Research  
Green ThinkerZ

## **IX. 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 has 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 the campus.

