



DNYAN PRABHODINI MANDAL'S

SHREE MALLIKARJUN

&

Shri Chetan Manju Desai College  
Delem, Canacona, Goa



GREEN AUDIT REPORT

2019-2020



*Manjunt*





## GREEN AUDIT

Green audit was initiated with the beginning of 1970s with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. It exposes the authenticity of the proclamations made by multinational companies, armies and national governments with the concern of health issues as the consequences of environmental pollution. It is the duty of organizations to carry out the Green Audits of their ongoing processes for various reasons such as; to make sure whether they are performing in accordance with relevant rules and regulations, to improve the procedures and ability of materials, to analyze the potential duties and to determine a way which can lower the cost and add to the revenue. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit. Some of the incidents like Bhopal Gas Tragedy (Bhopal; 1984), Chernobyl Catastrophe (Ukraine; 1986) and Exxon Valdez Oil Spill (Alaska; 1989) have cautioned the industries that setting corporate strategies for environmental security elements have no meaning until they are implemented.

The intention of organizing Green Audit is to upgrade the environment condition in and around the institutes, colleges, companies and other organizations. It is carried out with the aid of performing tasks like waste management, energy saving and others to turn into a better environmental friendly institute.

### Goals of Green Audit

1. The objective of carrying out Green Audit is securing the environment and cut down the threats posed to human health.
2. To make sure that rules and regulations are taken care of
3. To avoid the interruptions in environment that are more difficult to handle and their correction requires high cost.
4. To suggest the best protocols for adding to sustainable development

### Benefits of Green Audit

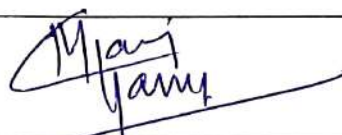





1. It would help to prepare plan to protect the environment.
2. Recognize the cost saving methods through waste minimization and management.
3. Point out the prevailing and forthcoming impacts on environment.
4. Ensures conformity with the applicable laws.
5. Empower the organizations to frame a better environmental performance.
6. It portrays a good image of an institute which helps building better relationships with the group of interested parties.
7. Promotes the alertness for environmental guidelines and duties.



## STATEMENT OF ASSURANCE

(2019-20)

This audit is been conducted by the internal Green Audit Committee assigned by the college. The audit procedure tried to meet the terms of International Standards of Internal Auditing. In our decision, sufficient and appropriate audit procedures were completed and evidence gathered to support the precision of the conclusions reached and contained in this report. The conclusions are based on a comparison of the situations as they existed at the time of the audit.

Sr. No.	Name & Designation of Committee Member	Signature
1.	<b>Prof. Dr. Manoj S. Kamat</b> Principal & Chairman	
2.	<b>Mr. Dipak Bowalkar</b> (Dept. of Zoology) Convener	
3.	<b>Ms. Divya Sawant</b> (Dept. of Chemistry) Co-convener	
4.	<b>Ms. Diksha Naik</b> (Dept. of Botany) Member	
5.	<b>Mr. Anand Velip</b> (Dept. of Geography) NSS Co-ordinator	
6.	<b>Ms. Karishma Parsekar</b> (Dept. of Commerce) NCC Army Co-ordinator	







**Dnyan Prabodhini Mandal's**  
**SHREE MALLIKARJUN COLLEGE OF ARTS & COMMERCE**  
**DELEM-CANACONA, GOA 403702**

1993

E-mail ID: shreemallikarjuncollege@gmail.com



www.shreemallikarjuncollege.ac.in

Date: 21/10/2019

**OFFICE ORDER**

**Committee for Green and Sustainability Practices**

The Principal is pleased to constitute the Committee titled as above from the date mentioned herein for the period of 3 years with the following agenda:


- A. Develop policy framework for sustainability.
- B. Develop sustainability initiatives related to Environment Preservation, Energy Conservation, Water Sanitization and Women Hygiene and Health.
- C. Organizing events for sustainable Garbage collection, Tree Plantation and Orientation towards Flora and Fauna.
- D. Student sensitization through of Guest Lecture and awareness on the theme of Sustainability.
- E. Extension and community engagement and of up keep regular maintenance of garbage, sanitary pads incination, sanitary pads dispenser, solid waste management, herbal garden and vermicompost plant.
- F. Facilitate reporting and internal auditing of energy/water /green audit

- |    |                         |   |             |
|----|-------------------------|---|-------------|
| 1. | Mr. Dipak Bowalkar      | - | Convenor    |
| 2. | Ms. Divya Sawant        | - | Co-convenor |
| 3. | Ms. Diksha Naik         | - | Member      |
| 4. | Mr. Anand Velip         | - | Member      |
| 5. | NSS Incharge            | - | Member      |
| 6. | NCC Incharge            | - | Member      |
| 7. | Mr. Pradhyumn Bhairali- | - | Member      |
| 8. | Ms. Saniha Desai        | - | Member      |
| 9. | College Gardeners       | - | Member      |



Kindly note and comply



  
Dr. Manoj S. Kamat  
Principal  
21/10/19

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## GREEN AUDIT EXECUTIVE SUMMERY REPORT

### I) BRIEF ABOUT COLLEGE:

1. Name of the Institute: DPM's SHREE MALLIKARJUN & Shri Chetan Manju Desai College Delem, Canacona, Goa.

2. No. of Branches: B.A.; B.Com.; BSc;

3. No. of Students: 501

4. No. of Faculty Members: 44

5. No. of Non-Teaching Members: 26

6. No. of Buildings: 07

8. Total campus area: 6000 m<sup>2</sup>

9. College building Spread Area: 2011 m<sup>2</sup>

a) Girls common room: 01

b) Garbage collection bins: 06

c) Labs: 05

d) Class rooms: 13

e) Auditorium/ Conference room: 03

f) First aid/Sick room:01

10. Student Strength

Catagotary	Boys	Girls	Total
ST	122	112	234
OBC	26	88	124
SC	0	1	1
Minority	12	40	52
General	35	55	90
Total	205	296	501

Stream	Boys	Girls	Total
Arts	90	198	288
Commerce	64	57	121
Science	51	41	92
Total	205	296	501

### II) Green Audit Committee Composition





## Green Audit Committee

Sr. No.	Name	Designation
1.	Prof. Dr. Manoj S. Kamat	Chairman
2.	Mr. Dipak Bowalkar	Convener
3.	Ms. Divya Sawant	Co-convener
4.	Ms. Diksha Naik	Member
5.	Mr. Anand Velip	NSS Co-ordinator
6.	Ms. Karishma Parsekar	NCC Army Co-ordinator
7.	Mr. Kust Velip	Gardener
8.	Mr. Kamalakar Velip	Gardener
9.	Ms. Jamina Vegas	Science Student
10.	Ms. Alisha Rebello	Science Student
11.	Nandisha Komarpant	Science Student
12.	Mast. Damodar Gaonkar	Science Student
13.	Mast. Sandesh Gaonkar	Science Student
14.	Ms. Samiksha Dalal	Science Student
15.	Ms. Tanaya Gosavi	Science Student
16.	Ms. Kinita Desai	Science Student
17.	Mast. Sanny Paugi	Science Student
18.	Mast. Kaushik Dhuri	Science Student
19.	Mast. Omkar Desai	Science Student
20.	Mast. Kartikesh Desai	Science Student



## **II) Standard Operating Protocol for Green Audit**

### **1. Introduction and purpose**

The rapid urbanization and economic development at local, regional, and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the green campus for the institute which will lead for sustainable development

Green audit can be defined as systematic identification, quantification, recording and analysis of components of environmental diversity to determine:

- (a) The compliance status to environmental regulatory requirement.
- (b) The environment management system; and
- (c) The overall environmental risk of the premises.

The “Green Audit” aims to analyze environmental practices within and outside the college campus, which will have an impact the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the organization whose exercises can cause risk to the health of inhabitant and environment..

Through ‘Green Audit’ one gets a direction as how to improve the condition of environment and the various factor that can determine the growth and healthy environment in the institution.

### **2. Vision**

To promote the Environmental management and Conservation in the College Campus and the surrounding community.

### **3. Mission**

To identify, quantify, describe and empower the framework of Environmental sustainability in compliance with the regulation, policies and standards.

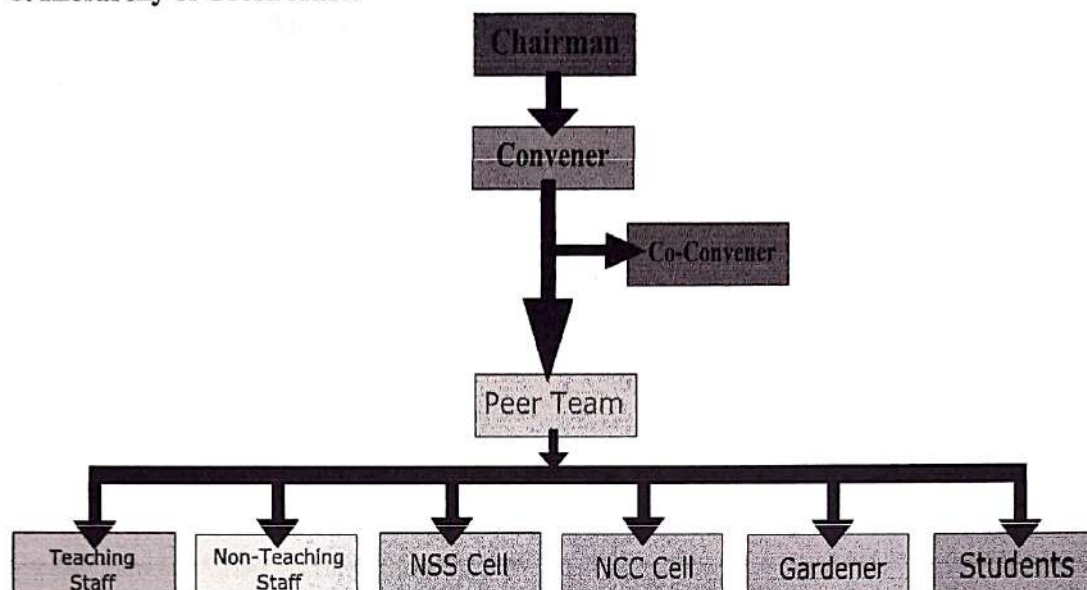
### **4. Objectives**

- To systematically document, Analyze, Improve and Maintain biodiversity of Campus
- To actively involve students in biodiversity conservation activity and sustainable development practices.
- To conduct extension activities for spreading green initiatives in the community
- To bring out a status report on environmental compliance
- To identify gaps and suggest recommendation to improve the Green Campus status of the Institution.
- To establish a Benchmark to assess sustainable and eco friendly future of environment.





## 5. Hierarchy of Green Audit



## 6. Components of Green Audit

**A) Biodiversity Audit:** It deals with conservation and expansion of green cover in the campus along with awareness regarding conservation of biodiversity to college and surrounding community. The concerned auditor initiates documentation of biodiversity around campus and suggest for reducing carbon foot print campus.

**B) Waste Management Audit:** The waste clearance measures associated to hazardous wastes and recycling are reviewed. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems.

**C) Water Audit:** Evaluating the facilities of raw water intake and determining the facilities for water treatment. Water harvesting is one of the best techniques that can be adopted by simply storing the water and using it at the time of scarcity. The concerned auditor investigates the relevant method that can be adopted and implemented to balance the demand and supply of water.

**D) Energy Audit:** It deals with the energy conservation and methods to reduce its consumption and the related pollution. The auditor targets at the energy consuming methods adopted and find whether these methods are using the energy in a conservative way or not.

## 7. Audit Process

The selection of an auditor by the organization requires some appreciation of what an audit entails. Organizations should appreciate that the environmental audit and risk assessment required under Environmental Quality are much more than an inspection and documentation of the site conditions. The audit shall investigate the environmental problems that are noted at the site to determine the root cause of the regulatory noncompliance so that the organization



can take feasible steps to improve the conditions. The biodiversity auditor will comprise of two independently working parties namely:

**I. Internal Auditors (Self Study Reports)**

**II. External Auditor (External Independent Review)**

**I. Internal Auditors (Self Study Reports)**

The internal auditor will comprise of a team of members from the institution which will include the Principal (Chairman), Convener, Vice- Convener, Peer members including Teaching and Non Teaching Staff and Gardner of the college.

**A) Chairman :** The Principal of the college will be designed as Chairmen of the Green Audit committee who will be appointing Convener & members of the committee and will closely monitor the progress of green audit. The selected committee members should fulfils following selection criteria.

1. Minimum Environmental Auditing Experience.
2. In-depth knowledge of Biodiversity –
3. Science or Engineering educational background.

**B) Convener:** Principal/Vice-Principal shall evaluate and assign the Convener of the committee to facilitate the Green Auditing. The Convener of the committee is responsible to communicate the verbal/written instructions/notices from the Principal/vice-principal to the members of the committee. The Convener of the committee under the guidance of Principal/vice-principal will also design an action plan of Biodiversity auditing for the particular academic year. The Convener of the committee is responsible to assign duties and task to the members of the committee. The Convener of the committee should ensuring the efficient and effective conduct and completion of the audit within the audit scope and plan. The Convener of the committee with the help of members of the committee will be responsible for preparation and submitting the audit report. The Convener of the committee shall also take an active role in the site audit activities and shall not delegate the task of the site audit activities entirely to the members of the committee.

**C) Members of the committee:** Members of the committee should have love, interest and knowledge of Biodiversity. The members of the Biodiversity audit will include the Teacher/Gardener/MTS/Student of the college. Members of the committee under the supervision of will responsible for completion of action plans of Biodiversity Audit. The members of the committee must work as a unit and the range of auditing and technical skills must be balanced among the team members. The team members should be competent enough to carry out the audit and have, as a minimum, certified skills in environmental auditing.

**II. External Auditor (External Independent Review)**

The External audit team should be independent third party organization so that they audit to ensure the objectivity of the audit, its findings and conclusions. The auditor who is selected





should be free from bias and any potential conflict of interest throughout the audit process. The selected External Auditor should also fulfill following criteria's:

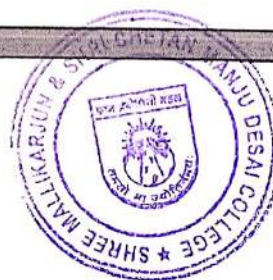
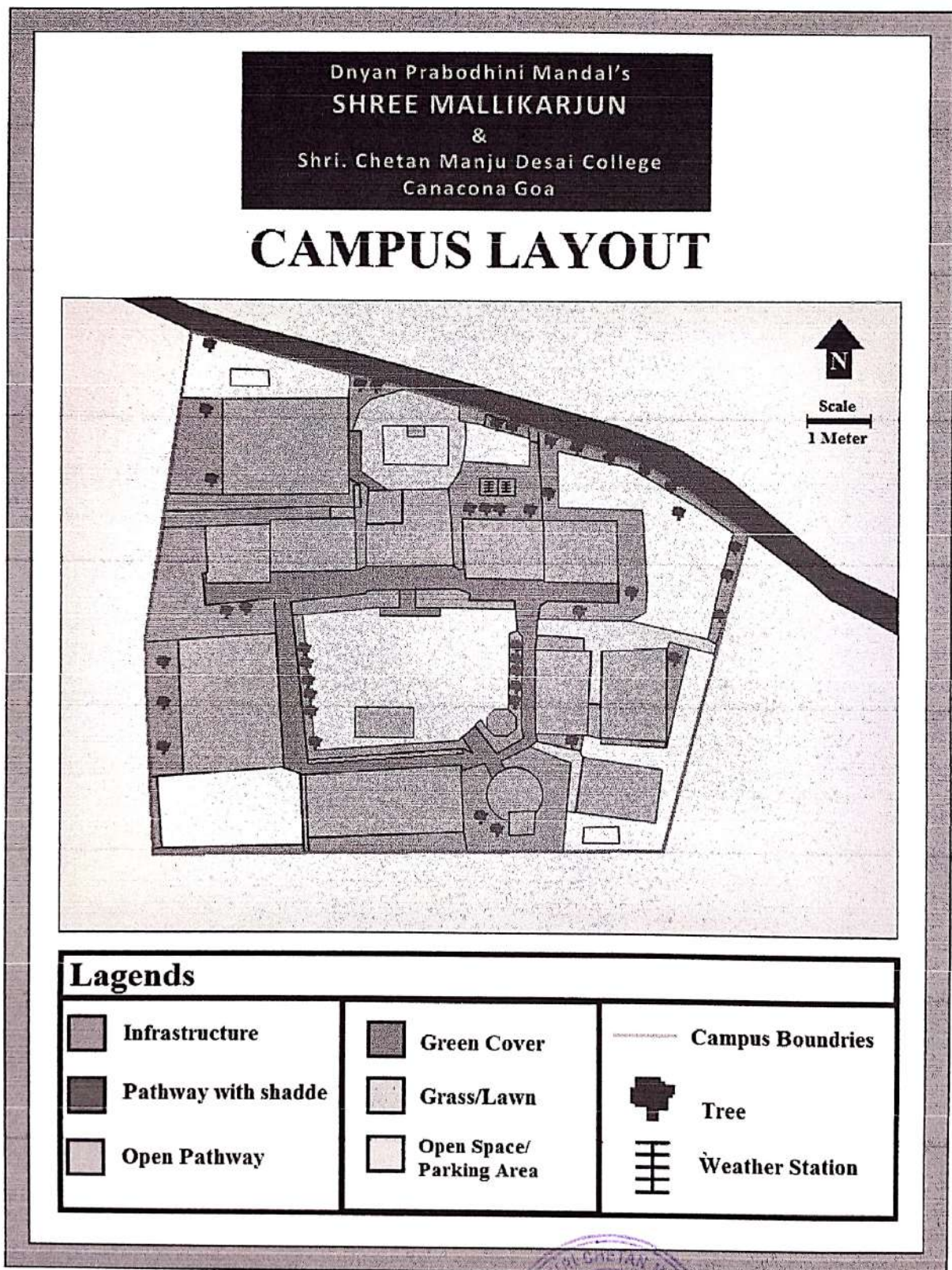
1. Minimum Environmental Auditing experience
2. Certified skills in environmental auditing and relevant environmental management and technology.
3. Understanding of the environmental regulations and its requirements.

#### **8. Review of preliminary**

Before an audit is carried out, the scope of the audit has to be determined by the Chairman of the committee in accordance with the Institution. Determining the scope includes defining the extent and boundaries of the audit such as physical location, processes and organizational activities.



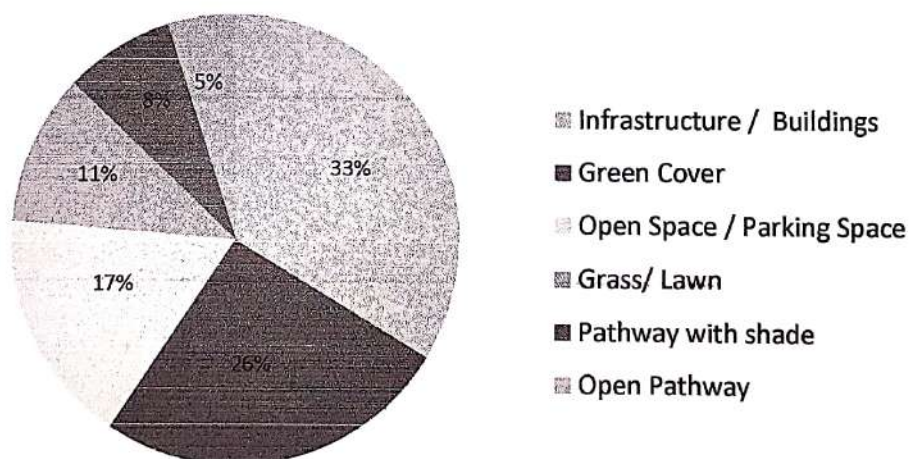
#### IV) Campus Layout





Sr. No.	Feature	Area in Square Meters	Percentage
1.	Total Area	6000	100
2.	Infrastructure / Buildings	2011	34
3.	Green Cover	1535	26
4.	Open Space / Parking Space	1020	17
5.	Grass/ Lawn	638	11
6.	Pathway with shade	507	8
7.	Open Pathway	289	5

### Campus Area Distribution



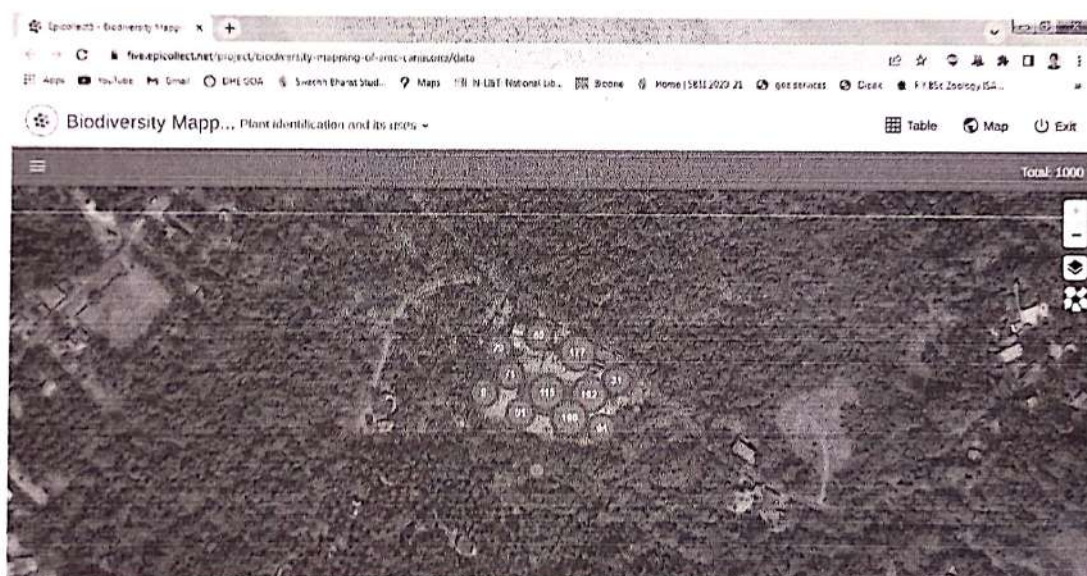
## V) Green Initiatives in Campus

### A) Systematic Documentation of Plant Diversity in Campus and Geo-tagging of Plants using Epicollect-5.

Dyan Prabhodhini Mandals, Shree Mallikarjun and Shri Chetan Manju Desai College Campus is spread across 6,000 sq meter of which 37% of the campus is total green cover which includes Trees, Shrubs, Ornamental, Flowering Plants, Grass and Lawn. The plant diversity of campus is broadly divided into two categories; the perennial plants which are persistent in campus throughout the year while the others are seasonal which are persistent for only specific period of the year. Thus constant monitoring of plant diversity of campus is essential.

To achieve this task Epicollect 5.0, was used in making survey of plant diversity in campus. Epicollect 5.0 is a mobile & web application for free and easy data collection. It provides both the web and mobile application for the generation of forms (questionnaires) and freely hosted project websites for data collection. Data are collected (including GPS and media) using multiple devices and all data can be viewed on a central server (via map, tables and charts). The Project titled "BIODIVERSITY MAPPING OF SMC CANACONA" on Epicollect 5.0 is coordinated by Vice Principal Dr. F. M. Nadaf.

Link: <https://five.epicollect.net/project/biodiversity-mapping-of-smc-canacona/data>



The Teachers, Non-Teaching Staff and Students of Science department constantly monitor plants within the campus and report them in Epicollect 5.0. As of 04/01/2020, 650 Plant individuals belonging to 94 different species were recorded on Epicollect 5.0 from the campus. The details of plants documented are listed in following table.





List of Plants recorded on Epicollect-5 online user interface

Sr. No.	Common Name	Scientific Name	No of Plants	Use
1	Aaboli	<i>Crossandra undulifolia</i>	6	Ornamental
2	Anant	<i>Gardenia jssminoides</i>	17	Ornamental
3	Anaras	<i>Ananas comosus</i>	1	Fruit
4	Apto	<i>Bauhinia blakeana</i>	1	Timber Plant
5	Areca palm	<i>Dyopsis lutescens</i>	39	Ornamental
6	Ashoka tree	<i>Saraca asoca</i>	8	Ornamental
7	Avla	<i>Phyllanthus emblica</i>	8	Medicinal
8	Badam	<i>Prunus dulcis</i>	16	Fruit/Medicinal
9	Beil	<i>Aegle marmelos</i>	4	Medicinal
10	Banana	<i>Musa acuminata</i>	2	Fruit
11	Butanv	<i>Gomphrena globosa</i>	10	Ornamental
12	Bor	<i>Ziziphus mauritiana</i>	1	Fruit
13	Gunduri	<i>Centella asiatica</i>	2	Medicinal
14	Cape Jasmine	<i>Gardenia jasminoides</i>	1	Ornamental
15	Chafa	<i>Plumeria alba</i>	10	Ornamental
16	Chamarel	???	1	???
17	Chavli	<i>Vigna unguiculata</i>	17	Vegetable
18	Chiddo	<i>Impatiens balsamina</i>	2	Ornamental
19	Chinch	<i>Tamarindus indica</i>	6	Fruit/Medicinal
20	Chipta	<i>Physalis minima</i>	30	Medicinal
21	Chitra	-	1	-
23	Coconut tree	<i>Cocos nucifera</i>	5	Fruit
24	Christ Plant	<i>Euphorbia milii</i>	4	Ornamental
25	Dasan	<i>Hibiscus Sps.</i>	66	Ornamental/Medicinal
26	Dhudhi val	<i>Cucurbita maxima</i>	12	Vegetable
27	Diabetes Plant	<i>Chamaecostus cuspidatus</i>	7	Medicinal
28	False Ashoka	<i>Polyalthia longifolia</i>	10	Ornamental
29	False heather	<i>Cuphea hyssopifolia</i>	3	Ornamental
30	Fatfate pana	<i>Bryophyllum pinnatum</i>	2	Medicinal
31	Ful terem	<i>Anthurium andreaumanthurium</i>	4	Medicinal
32	Ganjan	<i>Cymbopogon citratus</i>	2	Medicinal
33	Garden Croton	<i>Codiaeum variegatum</i>	23	Ornamental
34	Golden Duranda	<i>Duranta erecta</i>	18	Ornamental
35	Ghaneri	<i>Latena camera</i>	3	Ornamental
36	Gulab	<i>Rosa x damascena</i>	6	Ornamental
37	Gulmohar	<i>Delonix regia</i>	6	Ornamental
38	Haldi	<i>Curcuma longa</i>	4	Medicinal
39	Jaayo	<i>Jasmine grandiflorum</i>	3	Ornamental
40	jackfruit	<i>Artocarpus heterophyllus</i>	2	Fruit
41	Jamun	<i>Syzygium cumini</i>	2	Fruit/Medicinal
42	Kadi patta	<i>Murraya koenigii</i>	4	Medicinal



43	Kadu limbu	<i>Azadirachta indica</i>	1	Medicinal
44	Kaju	<i>Anacardium occidentale</i>	8	Fruit
45	Kaneri	<i>Zizipus oenoplia</i>	1	Fruit
46	Kantyechim Fulam	<i>Bougainvillea</i>	3	Ornamental
47	Kayze pala	-	1	Medicinal
48	Kidal	<i>Terminalia paniculata</i>	1	Timber tree
49	Kono (bambo)	<i>Allamanda schottii</i>	1	Timber Tree
50	Korno	<i>Allamanda cathartica</i>	16	Ornamental
51	Lemon	<i>Citrus Sps.</i>	1	Fruit
52	Makdda xempddi	<i>Acalypha hispida</i>	5	Ornamental
53	Mango tree	<i>Mangifera indica</i>	15	Fruit
54	Money Plant	<i>Pothos sp</i>	4	Ornamental
55	Mogara	<i>Jasminum sambac</i>	1	Ornamental
56	Moto vatlav	<i>Plectranthus amboinicus</i>	2	Medicinal
57	Nagel Kudo	<i>Holarrhena antidysenterica</i>	1	Medicinal
58	Neem	<i>Azadirachta indica</i>	1	Medicinal
60	Nilkanthi	<i>Clitoria ternatea</i>	4	Medicinal
61	Oleander	<i>Nerium oleander</i>	4	Ornamental
62	Ovola	<i>Nyctanthes arbor-tristis</i>	1	Ornamental
63	Pana val	<i>Piper betle</i>	1	Medicinal
64	Panas	<i>Artocarpus heterophyllus</i>	2	Fruit
65	Papaya	<i>Carica papaya</i>	1	Fruit
66	Path	<i>Artemisia vulgaris</i>	1	Medicinal
67	Pitkoli	<i>Ixora coccinea</i>	1	Ornamental
68	Peru	<i>Psidium guajava</i>	5	Fruit
69	Queen Sirkit	<i>Mussaenda Phillipic</i>	12	Ornamental
70	Ramulo	<i>Portulaca grandiflora</i>	6	Ornamental
71	Ratan aboli	<i>Crossandra infundibuliformis</i>	1	Ornamental
72	Red frangipani	<i>Plumeria rubra</i>	2	Ornamental
73	Rose	<i>Rosa Species</i>	3	Ornamental
74	Royal purple	<i>Gardenia jssminoides</i>	2	Ornamental
75	Sadafuli	<i>Catharanthus roseus</i>	6	Ornamental/Mdicinal
76	Sayl	<i>Tectona grsndis</i>	6	Timber Plants
77	Shankar	<i>Caesalpinia pulcherrima</i>	5	Ornamental
78	Shevni (tree)	<i>Gmelina arborea</i>	1	Timber Plant
79	Shevtae	<i>Chrysanthemum</i>	1	Ornamental
80	Shobduli	<i>Mirabilis jalapa</i>	12	Ornamental
81	Sleeping Hibiscus	<i>Malvaviscus arboreus</i>	2	Medicinal/Ornamental
82	Snake Plant	<i>Sansevieria roxburghiana</i>	8	Ornamental
83	Supari(madi)	<i>Areca catechu</i>	6	Medicinal
84	Suri	<i>Caryota Urens'</i>	1	Timber
85	Taikilo	<i>Senna tora</i>	1	Medicinal/Vegetable
86	Tikyechem Zhadd	<i>Cinnamomum Sps.</i>	1	Medicinal/Spice
87	Tree Marigold	<i>Tithonia diversifolia</i>	4	Ornamental





88	Tulsi	<i>Ocimum tenuiflorum</i>	92	Medicinal
89	Vatalav	<i>Mentha arvensis</i>	7	Medicinal
90	Peyu Bhaji	<i>Costus speciosus</i>	10	Medicinal/Vegetable
91	Wishbone flower	<i>Torenia fournieri</i>	3	Ornamental
92	White Musanda	<i>Mussaenda philippica</i>	4	Medicinal/Ornamental
93	Yellow Trumpet	<i>Tecoma stans</i>	2	Ornamental
94	Zendu	<i>Tagetes erecta</i>	1	Ornamental



## **VI) Sustainable Initiatives and Green Practices by college**

### **1. PBR BMC Workshop in association with GSBB**

The Science department of the college along with Goa State Biodiversity Board (GSBB) organized one day workshop on 30<sup>th</sup> September 2019 for F.Y.BSc. Students. The Main objective of the workshop was to give student an brief idea on Working of Biodiversity management Committee (BMC), Role of People's Biodiversity Register (PBR) and need of Science expertise as Technical Support Group (TSG) in Maintaining & Documenting the Biodiversity at each Panchayat level. The Comparison of the event was done by Akshatra Fernandes, The Introduction of Guest was done by Dr. F. M. Nadaf. The Guest and resource persons for the workshop were Dr. Arvind Halankar, Dhilan Velip, Dr. Vandana Wagh, Ms. Suamn Gaonkar, Ms. Shailita & Ms Nebidita Fernandes. The Vote of thanks was given by Mr. Dipak Yashawant Bowalkar.



### **2. Field Trip Visit to Canacona Wetland Ecosystem**

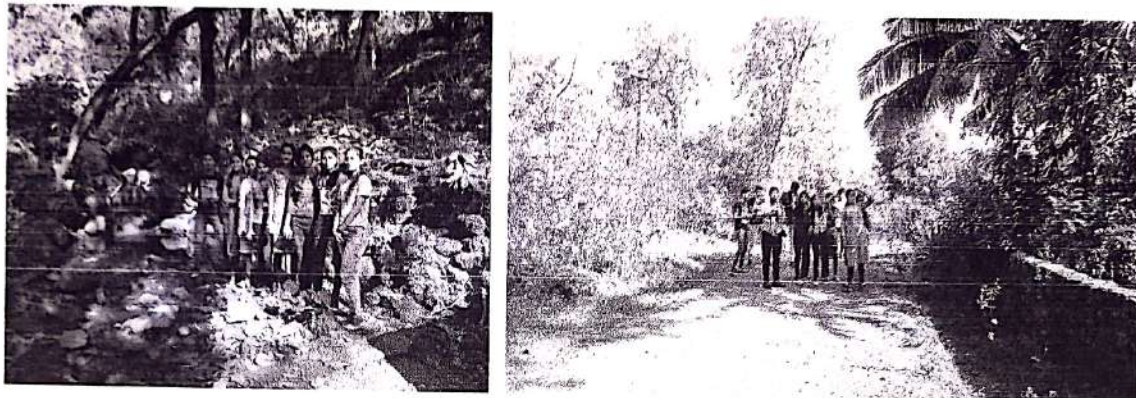
As a Part of Practical component of Skill Enhancement Course "Wildlife and Eco-tourism" 08 students from S.Y.BSc. along with Mr. Dipak Yashawant Bowalkar from Dept. of Zoology visited Canacona Wetland Ecosystem at Char Rasta. The Objective of the visit was to understand Avifaunal diversity of Wetland. The Field trip documented 28 different Species of Birds from Canacona Wetlands highlighting its reach biodiversity.





### 3. Field Visit to College Campus Local Stream to understand Butterfly Diversity

As a part of Skill Enhancement Course for S.Y.BSc. "Wildlife and Eco-tourism" 12 Students of S.Y.BSc. along with Mr. Dipak Bowalkar, Ms Mithali Halarnkar, Sneha Naik & Shivraj Naik Deshmukh visited college campus and Natural water stream at Delem to learn about different butterfly diversity from the College Campus and Surrounding area on 29<sup>th</sup> January 2019.



Field Trip visit to College Campus and Natural Local Stream at Delem

### 4. Maintenance of Aquarium tank for aesthetics and Beautification of Zoology Lab

For the Purpose of Recreation, Aesthetics and Beautification of the Zoology Lab as a part of Skill Enhancement course for S.Y.BSc. "Aquarium Fish Keeping" Students maintain and take care of Fishes and aquarium tank on regular basis established in Zoology lab.



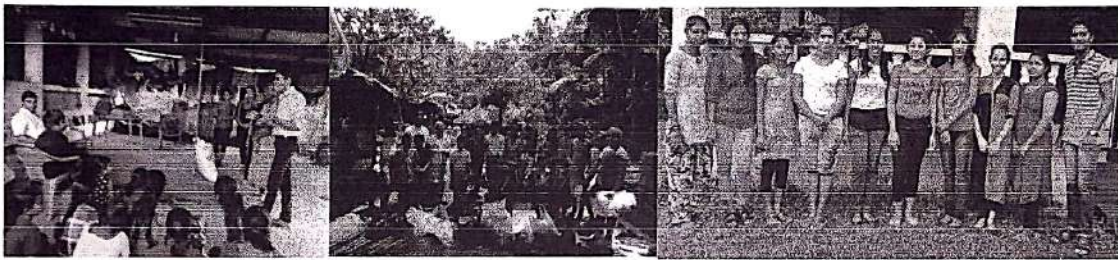


### 5. Swachh Bharat Summer Internship (SBSI) Programme

4 teams consisting of 37 volunteers along with NSS PO Mr. Anand Velip participated in the **Swachh Bharat Summer Internship 2019 – 50 Hours of Swachhata** programme launched by the Ministry of Jal Shakti in association with Ministry of Youth Affairs & Sports and HQ NCC. This Swachhata programme from 10<sup>th</sup> June to 31<sup>st</sup> July 2019 was initiated to give an opportunity to youths to develop their skills and become a part of the Swachh Bharat Jan Andolan. The programme constituted the activities to be undertaken into two main components. They were

- Information , Education and Communication (IEC) activities
- Solid waste management (SWM) related activities.

This 50 hour internship programme required the interns to select any of the above projects to contribute to the cause of rural sanitation in India. 03 teams submitted the completion report for further processing.



### 6. Tree Plantation

A tree plantation drive was launched in the college campus on 09<sup>th</sup> August 2019 at the hands of Shri. Bhagwant Karmali, Block Development Officer of Canacona taluka in the distinguished presence of Mrs. Suman Gaonkar, Sarpanch of Gaondongrem village, Dr. Manoj Kamat, Principal, Dr. F. M. Nadaf, Vice-Principal, Dr. Sucheta Naik, Associate Professor in Commerce, Shri. Ramdas Sawant, Head Clerk, and NSS Programme Officers Mrs. Tanuja Fal Desai and Mr. Anand Velip. The saplings were donated by Mrs. Tanuja Fal Desai. 24 NSS volunteers (males- 13 females- 11) also took part in the tree plantation programme.



7.





## 7. Celebration of 150<sup>th</sup> Birth Anniversary

The NSS Unit in association with NCC Cell, Physical Education Department and Nehru Yuva Kendra, Madgaon observed 150<sup>th</sup> Birth Anniversary of Mahatma Gandhi and Birth Anniversary of former Prime Minister Lal Bahadur Shastri in the college campus on 2<sup>nd</sup> October 2019. Vice Principal Dr. F. M. Nadaf garlanded the photos of Mahatma Gandhi and Lal Bahadur Shastri in the beginning. In his speech, Vice Principal highlighted the contribution of these great leaders and the importance of cleanliness preached by these leaders. He further acknowledged 'Fit India Movement' launched by Honourable Prime Minister of India Shri. Narendra Modi.. This unique programme seeks to attain fitness with cleanliness.

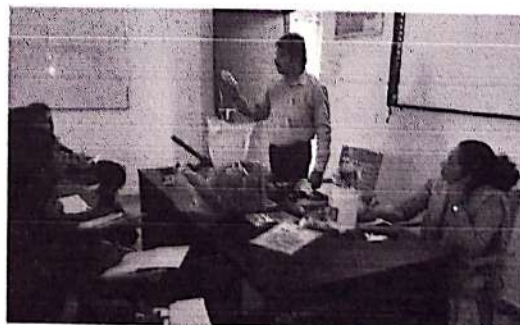


The inaugural programme was followed by Fit India Plogging – a run for 2 km distance with collection of garbage in the Delem locality of Canacona. A rally was conducted thereafter in the locality of Mastimol where volunteers assisted by teaching faculty collected garbage along road side as well as from other establishments such as police station, Court, Fire Station, houses, retail shops.

## 8. Vegetable Gardening Workshop

A team of 6 male volunteers with NSS Programme Officer Mr. Anand Velip participated in the workshop organised by Zonal Agricultural Department, at Chaudi on 27 August 2019.

On 28<sup>th</sup> August 2019, Shri. Shivram Desai, Zonal Agricultural Officer conducted workshop for NSS volunteers (M- 4, F- 24 T-28588) regarding the use of organic fertilizers in the cultivation of crops in the college campus.





In order to implement the skills learnt through these workshops, 97 volunteers (M- 31 F- 66) planted different types of vegetables in the campus by using organic manures provided by Zonal Agricultural Office, Canacona on 6<sup>th</sup> October 2019.



#### 9. Swachhta Hi Seva (Action on Single use Plastic)

Between 11<sup>th</sup> September and 27<sup>th</sup> October 2019, Swachhata Hi Seva programme was observed in the college campus. The major stress of this programme was on Swachhata Abhiyan and making awareness on single use plastic (SUP) and making alternative for SUP. The NSS Unit, in association with Nehru Yuva Kendra, South Goa, organised major Swachhata Abhiyan in the surrounding area of the college premises namely Delem, Mastimol and Sheller on the eve of Gandhi Jayanti. 152 NSS volunteers (males- 58 and females- 94) took part in this swachhata drive.



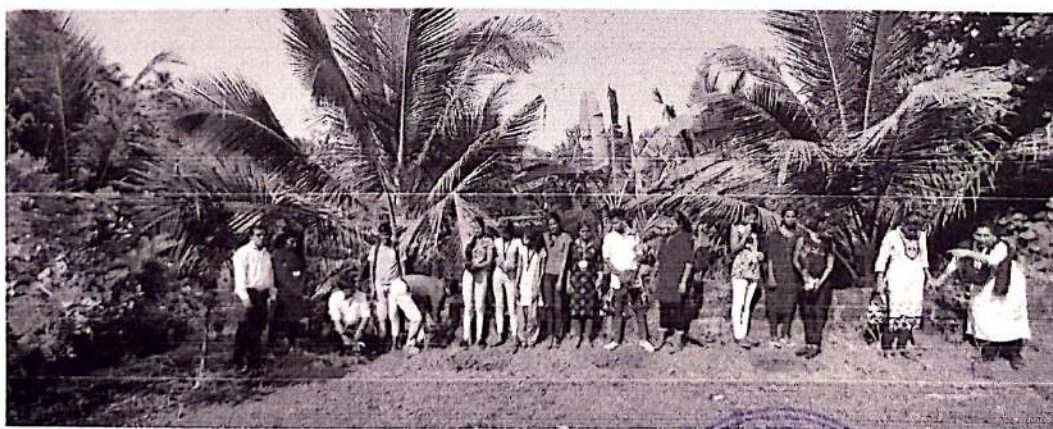
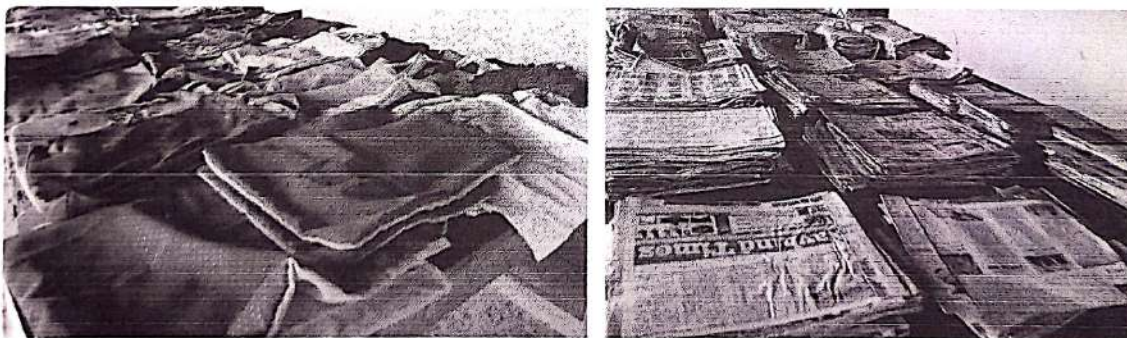




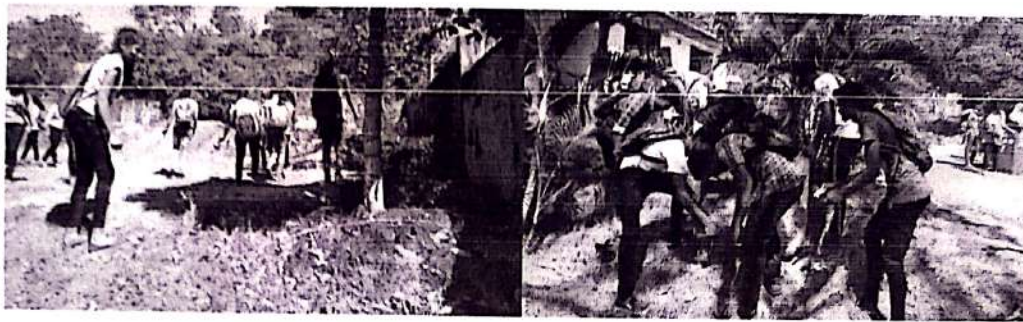
In the strive to make alternative to Single Use Plastic (SUP), 121 volunteers comprising 70 females and 51 males participated in the preparation of paper bags and cloth bags. In all, 11037 paper bags of different sizes (Large size = 2832, Medium size = 6057, and Small size = 2148) were prepared. Volunteers also prepared 251 cloth bags (Large size = 46, Medium size = 109 and Small size = 96).

#### 10. carbon sequestration

The NSS Unit is devoted to reduce carbon footprints through the process of carbon sequestration in the activities conducted. As a part of Swachhata Pakhawada, 16 NSS volunteers (Males - 05 Females- 11) participated in the tree plantation programme with 4 faculty members in the college campus.



**11.** Campus and classroom cleaning drive was conducted on 25<sup>th</sup> January. In all, 27 volunteers (Males- 11, Females- 16) and 2 faculty participated in the swachhata activity.

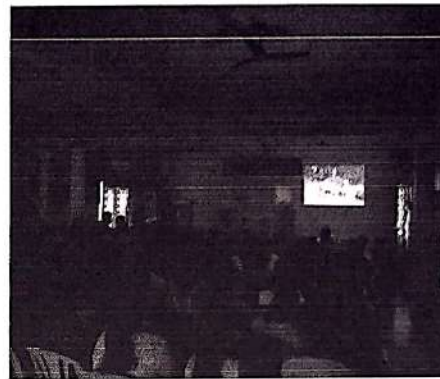




## VII) Awareness & Sensitization Activities

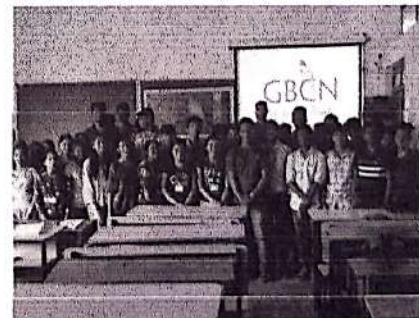
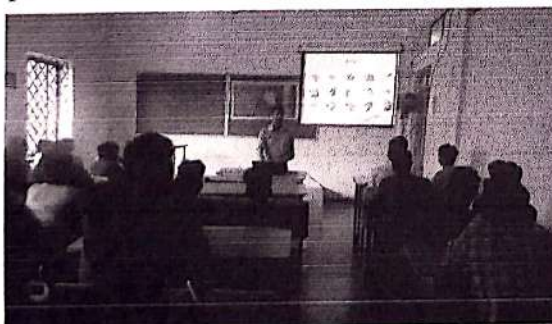
### 1. Show case of Tiger awareness Documentary on World Tiger Day

As a part of conservation of our national animal "Tiger" on Global Tiger Day, 29<sup>th</sup> July, 2019, Tiger Awareness documentary was show cased to F.Y.B.Sc. and S.Y.B.Sc. students of the College Auditorium Hall. The Event and importance of Tiger was introduced to Students by Mr. Dipak Bowalkar. The program was conducted in association with Study & Awareness of Wildlife & Environment (SAWE) as a part of Tiger awareness outreach Program.



### 2. 3<sup>rd</sup> Bird Festival Outreach Program

Forest Department of Goa celebrate's Bird Festival every year. This year Goa Forest Department is celebrated 3<sup>rd</sup> Edition of the Bird Festival from 17<sup>th</sup> to 19<sup>th</sup> Jan 2020. Main events are planned at Valpoi and Surla of Sattari Taluka. As a part of Same Along with Goa Bird Conservation Network (GBCN), an outreach awareness programmes were organized in different schools and colleges in Goa. From Canacona two Institutes were selected namely Shree Mallikarjun & Shri Chetan Manju Dessai College on 06/01/2020 and Government High School Shristhal Canacona on 11/01/2020. The recourse person for both the programme was Mr. Dipak Yasahwant Bowalkar (GBCN Member & Outreach Programme coordinator for Canacona) who spoke on different Birds found in Goa, their importance and Conservation Status.



Out Reach Program at Shree Mallikarjun & Shri Chetan Manju Dessai College







Out Reach Program at Government High School Shristhal Canacona11.

### 3. Manohar Parriekar Vidnyan Mahostav

Twenty students from F.Y.BSc. along with Dr. Mithil Fal Dessai and Mr. Dipak Bowalkar from Science Section attended Manohar Parriekar Vidnyan Mahostav on 13/12/2019 at Government College for Arts, Science & Commerce Quepem Goa. The Mahosav highlighted a lecture on “ The Anthropocene Concept : Human Disturbance of Earth system.” By Dr. S. K. Tandan. Professor, Dept. of Earth & Environmental Science, IISER, Bhopal.

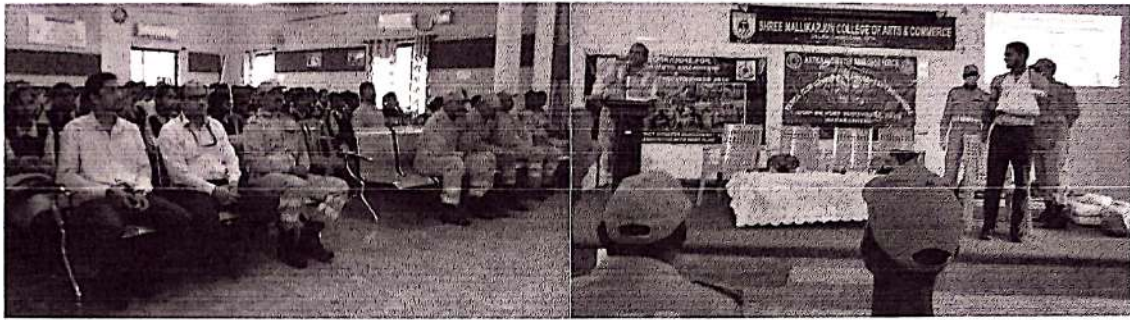


### 4. Disaster Mitigation Workshop

The National Disaster Rescue Force (NDRF), Pune Division conducted 1 day workshop on Familiarization Exercise and Community Preparedness on Disaster Management for NSS volunteers of our college and neighbouring Institutes on 23<sup>rd</sup> October 2019. The NSS Unit organised this programme in association with Office of the Mamlatdar of Canacona Taluka. In the inaugural programme, Vice-Principal, Dr. F. M. Nadaf welcomed the guest and explained the need of disaster management training among public. Shri. Raghuraj Fal Desai, Mamlatdar elaborated further on the programme on disaster preparedness.. Thereafter, the NDRF team lead by Head Constable Bharat demonstrated different techniques of safety and rescue operations applicable in different conditions. About 111 volunteers (M- 43, F- 68) of our college and of GHSS, Canacona participated in the demonstration including 04 faculty members.







## 5. Clean Canacona Community Day

A team of 32 volunteers (males- 11 females- 21) along with NSS Programme Officer Mr. Anand Velip participated in Clean Canacona Community Day organised by WILDBIYOO in association with GOENKAR at Gaitonde Ground, Chaudi on 24<sup>th</sup> January 2020.



## **VIII) Extension & Community Engagement**

### **1. Workshop on Green Audit on College Campus.**

Mr. Dipak Bowalkar from Zoology Department along with Akshatra Fernandes and Shruti Fal Dessai from Botany Department attended two days state level workshop 29<sup>th</sup> and 30<sup>th</sup> August, 2019 organized by Internal Quality assurance cell (IQAC), Dnyanprassarak Mandal's College and research center Assagao-Bardez Goa. The topics such as Water Audit, Energy Audit, Biodiversity Audit, Solid Waste Management Audit, Preparation of Green audit were discussed in the workshop.



Interaction with resource person Mr. Pradip Sarmokadam (Member secretary; Goa State Biodiversity Board)

### **2. Meeting at Canacona Municipal Council as Technical Subject adviser for validation and preparation of BMC PBR.**

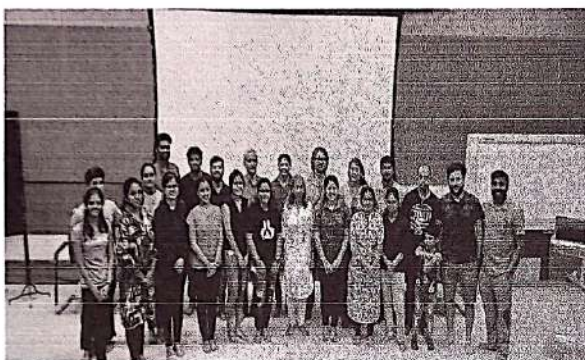
Mr. Dipak Yashawant Bowalkar from Department of Zoology was invited as Subject adviser for Special meeting held in Canacona Municipal Council, Canacona, Goa on 23/12/2019 conducted by Biodiversity Management Committee Canacona Municipality regarding the discussion of subject matter of bio resources within Canacona Municipal Jurisdiction and to Prepare Peoples Biodiversity Registration for the Municipality.





### 3. Workshop on Birds of Goa's Wetland

As a training session for an upcoming event "All Goa Waterfowl count (AGWC)" Mr. Dipak Bowalkar and Ms. Mithali Halarnkar attended two days workshop on "Birds of Goa's Wetland" organized by Goa Bird Conservation Network. The workshop was conducted in two Sessions; the first (Indoor Workshop) on 29/12/2019 at Central Library Panajim. The workshop was addressed by Pronoy Boidhya who spoke on different Habitats and different wetland birds found in Goa and the key pointers to identify them. The Second session (Outdoor workshop) was conducted on 05/01/2020 at Maina Lake Margao by GBCN Team. The workshop gave the participants hands-on practice for identification of different birds in the field.



### 4. BMC first validation of five Panchayat of Canacona Taluka.

As per section 41(1) of the Biological Diversity Act, 2002: Every local body shall constitute a Biodiversity Management Committee (BMC) within its area for the purpose of promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats.

As a part of above Process Five Panchayat from Canacona Taluka namely **Shristhal, Khola, Agonda, Gaondongarim & Poinguinim Panchayat** signed a MOU With the College under which College will Provide a technical support in terms of field data collection in Scientific manner and Panchayat BMC will do the payment as honorarium for the students and experts from college based on the available funds.



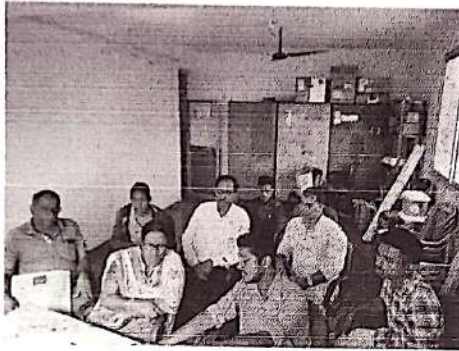




Validation of Poinguinim Panchayat



Validation of Agonda Panchayat



Validation of Khola Panchayat



Validation of Gaondongarim Panchayat



Interacting with Medicinal Healers form  
Shristhal Panchayat



Represented Canacona BMC at  
Arogya Fair at Miramar

## 5. Represented Chapoli Reservoir and Canacona Wetland Ecosystem for All Goa Water bird count (AGWC) January, 2020.

Birds have been scientifically known to be indicators of species richness and endemism patterns. Changes in the populations of birds can be a very good indication of broad environmental changes. Such being the intricate link, the importance of monitoring waterbird populations in wetlands was realized in late 60's and the International Waterbird census (IWC) run since 1967 which is now done in more than 100 participating countries. Goa Bird Conservation Network (GBCN) along with Forest



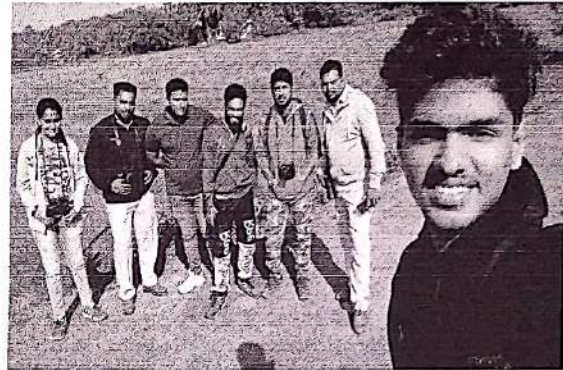


department of Goa & eBird Contribute to IWC census form 21 different sites in Goa in the month of January known as All Goa Water Bird Count (AGWC). On 26<sup>th</sup> January 2020, Mr. Dipak Bowalkar & Ms. Mithali Halarnkar from Zoology Department represented Chapoli Reservoir and Canacona Wetland Ecosystem from Canacona for All Goa Water bird count (AGWC) January, 2020.

AGWC Survey at Chapoli Reservoir



AGWC Survey at Canacona Wetland Ecosystem



## 6. Natures Trail at Karmal Ghat organized in BMC Shristhal

With this moto documentation of traditional knowledge related to biodiversity to make people's biodiversity register (PBR) on Saturday, 25th Day of January 2020, along with village panchayat Biodiversity Management Committee of Shristhal Canacona Goa, together 22 number of stakeholders and local knowledgeable persons of the village area along with Mr. Dipak Bowalkar as a part of Technical Support team visited Karmal Ghat to collect the valuable information related to ritual sites & Medicinal plants from the hill stations of the Gulem, Chapoli, Asali and Vaizawada.

**BMC organises nature visit to tag sites in Shristhal**

**THE GOAN NETWORK**

**CANACONA**  
The Biodiversity Management Committee (BMC) of Shristhal Panchayat organised a nature visit to the hills of Gulem, Chapoli, Asali and Vaizawada in Shristhal recently.

"The nature visit was aimed at identifying some religious places and water sources in order to tag the sites for the People's Biodiversity Register (PBR)," BMC Shristhal Chairman Vinay Tubki informed.

The nature visit was started from Gulem and the team also identified various types of medicinal plants and rare species of trees.

Besides Vinay Tubki, others participating in the nature visit included Shristhal Sarpanch Ganesh Bhiwa Gaonkar, BMC members Shirish Pai and Damodar Chari, Govind Velip, special invitee Santan Rodrigues from the Curtorim

BMC, Satish Gosavi, Pratap Naik Gaonkar, Satyawar Naik Gaonkar, Dipak Bowalkar (technical group in charge) and around 22 residents.

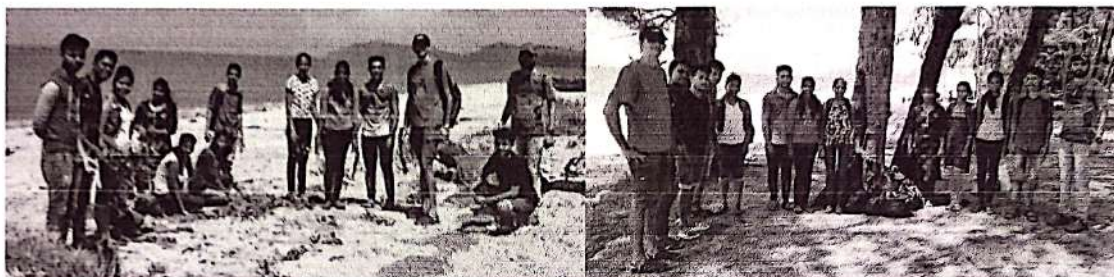
The Shristhal Bio-Diversity Management Committee headed by Vinay Tubki during a nature visit at a hillock in Gulem-Shristhal.  
Kathy Fernandes





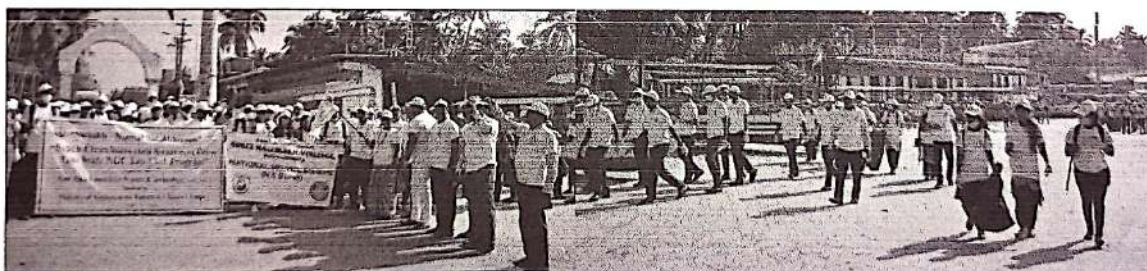
## 7. Beach Beautification

On 22<sup>nd</sup> September 2019, a team of 12 NSS volunteers (M- 5 F- 7) with 2 faculty members participated in cleaning and plantation at Galgibag beach under the guidance of faculty member. This initiative was taken to control coastal erosion by way of planting sand binders.



## 8. Beach Cleaning Drive

The Ministry of Environment, Forest & Climate Change, Govt. of India and Goa State Council for Science & Technology, Saligao in association with the NSS Unit organised 3 days beach cleaning drive at Palollem - Canacona between 13<sup>th</sup> and 15<sup>th</sup> November 2019. Educational institutions namely GHSS Canacona, S. S. Angle Hr. Sec. School, Mashem, Balram Hr. Sec. School, Ardhafoad, Shree Mallikarjun Hr. Sec. School, Char Rasta, Jawaharlal Nehru Vidhyalaya Mastimol, Shree Mallikarjun Vidhyalaya High School, National Opec School, Shristhal, staff and students of Shree Mallikarjun College along with local NGO Ami Goenkar joined their hands for this noble cause. In all, 529 volunteers (students- 424 staff- 105) across society contributed their time and energy.



## 9. Social Awareness during COVID-19 Pandemic

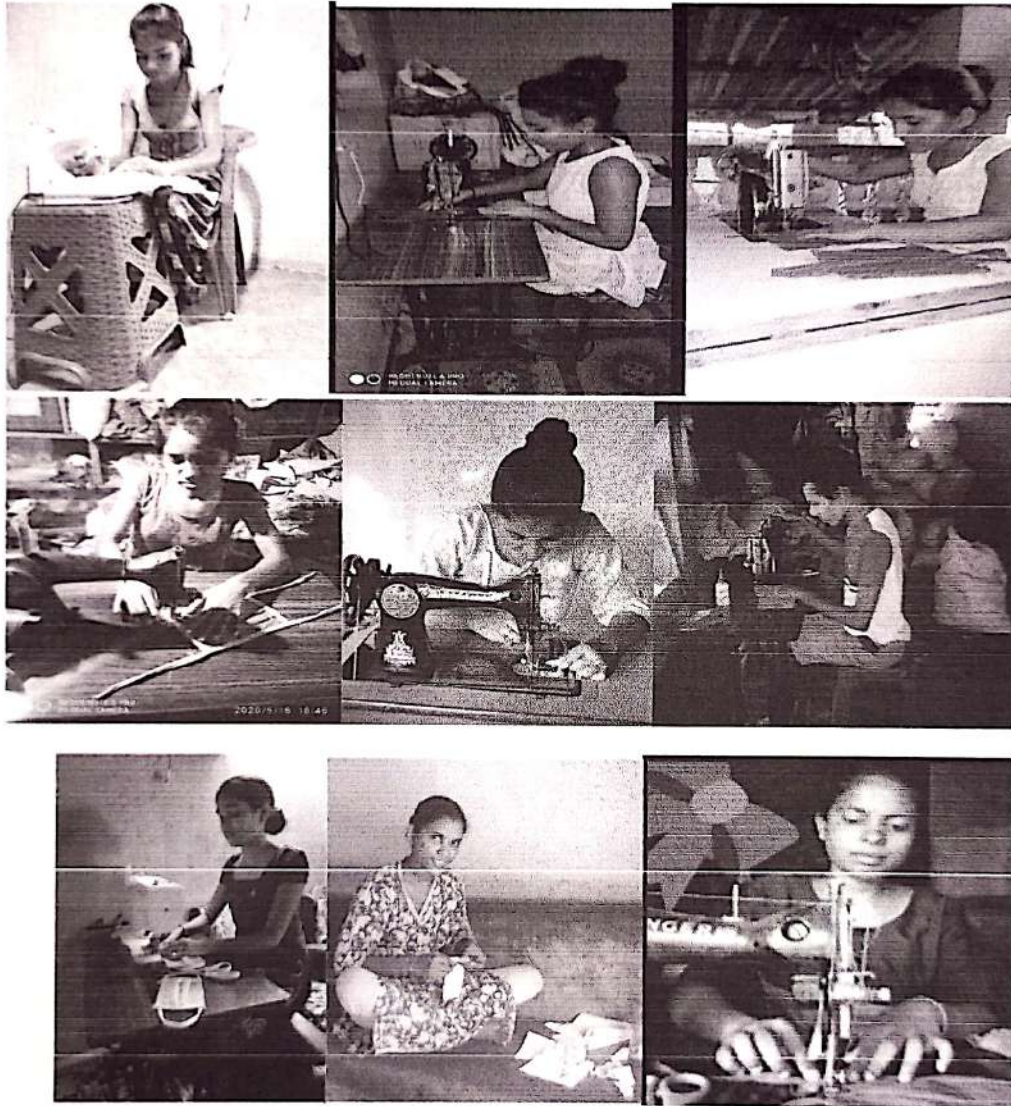
Adversity borne out of Corona pandemic in the summer months in India opened several possibilities for the individuals and institutions to be sensible and conscious about societal needs. Rising on the occasion, the NSS Unit contributed positively to reach the remotest area of the Canacona taluka with the message of **Stay Home Stay Safe**. Various form of activities were undertaken during the lockdown period by the volunteers by following the guidelines of conveyed by the NSS Directorate through Regional Directorate and NSS Cell of Goa University. All the NSS volunteers (T - 258, M – 100, F – 158) took part in the awareness activities started from 21<sup>st</sup> March 2020 primarily through social media.





## 10. Making and distribution of face mask

Survival necessities drive several people out making them more vulnerable to infection. To provide a kind of protection to such people, NSS volunteers prepared face mask by investing their own resources and distributed them among locals by maintaining social distance. Till date 59 volunteers rendered their service to make 1099 face masks and distribute in their surroundings.



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# VIEWPOINT 2020



Editor: Dr. Mithil S. Fal Desai

**Dnyan Prabodhini Mandal's  
Shree Mallikarjun and Shri Chetan Manju  
Desai College, Canacona Goa 403702**

[shreemallikarjuncollege@shreemallikarjuncollege.ac.in](mailto:shreemallikarjuncollege@shreemallikarjuncollege.ac.in)





## Research Article

# Green Marketing- A Study of Consumer Awareness in South Goa

Dr. Sucheta Naik<sup>1\*</sup><sup>1</sup> Shree Mallikarjun and Shri Chetan Manju Desai College, Caracora, sucheta.naik@shreemallikarjuncollege.ac.in

\* Correspondence:

**Abstract:** The disturbed ecosystem and the sudden changes in the present climatic conditions is a result of the ignorance and carelessness of the people. Today, society becomes more concerned with the natural environment. Businesses have begun to modify their behavior in an attempt to address society's new concern. It has become the need of the hour where people from all walks of life start becoming environmentally conscious and preserve the natural resources for the upcoming generation. Green marketing is a marketing philosophy that promotes production and selling of eco-friendly products with protection of ecological balance. Green marketing raises the voice against production, consumption, and disposal of such products that anyway harm consumers, the society, and the environment. This study is undertaken to understand the concept of Green marketing, and to find out the green marketing awareness among consumers in South Goa. The study suggested some strategies for promoting green marketing. Green marketing can be one of the solutions to protect our environment. It can bring the drastic change in the business so as to bring environment sustainability by protecting our environment.

**Keywords:** Green marketing, consumer awareness, sustainable environment, environment, protection.

## 1. Introduction

Green marketing is a marketing philosophy that promotes eco-friendly production and selling of products with protection of ecological balance. Green marketing involves multiple activities and encourages production of pure products by pure technology, conservation of energy, preservation of environment, minimum use of natural resources, and more use of natural foods instead of processed foods.

Global warming, ozone depletion, environmental hazards, environment impact assessment have become common terminology in the 21st century. Today, society is more concerned about natural environment because ill effects of environmental degradation which all of us face. Degradation of environment is arising out of mass production, mass consumption and mass marketing of environmentally unfavourable products. As a result business houses have begun to modify their behavior in an attempt to address these kinds of 'new' concerns of the society. Green marketing is the business strategy regarding preservation and conservation of the natural environment. Green marketing is focus on the ecological context, sustainability issues, socio-economic benefits by considering environmental responsibilities through the green business.

Shopping malls, departmental stores and specialty stores, are flooded with useful as well as useless products. Use of heavy technology and large scale production threatened welfare of people and ecological balance as large scale industry creates huge pollutions. Thus, heavy production, consumption and disposal of many products affect environment in an adverse manner.

Excessive pollution has aggravated the Nature and the Nature starts behaving in unnatural ways. Economic growth through production and consumption threatens peaceful life of human being on the earth. Green marketing is a strategy to protect consumer welfare and environment through production, consumption, and use of green products.

Green marketing refers to holistic marketing concept wherein the production, marketing consumption and disposal of products and services happen in a manner that is less detrimental to the environment with growing awareness about the implications of global warming, non bio degradable solid waste, harmful impact of pollution etc. both marketer and consumers are becoming increasingly sensitive to the need for switch in to green products and services. While the shift to green may appear to be expensive in the short term, it will definitely prove to be beneficial cost wise in the long run.

Green marketing emphasizes on protection of long-term welfare of consumers and society by production and use of pure, useful and high quality products without any adverse effect on the environment. Mass media have started their campaign for protecting the earth from further deterioration. Worldwide efforts are made to conserve natural water resources.

Thus, efforts of people, social organizations, firms, and governments in this regard can be said as green marketing efforts. Green marketing raises the voice against production, consumption, and disposal of such products that anyway harm consumers, the society, and the environment.

## 2. Objective:

1. To understand the concept of Green marketing.
2. To find out the awareness of consumers about green marketing in South Goa
3. To suggest strategies for promoting green marketing.

## 3. Methodology

Both primary data and secondary data has been used for this study. Primary Data is collected using structured questionnaire distributed randomly to 1000 respondents from South Goa. The analysis is done on simple percentage basis. Secondary Data is collected from various published articles from journals, survey reports, text books and internet websites.



## **IX) Suggestions Green Audit Committee to Improve Green Cover in Campus**

- 1 Increase Green Cover
- 2 To Label Plants with names
- 3 Encourage Community based and Awareness' activities
- 4 Establishment of Herbal/ Botanical Garden
- 5 To use A star Eco friendly Electronic Equipments
- 6 To get Certified by External Green Auditor
- 7 Document Animal Diversity in Campus

