



ST. THOMAS COLLEGE

Ranni, Pathanamthitta, Kerala – 689673

ACCREDITED BY NAAC WITH 'B' GRADE

7.1.2 : Environmental consciousness, sustainability and Divyangjan friendly initiatives

REPORT OF THE ACTIVITIES 2017-2022

CRITERION : 7

**INSTITUTIONAL VALUES
AND BEST PRACTICES**



2017-18

World Environment Day-Planting tree saplings.	
Organising Department/ Agency	Date
Nature Club	05/06/2017



As part of the World Environment Day celebrations, members of Nature Club gathered to participate in the tree planting event. With a strong commitment to environmental sustainability, they embarked on this project to ensure the well-being and growth of the newly planted saplings. Every member of Nature Club played an active role in the event, demonstrating their dedication to preserving nature.



World Tourism Day- Seminar on the topic: “Sustainable Tourism- a Tool for Development”

Organising Department/ Agency	Date
PG Dept. of Tourism & Travel Management	27/09/2017



As part of World Tourism Day celebration, the PG Department of Tourism & Travel Management hosted a seminar on "Sustainable Tourism - A Tool for Development". Dr. Anila Thomas, a distinguished expert in the field, was the keynote speaker. Her presentation focused on highlighting the importance of sustainable tourism in achieving a harmonious balance between economic growth, environmental preservation, and the preservation of cultural heritage.



2018-19

A talk on “ Environmental History of Pathanamthitta”	
Organising Department/ Agency	Date
Bhoomitra Sena Club	06/10/2018



In an effort to raise awareness among students about the pressing environmental issues of our times and to foster a sense of deep love and respect for nature, Bhoomithra Sena Club was formed on 6th October 2018. The chief guest of the inaugural ceremony was Dr. M. S. Sunil, Professor (Retd) of Zoology, Catholicate College, Pathanamthitta. The event also featured a thought-provoking talk on "Environmental History of Pathanamthitta" by Mr. Arun S., member, District Level Appraisal Committee.



Butterfly garden	
Organising Department/ Agency	Date
Bhoomithra Sena Club	12/10/2018



Bhoomithra Sena Club, dedicated to environmental preservation, started a butterfly garden in the campus in October 2018. This initiative was carried out with the aim of creating a congenial habitat for butterflies by providing suitable nectar sources and host plants for their reproduction.



Quiz Competition	
Organising Department/ Agency	Date
Bhoomitra Sena Club	02/11/2018



Bhoomitra Sena Club conducted a quiz competition aimed at assessing the level of environmental awareness among students. The event attracted enthusiastic participation of students from various departments and served as a platform in promoting environmental consciousness among the student community.



Debate competition	
Organising Department/ Agency	Date
Bhoomitra Sena Club	02/11/2018



Bhoomitra Sena Club organised a debate competition and the event provided the students an opportunity to express their perspectives, engage in constructive dialogue, and exchange ideas regarding intricate environmental challenges. It also served to foster critical thinking and promote insightful discussions on environmental issues.



2019-20

Vana Mahotsava celebration	
Organising Department/ Agency	Date
Dept. of Botany	02/07/2019



In an endeavour towards maintaining the green cover of the campus and spreading the message of conserving nature, Department of Botany celebrated Vana Mahotsava, the annual tree planting festival. Distinguished environmentalist, Dr. Abhilash R., Assistant Professor of Zoology, Christian College, Chengannur, delivered the keynote address. The week-long celebration initiated the creation of a Star Forest in the campus.



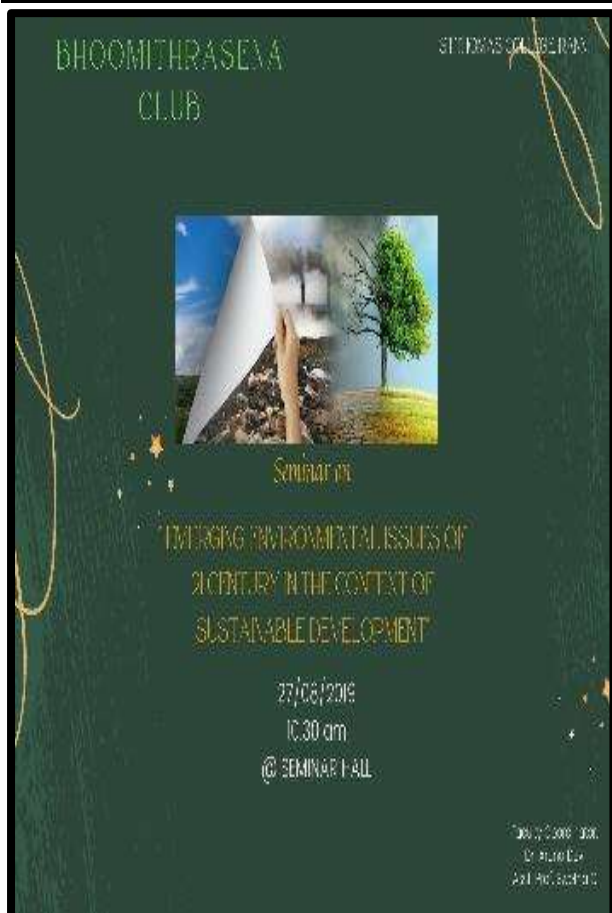
Construction of plastic waste disposal unit	
Organising Department/ Agency	Date
NSS	20/07/2019



Volunteers of the NSS Unit undertook the construction of a plastic waste disposal unit within the campus with the aim of addressing plastic waste management issues in the campus and promoting sustainability practices.



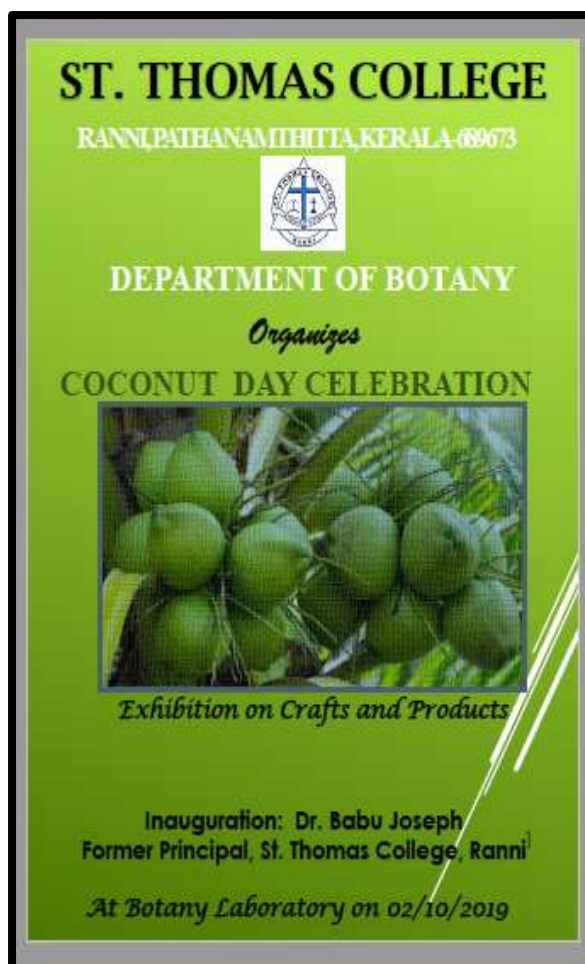
Seminar on the topic: “ Emerging Environmental Issues of 21 st century in the Context of Sustainable Development”	
Organising Department/ Agency	Date
Bhoomitra Sena club	27/08/2019



Bhoomitra Sena Club organised a seminar titled "Emerging Environmental Issues of 21st Century in the Context of Sustainable Development" aimed at exploring the environmental concepts and actions that go beyond the curriculum and syllabus, providing the participants with a broader understanding of the challenges and remedies associated with environmental issues. Dr. K.P. Joy, Chairman, State Environment Impact Assessment Authority and Principal (retd) of Basilius College, Kottayam, was the resource person of the event.



World Coconut Day celebration	
Organising Department/ Agency	Date
Dept. of Botany	02/09/2019



Department of Botany organised an exhibition of the value-added products of coconut to celebrate World Coconut Day. The event was inaugurated by Dr. Babu Joseph, former principal of the institution. The exhibition featured informative charts on the history and uses of coconut, along with a display of the coir products from Southern Coir Mills, Alappuzha.



International Day for the Preservation of Ozone Layer	
Organising Department/ Agency	Date
Dept. of Botany	16/09/2019



International Day for the Preservation of Ozone Layer was observed in a befitting manner under the aegis of the Department of Botany by conducting an awareness session themed on "Let's Protect Our Ozone Layer for a Better Tomorrow". The event was inaugurated by Dr. K. A. Sreejith, Scientist, Kerala Forest Research Institute, Peechi, who emphasised the importance of the conservation of ozone layer and its environmental implications.



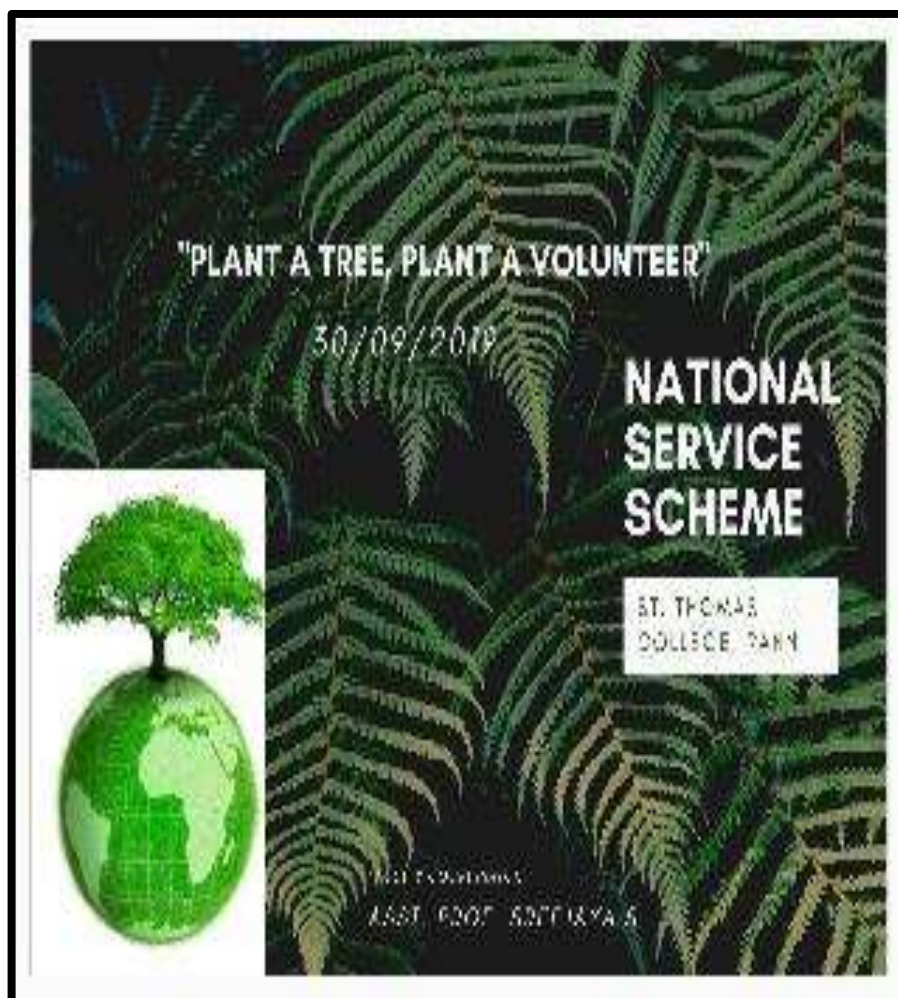
Organic Farming Unit	
Organising Department/ Agency	Date
NSS	26/09/2019



An organic farming unit was established in the college campus and NSS volunteers played a pivotal role in the development and maintenance of this unit. The objective was to promote sustainable agricultural practices, minimise the use of synthetic chemicals, and encourage the production of organic crops.



“Plant a tree, Plant a volunteer”	
Organising Department/ Agency	Date
NSS	30/09/2019



The NSS unit of the college organised "Plant a Tree, Plant a Volunteer" programme with the objective of engaging the volunteers in hands-on environmental conservation methods by planting tree saplings in the college campus. The programme sought to foster a greener and more sustainable future by encouraging the volunteers to embrace their roles as environmental stewards.



Setting up “Pachathuruthu”	
Organising Department/ Agency	Date
Bhoomitra Sena club in collaboration with Haritha Keralam Mission	09/10/2019



In collaboration with the Haritha Keralam Mission, the Bhoomitra Sena Club initiated the establishment of a “Pachathuruthu” within the college campus. The project was inaugurated by Mr. Rajesh, Coordinator, Haritha Keralam Mission, Pathanamthitta Division, who played a crucial role in guiding the endeavour. The inaugural session was marked by the members of the Bhoomitra Sena Club actively planting tree saplings of various types. This initiative served as an inspiration for students and encouraged them to embrace their role in protecting and preserving the environment for a sustainable future.



Green Campus Campaign- Distribution of Cloth Carry Bags	
Organising Department/ Agency	Date
Bhoomitra Sena Club	11/10/2019



As a part of the Green Campus Campaign, aimed at fostering environment-friendly practices, distribution of cloth carry bags was organised by Bhoomitra Sena Club. Recognising the adverse impact of plastic on the environment, the campaign sought to replace plastic bags with reusable cloth bags. During the inauguration of this initiative cloth bags designed by the club members, Ms. Arpitha (D2 Zoology) and Ms. Rona (D1 Zoology) were presented to Shri S. Balasankar, Asst. Editor, Aranyam magazine who was the chief guest of the event.



Training on eco-friendly cloth and paper bag making	
Organising Department/ Agency	Date
NSS Unit in collaboration with National Skill Development Board	13/01/2020 to 15/01/2020



NSS volunteers actively participated in a skill development programme organised by National Skill Development Board, Pathanamthitta. The programme focused specifically on eco-friendly cloth and paper bag making techniques. Through hands-on training and guidance, the volunteers were equipped with the necessary knowledge and skills to produce environmentally sustainable bags. The training programme highlighted the importance of eco-friendly bag making as a sustainable alternative to single-use plastic bags. By utilising materials such as cloth and paper, volunteers were encouraged to contribute to the reduction of plastic waste and promote environmental consciousness within their communities.



Craft Exhibition- “Waste into Wealth”

Organising Department/ Agency	Date
Bhoomithra Sena Club	JANUARY 2020



Bhoomithra Sena Club organised a craft exhibition titled "Waste into Wealth" that showcased a wide range of handicrafts meticulously crafted using recycled and waste materials. The exhibition was inaugurated by the Principal, Dr. Lata Marina Varghese, by buying a mat made of waste clothes. The exhibition aimed to raise awareness about the potential of waste materials and the importance of recycling and up cycling in reducing environmental impact. It served as a platform to promote sustainable practices and encourage individuals to rethink their approach to waste management.



Seminar on the topic: “Environment Protection and Waste Management”

Organising Department/ Agency	Date
IQAC in association with Haritha Keralam Mission	JANUARY 2020
Mission	



IQAC in collaboration with Haritha Keralam Mission, Pathanamthitta, organised a seminar in the college auditorium on the topic of "Environmental Protection and Waste Management."

Additionally, an exhibition showcasing cloth products was held in the same venue. The seminar was inaugurated by Adv. Sakkeer Hussain, Chairman, Child Welfare Society. Session on "Bio Waste Management" was led by M.B. Dileep Kumar, Managing Director, Clean Kerala Company Limited. NSS volunteers (2nd year Zoology) of the college received award of recognition from Haritha Keralam Mission for the best project proposal themed on “My Campus, Clean Campus”.



ST. THOMAS COLLEGE, RANNI

2020-21

Online Selfie Contest on the Theme “Save Nature”	
Organising Department/ Agency	Date
Bhoomitra Sena Club in association with Nature Club	01/06/2020



St. Thomas College, Ranni
BHoomITRASENA CLUB
ONLINE SELFIE
CONTEST
Save Nature



Coordinators:
Dr. Aruna Devy
Swetha C

LAST DATE
1/6/2020



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Online Selfie Contest themed on “Save Nature” urged the contestants to creatively portray their efforts, actions and thoughts regarding the protection and preservation of the natural environment. By participating in the competition, the club members demonstrated their commitment to fostering a sense of responsibility towards nature and encouraging others to do the same.



World Environment Day- Planting tree saplings in the campus	
Organising Department/ Agency	Date
Bhoomitra Sena Club in association with Nature Club	05/06/2020



As part of the observance of World Environment Day, Bhoomitra Sena and Nature Clubs collaborated to organise a tree planting programme. The event provided a platform for volunteers to engage in environmental conservation activities by planting trees. This initiative also served as an opportunity to nurture a deep connection with nature and promote sustainable practices.



Poster Designing Competition- “Problems and Causes of Environmental Issues in the Present Scenario”	
Organising Department/ Agency	Date
NSS	05/06/2020



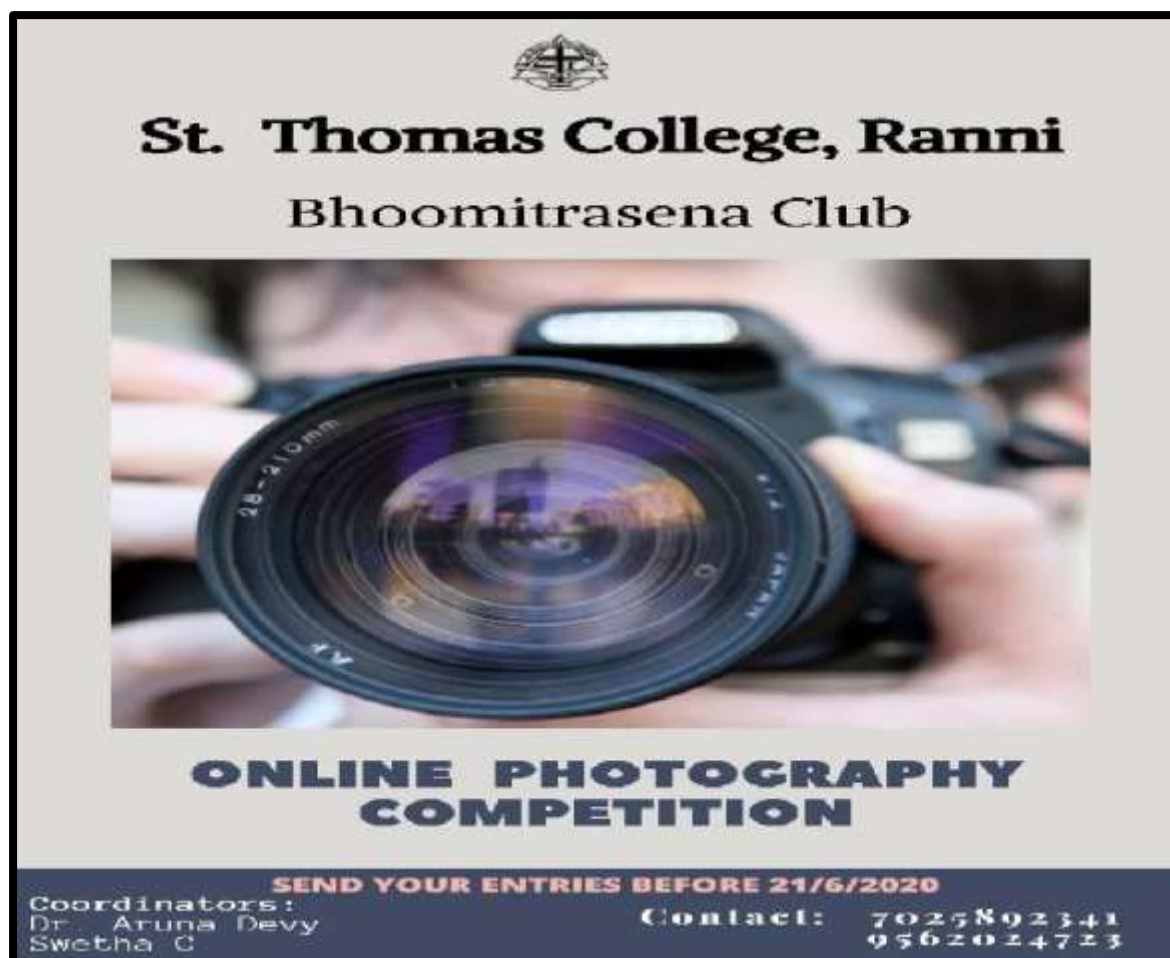
To commemorate World Environment Day, NSS Volunteers organised a poster designing competition that invited department-wise entries. Each department was encouraged to submit three posters, resulting in a total of 21 entries. After careful evaluation, the first prize was awarded to the Chemistry department for their exceptional entry. This event successfully engaged the students in a creative exploration of environment-related themes and showcased their collective dedication to raising awareness about environmental issues through the power of art and design.



Online Photography Contest on the theme:

“Nature”

Organising Department/ Agency	Date
Bhoomitra Sena Club	21/06/2020

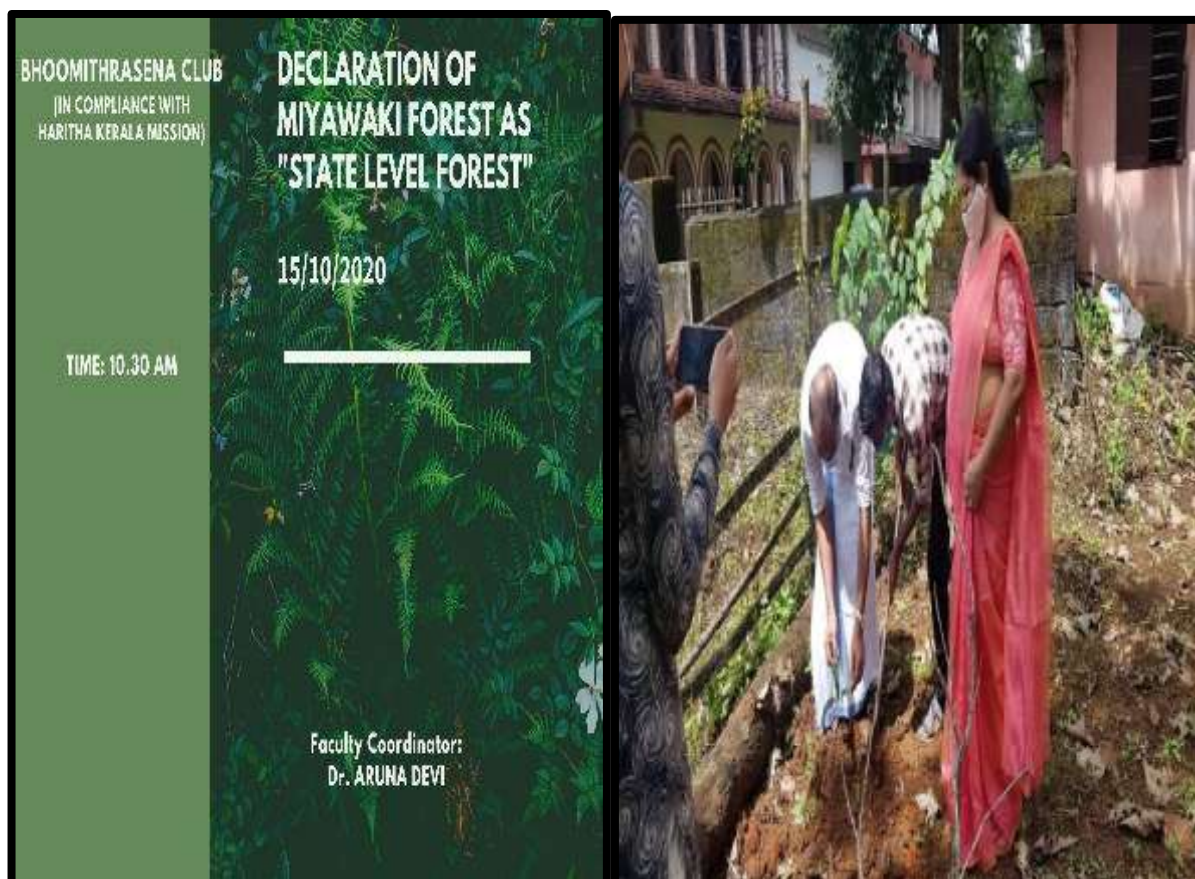


Bhoomitra Sena Club organised an Online Mobile Photography Competition. Enthusiastic participants from various departments joined the competition, eager to capture the beauty and essence of the natural world through their mobile cameras. The competition not only showcased the talent and skill of the participants but also fostered a sense of appreciation and admiration for the wonders of nature. Through their photographs, the participants encouraged viewers to connect with the environment, sparking a deeper understanding and sense of responsibility towards nature conservation.



Declaration of “Pachathuruthu” as State Level Forest.

Organising Department/ Agency	Date
Bhoomitra Sena Club in association with Haritha Keralam Mission	15/10/2020



“Pachathuruthu” established by the BMSC (Bhoomitra Sena Club), achieved the remarkable milestone of being declared a state-level forest by the Haritha Kerala Mission. The recognition of “Pachathuruthu” as a state-level forest, highlights the tremendous efforts and dedication put forth by the members of the BMSC and their commitment to environmental conservation.



Webinar - “Household Farming”	
Organising Department/ Agency	Date
Bhoomitra Sena Club in association with Nature Club	01/02/2021



Bhoomitra Sena Club and Nature Club collaborated to organise a webinar on “Household Farming” to familiarise the students with traditional agricultural practices through household vegetation. Sri V. K. Sreedharan, Faculty Coordinator, Kerala Institute of Local Administration (KILA) delivered the keynote address wherein he shared his extensive knowledge on the subject.



Setting up of Pipe Compost Units

Organising Department/ Agency	Date
Bhoomitra Sena Club	23/03/2021



Members of the Bhoomitra Sena Club took a proactive step towards promoting sustainable waste management practices by implementing pipe compost units in the campus. Four pipe compost units were installed at different locations, specifically near the areas where students washed their lunch boxes, to create a convenient and efficient system for students to dispose of their food waste responsibly.



2021-22

World Environment Day-Online Inter-Collegiate Quiz Competition	
Organising Department/ Agency	Date
Bhoomitra Sena Club	05/06/2021



Bhoomithra Sena Club organised an online Intercollege Quiz Contest as part of celebration of World Environment Day. The contest served as a platform for students from various colleges to showcase their knowledge and understanding of environmental topics. Ms.Arathi, St.Thomas College, Ranni, emerged as the first prize winner. The contest aimed to engage and educate participants on important environmental issues while fostering a sense of friendly competition. Participants were tested on their knowledge of various aspects of the environment, including sustainability, conservation, and climate change.



Mobile Photography Contest on the theme “Nature”	
Organising Department/ Agency	Date
Bhoomitra Sena Club in association with Zoology Dept.	09/06/2021



In collaboration with the Department of Zoology, Bhoomitra Sena Club organised a Mobile Photography Contest based on the theme “Nature”. This contest provided participants with an opportunity to showcase their photography skills and capture the beauty of the natural world. Aiswarya Manoharan and Alfia Majeed secured first and second prizes respectively.



1. Webinar on “Varu Namukkoru Vanam Srishtikkam”	
Organising Department/ Agency	Date
Bhoomitra Sena Club in association with Nature Club	09/02/2022



Bhoomitra Sena club and Nature club jointly organised a webinar “Varoo Namukkoru Vanam Srishtikkam” (“Come, Let’s Create a Forest”) in which Sri Manoj Kumar I.B., an electrical engineer-turned-environmentalist talked about the importance of nature conservation. He shared his experience of turning an acre of land around his house to a jungle, by not tending to brambles and weeds, of doing a lot of things by doing nothing.



2. Zero-Waste Competition

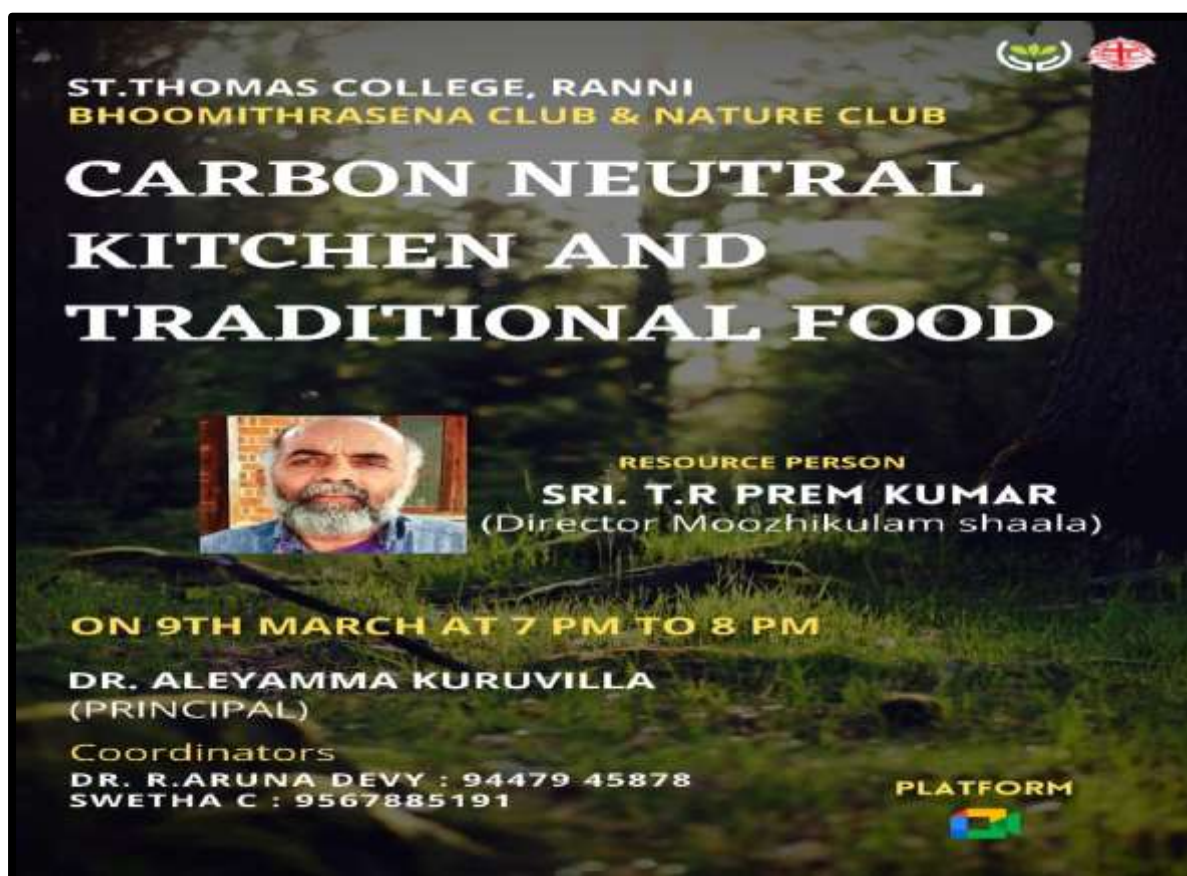
Organising Department/ Agency	Date
Bhoomitra Sena Club	20/02/2022



Bhoomitra Sena Club organised an engaging “Zero Waste Competition” aimed at promoting creativity and environmental consciousness. Participants were encouraged to create art and craft pieces using plastic, electronic, and other waste materials, showcasing their talent and resourcefulness. The competition witnessed a remarkable display of artistic skills and ingenuity, with participants transforming discarded materials into attractive works of art. Ms. Siji Thomas, a student from the II DC Botany secured the first prize.



3. Talk on “Carbon-Neutral Kitchen & Traditional Food”	
Organising Department/ Agency	Date
Bhoomitra Sena Club in association with Nature Club	09/03/2022

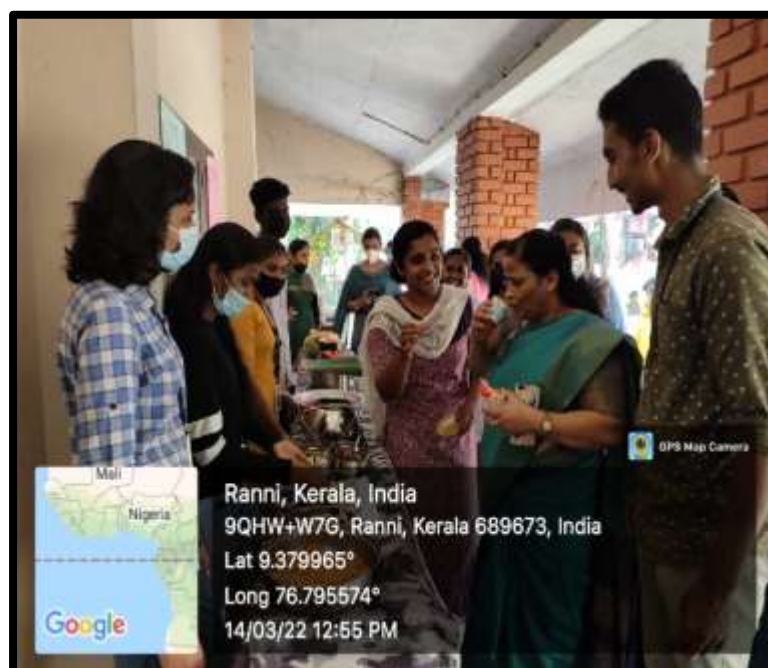


Bhoomitra Sena Club and Nature Club jointly organised an enlightening online talk by Sri. T R Premkumar, the Director of Muzhikulam Shala. The session was based on the prospects of Carbon-Neutral Kitchen and the value of traditional food practices. The talk shed light on the health and environmental benefits of consuming raw and uncooked food, also known as Carbon-Neutral food. He emphasized the significance of returning to our roots and embracing traditional methods of living to lead a more sustainable lifestyle.



4. Food Fest: “ Neutre-en-Carbone”

Organising Department/ Agency	Date
Bhoomitra Sena Club in association with Nature Club	14/03/2022



Bhoomithra Sena Club and Nature Club jointly organised an exciting food fest titled "Neutre-en-Carbone " in the college auditorium. The event aimed to promote sustainable food practices and raise awareness about carbon-neutral cuisine. The event showcased how simple dietary choices and cooking methods can contribute to a healthier planet. From plant-based delights to innovative recipes that minimize environmental impact, the Food Fest presented a diverse range of culinary delights that were both flavourful and sustainable.



Awareness Class on Safe Disposal of Waste	
Organizing Department/ Agency	Date
NSS in association with State Suchitwa Mission	25/03/2022

സെന്റ് തോമസ് കോളേജ് റാന്നി

ജില്ലാ ശുചിത്വ മിഷൻ
എൻ.എസ്.എസ് യൂണിറ്റ് - 44

മാലിന്യ സംസ്കരണ ബോധവൽക്കരണ ക്ലാസ്സ്

ശ്രീ. അജയ് .കെ. ആർ
ജില്ലാ പ്രോഗ്രാം ഓഫീസർ ,
ശുചിത്വമിഷൻ ,പത്തനംതിട്ട

ദിവസം: 25-03-2021
സമയം: 10:30 am
സ്ഥലം: സെമിനാർ ഹാൾ

"ശുചിത്വം ശീലമാക്കാം"

ഉപയോഗശൂന്യമായ പ്ലാസ്റ്റിക് , പേപ്പർ തുടങ്ങിയ വസ്തുക്കൾ എങ്ങനെ കൈകാര്യം ചെയ്യണം ? നമുക്ക് മനസ്സിലാക്കാം.





മാലിന്യമുക്ത കേരളം

स्वच्छ भारत
एक कदम स्वच्छता की ओर


E-WASTE


PAPER


PLASTIC


GLASS


METAL


ORGANIC

NSS Unit, in collaboration with State Suchitwa Mission organised an awareness class on the proper disposal of bio-waste. Mr. Ajay K. R., District Program Officer, Suchitwa Mission, was the keynote speaker. The objective of the awareness class was to educate and inform students about the safe and responsible management of bio-waste.



ORIENTATION ON E-WASTE MANAGEMENT

In February 2020 an orientation on E-waste management was organised by IQAC in collaboration with Green Ambassadors and KARO SAMBHAV Cohesive e-waste Movement. The session included presentation and videos on E-waste management, Question and Answer round, and Games and Quizzes based on E-waste.





ST. THOMAS COLLEGE, RANNI

2021-22

SIGNING OF THE MoU BETWEEN CLEAN KERALA COMPANY LIMITED AND PRINCIPAL, ST. THOMAS COLLEGE, RANNI

To work together on a project of developing a system for collection, sorting, segregation and safe disposal of the non-biodegradable waste, and electronic and hazardous waste generated in the campus, and thereby to implement sustainable waste management practices, St. Thomas College, Ranni, signed an MoU with Clean Kerala Company Limited on 3rd February 2022.





ST. THOMAS COLLEGE, RANNI

MEMORANDUM OF UNDERSTANDING

BETWEEN



Clean Kerala
Company Limited

CLEAN KERALA COMPANY LIMITED
THIRUVANANTHAPURAM

AND



ST. THOMAS COLLEGE

Ranni, Pathanamthitta Dist.



ST. THOMAS COLLEGE, RANNI

For

IMPLEMENTING SUSTAINABLE WASTE MANAGEMENT PRACTICES

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (hereinafter "Memorandum" or MoU) is dated this the 3rd day of February 2022

BETWEEN

Clean Kerala Company Limited having its registered office at State Municipal House, Vazhuthacaud, Thiruvananthapuram – 695010 (hereinafter referred to as "First Party" which expression shall mean and include its administrators and permitted assigns),

AND

The Principal, St. Thomas College, Ranni having their office at Ranni, Pathanamthitta district (hereinafter referred to as "Second Party" which expression shall mean and include its administrators and permitted assigns).

(Referred to herein as "Parties" or individually as "Party")

WHEREAS

- A. The parties are interested in working together in connection with the Purpose which is described in this Memorandum.
- B. This Memorandum sets out the initial relationship between the Parties as well as the respective rights and responsibilities of each Party.
- C. Each Party respectively is expected to act in good faith in accordance with this Memorandum.



ST. THOMAS COLLEGE, RANNI

NOW THEREFORE IN CONSIDERATION OF the premises and the mutual covenants set forth herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged the parties hereto covenant and agree as follows:

1. PROJECT AND PURPOSE

- A) The Parties intend to work together on a project which is meant to deal with the non-biodegradable waste and electronic and hazardous wastes generated in the campus.
- B) The Project has the following purpose:
To develop a system for collection, sorting, segregation and safe disposal of the non-biodegradable waste and electronic and hazardous wastes generated in the campuses of St. Thomas College, Ranni thereby implementing sustainable waste management practices.

2. GENERAL OBLIGATIONS

- a) The Parties will act in good faith and will use their best endeavours to achieve the Purpose and to give effect to the terms of this Memorandum.
- b) The Parties hereby acknowledge and agree that they will each respectively perform all acts and execute all documents as reasonably required in order to give effect to the terms of this Memorandum.
- c) Each Party agrees to cooperate in the spirit of mutual understanding and goodwill in order to develop the Parties' relationships with one another and in order to pursue the purpose.

3. ROLES OF PARTIES

- a) **St. Thomas College, Ranni** will have the following obligations in relation to the Project:
 - 1. Provide a material collection facility in the campus for storage of material prior to transportation
 - 2. Facilitate efficient and regular collection operations throughout the campus.
 - 3. Ensure segregation of the non-Biodegradable waste and recyclable e-waste and hazardous waste material and aggregation of the same

3



- to the point from where Clean Kerala Company should collect the material
4. Loading of material to the collection vehicle arranged by Clean Kerala Company
 5. Designate an Officer in the campus from among the Faculty members to facilitate CKCL where this project is undertaken to coordinate the activities under this project
 6. Organise programmes to create awareness on sustainable waste management practices among the campus users
 7. Building a framework to monitor the activities and sustenance of this project
 8. Devise strategies to reduce waste generation in the campus, implementation of green protocol
 9. Provide PPE Kit to persons engaged in collection of bio medical waste from different locations of the campus.
- b) **Clean Kerala Company Limited** will have the following obligations in relation to the Project:
1. Collection of Non-Biodegradable waste and e-wastes and hazardous wastes separately from a single point in the campus. The rates for disposal for hazardous chemicals shall be informed in writing before lifting.
 2. The rates for disposal of e-wastes and hazardous and se-wastes shall be based on the standing government order (e-waste G.O.(Rt) No. 479/2021/LSGD, G.O. No. 1117/16/LSGD and G.O no. 3326/2017/LSG for definitions of e-waste and hazardous e-waste). Any amendments in the above-mentioned orders shall be duly communicated to the second party. The rates payable to the College for the non-biodegradable waste is given in the table below.

Sl No	Item	Unit	Price in Rs.
	Metal		
1	Metal Scrap	KG	15
2	Stainless Steel	KG	50
3	Aluminium soft drink can	KG	30



	Paper		
4	News Paper	KG	9
5	White paper / Answer sheet	KG	5
	Plastics		
6	Milk Pouch	KG	10
7	Oil Cover	KG	3
8	Paper cup	KG	2
9	Tetra Pack	KG	2
10	PET Bottle	KG	10
11	Aluminium Foil	KG	10
12	Multi-Layer plastic/Thermocol unsegregated plastic products	KG	NIL

*Any other items and its rate that comes up during the project period will be finalized mutually.

3. All payments for lifting of the waste material shall be made within 10 days of generation of invoice from CKCL and all payments due to the college being the value of the waste as per table above will be paid in 10 days.
4. Implementation of collection calendar determining the frequency of collection, specific types of material to be collected, etc which will be finalised by mutual discussion and once finalised that will form part of this MoU.
5. Logistics arising from the single point collection to recycling or disposal stations (includes transportation from the collection point to RRFs and beyond).
6. Coordination and liaising with the officers from St. Thomas College, Ranni who are appointed as the nodal officer/s for this project.
7. Provide faculty support for organising training /awareness programmes.
8. Guidance in recordkeeping and monitoring of the project.



9. Ensure safe and scientific disposal of all waste collected including landfilling of non-recyclable materials derived from the collected material as the case may be.
10. Payment of predetermined rates for recyclable e-waste and others.
11. Invoicing of the materials which are hazardous and non-recyclable to the College and levy the cost involved for safe disposal.
12. Issue receipt on removal of waste from the campus.

4. TIME AND DURATION OF THE PROJECT

- a) This Memorandum will remain in effect for a period of **One Year** from the date of signing, unless and until otherwise terminated by the Parties.
- b) The Parties may terminate this Memorandum by mutual agreement.
- c) Either Party may terminate this Memorandum by giving a notice of 45 days to the other Party.

5. TAXES, DUTIES AND LEVIES

All central, state or local taxes and levies applicable from time to time shall be paid by both Parties as per Government rules and procedures in vogue.

6. ENVIRONMENT, HEALTH, SAFETY POLICY AND PRACTICE

Both Parties shall implement and adhere to the environment, health and safety policy and practices, during the contract period. The employee and worker safety, control mechanisms of litter, pest, odour, fire, surface runoffs, etc. shall be taken care by both the parties.

7. FORCE MAJEURE

Neither the First Party nor the Second Party shall be held responsible for non-fulfilment of their respective obligations under this agreement due to the exigency of one or more of the force majeure events such as natural disasters, civic unrest, military unrest, etc. provided on the occurrence and cessation of any such events, the party affected thereby shall give a notice in



writing to the other party within fifteen days of such occurrence or cessation. If the force majeure conditions continue beyond three months, the party shall then mutually decide the future course of action.

8. AMENDMENT OR CANCELLATION OF THIS MEMORANDUM

This Memorandum may be amended or modified at any time in writing by mutual consent of both parties.

In addition, the Memorandum may be cancelled by either party with 45 days advance written notice, with the exception where cause for cancellation may include, but is not limited to, a material and significant breach of any of the provisions contained herein, when it may be cancelled upon delivery of written notice to the other party.

9. DISPUTE RESOLUTION

- a) Any dispute(s) arising out of this Memorandum shall, as far as possible, be settled amicably between the Parties hereto failing which the following shall apply:
- b) The Government of Kerala will take the final decision over any dispute, differences or claims arising out of this Memorandum and that will be binding on both parties.

10. SEVERABILITY CLAUSE

In the event that any provision of this Memorandum shall be deemed to be severable or invalid, and if any term, condition, phrase or portion of this Memorandum shall be determined to be unlawful or otherwise unenforceable, the remainder of the Memorandum shall remain in full force and effect, so long as the clause severed does not affect the intent of the Parties. If a court should find that any provision of this Memorandum to be invalid or unenforceable, but that by limiting said provision it would become valid and enforceable, then said provision shall be deemed to be written, construed and enforced as so limited.



ST. THOMAS COLLEGE, RANNI

11. ENTIRE AGREEMENT

The herein contained Memorandum constitutes the entire understanding of the Parties pertaining to all matters contemplated hereunder at this time. The Parties signing this MoU desire or intend that any implementing contract, license, or other agreement entered between the Parties subsequent hereto shall supersede and pre-empt any conflicting provision of this Memorandum whether written or oral.

12. APPLICABLE LAW

This Memorandum shall be governed by and construed in accordance with the laws of the State of Kerala.


13. AUTHORISATION AND EXECUTION

The signing of this Memorandum as such intends that the signatories shall strive to reach, to the best of their abilities, the goals and objectives stated in this MoU.

This Memorandum of Understanding shall be signed by District Manager, Pathanamthitta (Clean Kerala Company Limited, Thiruvananthapuram) and Principal, St. Thomas College, Ranni, Pathanamthitta Dist. and shall be effective as of the date first written above.



DEEPA KUMAR M.B.
District Manager
Clean Kerala Company Ltd.
(Under LSOD-Government of Kerala)
Pathanamthitta
Ph: 7558059333
Email: pta.ckcl@gmail.com
(District Manager, Pathanamthitta
Clean Kerala Company Limited) 3.02.2022



PRINCIPAL
Dr. ALEYAMMA KURUVILLA
ST. THOMAS COLLEGE
PAZHAYANGADI P.O., RANNI-689 673
(Principal, St. Thomas College, Ranni) 3.02.2022 8



ST. THOMAS COLLEGE, RANNI

Witness

1. Name & Address

Dr. Sulekha Ely Jacob
Assistant Professor
Dept. of English
St. Thomas College
Ranni

Signature

Witness

1. Name and Address

Shijo M. Samsun
Horticulture Mission
Puthanambath
9245591965

Signature



ST. THOMAS COLLEGE, RANNI

INTERNAL GREEN AUDIT



INAUGURAL CEREMONY- CNPI INTERNAL GREEN AUDIT 2021-2022

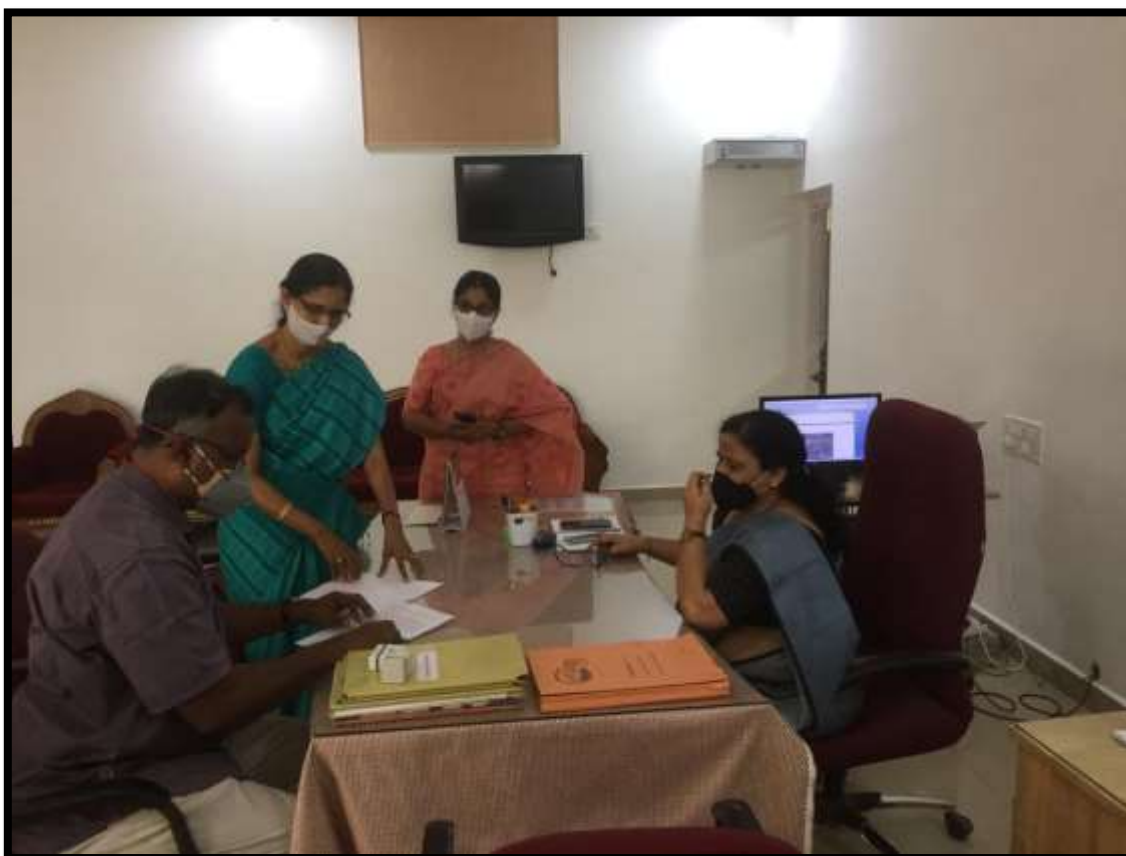
On 18th January 2022, an Internal Green Audit was initiated in the campus in technical collaboration with Tropical Institute of Ecological Sciences (TIES), Kottayam. As part of this project, waste audit was conducted with the objective of identifying the quality and quantity of various types of solid wastes in the campus, various disposal methods adopted in the campus and to ensure the implementation of safe waste disposal practices. Water audit was conducted with the objective of finding out the pattern of water use and quantity of water wastage in the campus, and to take remedial measures and adopt suitable conservation methods. Biodiversity audit was conducted with the aim of identifying the floral and the faunal diversity of the campus, to impart scientific temper among the students, and to enhance the biodiversity of the campus.





CNPI GREEN AUDIT

SIGNING OF MoU BETWEEN TROPICAL INSTITUTE OF ECOLOGICAL SCIENCES (TIES) AND ST.THOMAS COLLEGE, RANNI





MEMORANDUM OF UNDERSTANDING



കേരളം KERALA

DA 044325

MEMORANDUM OF UNDERSTANDING

BETWEEN

TROPICAL INSTITUTE OF ECOLOGICAL SCIENCES (TIES), KOTTAYAM, KERALA

AND

ST. THOMAS COLLEGE, RANNI

This Memorandum of Understanding (MoU) is entered into between TROPICAL INSTITUTE OF ECOLOGICAL SCIENCES (hereinafter called TIES) with the registered office at Ecological Research Campus, Velloor, Kottayam, Kerala and ST. THOMAS COLLEGE, RANNI for the purpose of expanding and promoting teaching, research, and community extension and development programmes for the benefit of the community, nature, faculty, students and NGO.

I. Tropical Institute of Ecological Sciences (TIES) agrees that:

- A. TIES will provide partner Colleges with experts for projects and programmes under CNPI, and all technical assistance such as research methodologies, survey sheets, trainings etc.
- B. TIES will provide identification keys, field guides, and laboratory and field research protocols to conduct experiments for the projects/programmes under CNPI.

No. 14311 / Rs. 100 - Principal
12/11/2023

Aminu B. B. P.
ST. THOMAS COLLEGE, RANNI



കേരളം കേര KERALA

DA 044326

- C. TIES will provide expert trainings to conduct various research and community development programmes of the college under CNPI.
- D. TIES will provide project opportunities for individual students/ faculty members recommended by the college for projects in various funded projects as per the rules and regulations of the Universities and Governments.
- E. TIES will submit grades for each student/ faculty participated in CNPI to the college for evaluation purposes.
- F. The CNPI activities will be monitored regularly by TIES team and periodic reports will be communicated to the college.
- G. TIES will assist in preparation of publicity materials, publication of reports, scientific papers and other publications.
- H. TIES will provide its infrastructure facilities of TIES campus for various projects/programmes under CNPI, if needed.
- I. TIES will make the arrangements and provide sufficient help for getting legal permissions and other official permissions required for community linked activities such as sample collection, studies inside the forest areas, visit to government institutions, etc.
- J. TIES will not be responsible for any loss incurred to the participants due to unforeseen reasons beyond our control.

No 14312 Rs 100/- Principal
13/11/2022 St. Thomas College

[Signature]
Principal





ST. THOMAS COLLEGE, RANNI

K. No financial support will be provided by TIES in conducting CNPI projects and programmes.

L. The services offered by TIES under CNPI are chargeable and the same should be agreed by both parties and given in Annexure I. But the expenses towards laboratory experiments, printing and publication expenses, food expenses (during seminar/ workshop etc.) etc. if any, should be borne by the college.

II. St. Thomas College, Ranni agrees that:

- A. College will be responsible for organising all programmes and projects under CNPI as per pre-agreed time schedule. Timely conduct of programmes and implementation of project is the sole responsibility of the college.
- B. College shall identify and select the faculty members and students to work with CNPI for every academic year. Three to ten teachers and 75 to 150 students should be part of the CNPI. The rest of the students and faculty in the college shall be facultative participants. But all should be the beneficiaries of the CNPI.
- C. College shall provide its laboratory or other infrastructure facilities for the conduct of projects/programmes under CNPI.
- D. College shall make arrangements for regular monitoring and documentation of the programmes/projects under CNPI. This will be used for the final report publication.
- E. The organising expenses of various projects and programmes under CNPI will be borne by the college.
- F. College shall pay the consultation fee for TIES as per the schedule given in Annexure I.

III. Conditions of the Agreement

- A. This agreement will become effective upon signing by the designated representatives from both institutions for a period of one year (Or the period agreed by the parties).
- B. Any alteration of the provisions of this agreement will become effective only upon the mutual written consent of both institutions.
- C. This agreement is valid from the midnight of 17-01-2022 to the midnight of 16-01-2023 Indian Standard Time or it may be terminated upon the request of either parties made at least one month prior to the proposed termination date.






General Terms and conditions

- A. All communications and publicity materials (notices, flyers, banner, boards) should carry the CNPI logo and footer/ header as
Organised by:
St. Thomas College, Ranni
In collaboration with:
TROPICAL INSTITUTE OF ECOLOGICAL SCIENCES, Kottayam
- B. Any Research papers / Publications/ Popular science articles in electronic or print media, which will be produced in association with the programme will mention TIES & IISAC with due credits.
- C. Under no circumstances, the participants may engage in any action which is against various laws of India especially various laws to protect the biodiversity of the country. No specimen collection and transportation / possession allowed without written consent from the statutory authorities. In case of any violation, the individual will be solely responsible for his / her act.
- D. Involvement of any other agencies in CNPI programmes should be done with written consent of both parties only.

IV. Jurisdiction clause

In the event of any dispute arising out of this agreement the jurisdiction of the court of District, Kottayam, shall apply.


Principal
St. Thomas College, Pazhavangadi P.O.
Ranni 689673



Date: 18-01-2022


Director
Tropical Institute of Ecological
Sciences
Velloor P.O., Kottayam 686 501





ST. THOMAS COLLEGE, RANNI

TRAINING SESSIONS ON INTERNAL GREEN AUDIT BY TIES





ST. THOMAS COLLEGE, RANNI



CNPI GREEN AUDIT REPORT

St Thomas College, Ranni,
Pathanamthitta





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1. WASTE MANAGEMENT AUDIT

Waste" is everything that no longer has a use or purpose and needs to be disposed of. The term certainly applies to discarded material, but there are specific definitions for waste that affect how waste is regulated and must be handled, especially in professional settings. A college campus has both biodegradable and non-biodegradable wastes. Besides hazardous (chemicals *etc.*) and non-hazardous wastes are also there. Both solid and liquid wastes are also in every campus. The present survey and audit are pertaining to the solid wastes alone. Waste management or waste disposal means the processes and actions required to manage waste from its inception to its final disposal. It is matter of concern that proper scientific waste disposal mechanisms are limited to very few campuses in India.

Waste management audit means the assessment of quantity and quality of different type of wastes, and its management in an establishment. The present audit assessed the quantity and quality of solid wastes, present management methods and future suggestions. The audit can also make the organization more effective at reducing waste management costs by educating staff about proper waste disposal and making better use of natural resources. When performing a waste audit, the organization should not inform staff about the audit prior to the completion of the audit. Informing staff in advance can alter waste disposal habits resulting in an inaccurate and counterproductive audit.

1.1. AIM

To conduct a waste management audit of the St Thomas College, Ranni campus and propose a future plan.

1.2. OBJECTIVES

- To identify the quantity and quality of various types of solid wastes of the college campus
- To identify the various disposal methods adopted inside the campus
- To propose suggestions to enhance waste disposal of the college campus



1.3 METHODOLOGY

A baseline survey of the waste generated inside the campus was conducted through site survey and interactions with system staff and stakeholders. Students were divided into separate groups for assessing the same using a questionnaire survey method. The amount of waste generated including paper waste, plastic waste, e- waste, biowaste and other waste (construction and demolition waste, clothes, sandals, *etc*) were estimated for college campus, office, hostel *etc.*, separately. During the auditing period the canteen of the college was closed, so the data of the canteen area is not included. The data was recorded in tabular sheets. There were 3 student co-ordinators and 2 teacher co-ordinator for waste management audit.



1.4 RESULTS AND OBSERVATION

WASTE AUDITING OF ST THOMAS COLLEGE, RANNI							
Sl.No.	Location	Waste Type					
		Paper Waste (Carton ,Paper coverlet) in kilograms per week	Plastic (cover, packing, others)in kilograms (per week)	Biowaste (sweeping, food waste, crop waste) in kilograms per week)	Amount of weekly waste generated (in kg) (Plastic, Paper, Bio-waste)	E-Waste (CD, Printer, Computer, etc) in grams per year	Other waste(Construction and demolition waste, sandals, clothes etc.) in kg (per year)
1	College Campus	1.245	1.4	5.978	2.299	2.563	556.89
2	Office	1.145	0.67	0.774	1.351	4.789	4.578
3	Canteen	0	0	0	0	0	0
4	Hostel	0.975	0.59	10.5	2.560	0	8.632
5	Others	0.456	0.225	3.15	0.9385	0.78	7.855
	Total	3.823	2.89	20.402	7.149	8.132	577.955

Table 1. Waste Auditing of St Thomas College, Ranni



The data was collected weekly and yearly basis. Paper, plastic and biowaste data was collected on weekly basis, on the other hand, e-waste and other waste which means construction and demolition waste, sandals, etc. were accounted on a yearly basis. The major portion of weekly waste accounts for bio-waste followed by paper and plastic. In the whole waste audit data in the canteen was shown nil, as the canteen was closed.

Table 2: Amount of different weekly waste generated at each location

Section*	Quantity in kg
College Campus	8.623
Office	2.589
Canteen	0
Hostel	12.065
Others	3.836

(*here bio-waste, plastic waste and paper waste are considered)

E-waste and other waste were audited on an annual basis and in that other waste like Construction and demolition waste, sandals, clothes etc, accounts the lions' share, which means 577.955 kg/year and e-waste accounts for 8.132 kg/year.

Paper Waste (Carton, Paper cover, etc.) per year (kg)	Plastic (Cover, packing, others) per year (kg)	Biowaste; (sweepings, food waste, crop waste) per year (kg)	E-waste (CD, Printer, Computer, etc.,)per year (kg)	Other waste (Construction and demolition waste, Sandals, Clothes,etc) in grams/ number (per year) (kg)
64.74	72.8	310.856	2.563	556.89
59.5712	34.84	40.248	4.7892	4.578
0	0	0	0	0
50.7416	30.68	546	0	8.632
23.7276	11.96	163.8	0.78	7.855
198.7804	150.28	1060.904	8.1322	577.955

Table 3: Annual waste generation



Graph 1: Amount of different waste (Annual) at St Thomas College campus

The major . of waste generated inside the campus is the bio-waste , that is 53% of the total waste generated, followed by other waste. The current audit shows that the college is generating very less quantity of plastic waste and which shows a good attitude towards the environment. The audit also reveals that there are some efforts put forward by the college in the waste disposal mechanism in the college campus. The e-waste generated is selling outside to some vendors rather than dumping in the campus. In the case of bio-waste, vermicompost, pipe compost and a compost pit methods are followed. But in the case of paper waste, a portion of it is burned and rest are dumped in the outer courtyard. So a planned and sustainable waste management measures are required inside the campus.



Fig. 1: Vermicomposting Unit at St Thomas College



1.5 CONCLUSION & RECOMMENDATIONS

Green audit in the St Thomas College was conducted as a tool to enhance its sustainable development by adopting necessary management and conservation strategies. By analyzing the results of present state of the energy, water and biodiversity audit, suggestions and recommendations are provided to reduce their anti-environmental activities, to adopt energy and water conservation measures, and strategies to improve the biodiversity of the campus.

The pioneering green audit in the college is successfully completed. The inputs collected during the study can be used in further research activities.

After the initial study, TIES suggests that similar green auditing programmes should be conducted every year for the improvement of overall environmental performance of the college. Gradually, sustainable resource utilization can be achieved within a period of 4 years.

The greatest source of waste generated in the campus is the bio-waste, so proper management measures should be taken to dispose or compost the waste into useful other products, like biogas, fertilizer, etc. Recycled paper should be used in the campus. Even though plastic waste is less, it's reduction will a eco-friendly green campus.

- Use of recycled paper will reduce the dependency over the normal paper
- Instead of giving the bio-waste for outside agents composting can be done inside the campus. Composting is a simple as well as effortless way of recycling organic waste. The biodegradable waste will be degraded by microorganisms and that can be used as good manure for trees as well as vegetable garden.
- Follow the principle of 3R's viz: Reduce, Recycle and Reuse
- Hazardous waste should be treated properly to avoid environmental and health issues
- Encourage students for recycling waste into usable products.
- Avoid the use of single-use plastics, and other items.
- Replace disposable with reusable items; ban all disposables in the campus.
- Installing a biogas plant will help to reduce the biowaste (including food waste, toilet waste, etc) and the gas generated can be used in labs, kitchens, etc.



- Thumboormuzhi composting model, Deenabandhu bio-gas unit, etc are good examples to convert waste-to-energy
- Encourage parents to make a green lifestyle at their homes through students



2. WATER AUDIT

Water audits provide an enjoyable educational way for students to examine the ways that they use water every day, and to encourage classmates, teachers and college administrators to make their college more water-efficient and cost-effective. By completing the project, students and college staff learnt about the amount of water that is consumed in the college for activities including washing hands, drinking, in the laboratories, watering landscaped areas and flushing toilets and urinals. From the results obtained, students and staffs will consider better ways to improve water conservation throughout the building and on college campus. Water auditing is the systematic and scientific examination of water usage in the campus. It determines the usage pattern of water in different departments, laboratories and other areas in the campus with the help of students and teachers. In order to facilitate proper usage of water, water audit is an essential tool.

However, the investigators were unable to collect all the required data, as the college has not been working normally due to Covid-19 restrictions.

2.1. AIM

To find out the usage pattern and conservation of water in the St Thomas College campus.

2.2. OBJECTIVES

- To find out the pattern of water use in the St Thomas College campus
- To find out the quantity of water wastage in the St Thomas College campus
- To suggest remedial measures and water conservation practices

2.3. METHODOLOGY

After getting orientation about Green audit, students were divided into groups and conducted mock audit. For the study, the students were further divided into several groups and assigned different areas of the campus for auditing. The whole campus was mainly divided into three areas, viz., Main block, Commerce block and Economic block.



The data was tabulated and analyzed. Auditing was done at 17 locations by 23 students and two teacher co-ordinators. Water audit was done as an on-site survey in which several fixtures, leakages, etc. were identified and noted.

2.4. RESULTS AND OBSERVATIONS

The data on water usage pattern of the St Thomas College campus was estimated through a systematic and time-bound survey. The total water usage data is given below (Table 5). The major source of water in the campus are well water, panchayat piped water and also a rain water harvesting system. The water is used as drinking water, irrigation purpose, bathroom usage, and other domestic usages along with laboratory purposes.

During the audit it was reported that there are 7 water storage tanks in the campus which has a total of 6400 L capacity. These are situated in the main block, Economics block, English and commerce block respectively.

Sl.No.	Area	No.	Capacity (L)
1	Main Block	4	500
2	Economics Block	1	400
3	English Block	1	2000
4	Commerce Block	1	2000
TOTAL		7	6400

Table 4: Various water storage tanks in the campus

The highest quantity of water usage was observed at the second floor of the hostel that is 1982 L, followed by the area near the auditorium (Table 5 and Graph 6). It was found that 5919.28 L of water is consumed in the campus a day and thus yearly approximately 2160537 L/Year. The least amount of water is used at the Library that is 5.52 L.

The loss of water through leakage in the campus was also estimated. Data shows that there is one leakage at the Tourism Department (Table 6).



Location	Total daily usage of water (L)
English Department	39.98
Main Block 1st Floor	69.35
Main Block 2nd Floor	583.26
Main Block 3rd Floor	134.82
Near Auditorium	1125
Library	5.52
Physical Education Dept. (1st Floor)	17.6
Physical Education Dept. (2nd Floor)	0
Hostel (Ground Floor)	11.2
Hostel (1st Floor)	240
Hostel (2nd Floor)	1982.2
Naalukettu Building (Tourism Department Staff Room)	111.2
Naalukettu Building (History Department 1st Floor)	8.6
Naalukettu Building (Tourism Department)	535.5
Naalukettu Building (Ground Floor Toilet)	824.4
Naalukettu Building (Commerce Department)	163.55
Economics Department	67.1
Total	5919.28

Table 5: Various water storage tanks in the campus



ST. THOMAS COLLEGE, RANNI

Location	Equipment type	Condition	Rate of discharge (L/ min)	Duration of Use (minutes)	Average quantity per use (L)	Average No. of users	Total Daily Uses (L)	Leakage or not (L/minute)	Amount of Leakage (L/minute)	Amount of Leakage (L/day)
English Department	Wash Basin Tap	Good	6	3	2	6	12	0	0	0
	Toilet Tap	Good	8	3	1.33	6	7.98	0	0	0
	Toilet Flush	Good	6	12	3	6	18	0	0	0
	Bathroom Faucet	Good	18	2	0.33	6	2	0	0	0
Main Block (1st Floor)	Kitchen Tap	Moderate	4.5	1	5.25	4	21	0	0	0
	Utility Tap		2.69	6	2.59	20	17.3	0	0	0
	Bathroom Faucet	Good	2.33	1	1.04	10	3.47	0	0	0
	Bathroom Washbasin	Moderate	2.93	1	1.31	10	4.38	0	0	0
	Bathroom Tap	Good	9.3	2	2.32	10	23.2	0	0	0
Main Block (2nd Floor)	Utility Tap		3	2	1.25	6	7.5	0	0	0
	Tap		4.79	4	1.06	18	19.16	0	0	0
	Health Faucet	Good	7.52	5	1.88	20	37.6	0	0	0
	Bathroom Faucet		2.33	6	1.16	12	14	0	0	0
	Lab Taps		8.87	57	16.85	30	505	0	0	0
Main Block (3rd Floor)	Wash Basin Tap	Moderate	7.1	5	4.8	8	38.4	0	0	0
	Toilet Tap	Moderate	3.27	6	1.42	15	21.42	0	0	0
	Toilet Flush	Moderate	5	0	5	15	75	0	0	0
Common Tap Near Auditorium	Common Tap	Moderate	7.5	150	2.5	450	1125	0	0	0
Library	Tap	Good	4.14	0.66	1.38	4	5.52	0	0	0
Physical Education Department (1st Floor)	Wash Basin Tap	Good	7.9	2	2.6	2	15.8	0	0	0
	Toilet Tap	Moderate	4.5	0.2	0.45	2	1.8	0	0	0
Physical Education Department (2nd Floor)	Wash Basin Tap	Good	4.3	0	0	0	0	0		
	Toilet Tap	Good	11.4	0	0	0	0	0		
	Bathroom Tap	Good	8.7	0	0	0	0	0		
Hostel (Ground Floor)	Tap	Good	2.8	4	0.93	11	11.2	0	0	0
Hostel (First Floor)	Wash Basin Tap	Good	2.3	6	1.15	11	13.8	0	0	0

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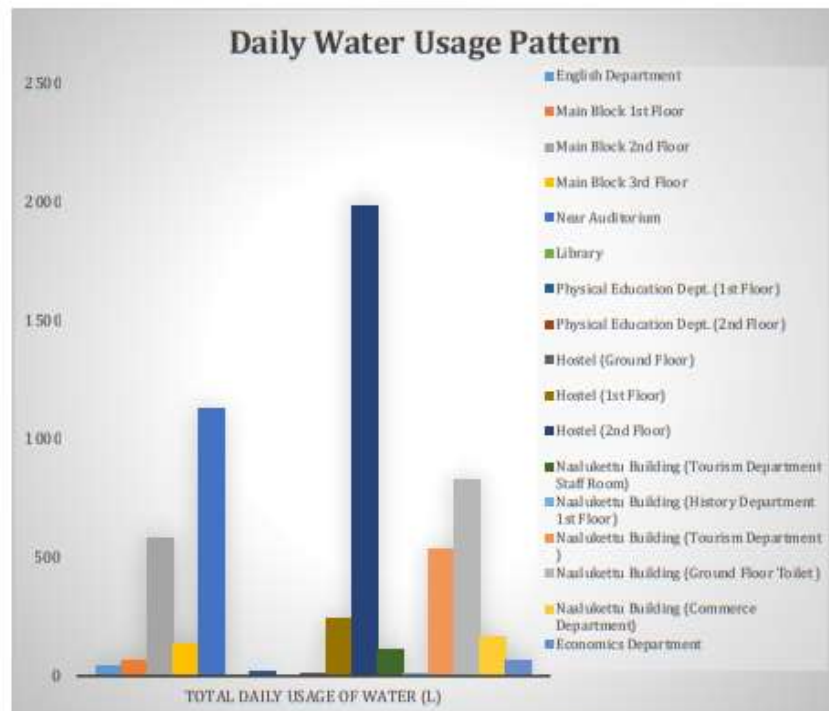


	Bathroom Tap	Good	14.1	6	7.05	12	169.2	0	0	0
	Toilet	Good	9.6	6	4.8	8	57	0	0	0
Hostel (Second Floor)	Wash Basin Tap	Good	4.3	14	2.15	29	60.2	0	0	0
	Toilet Tap	Good	11.4	58	22.8	29	661	0	0	0
	Bathroom Tap	Good	8.7	145	17.4	29	1261	0	0	0
	Wash Basin Tap	Poor	2.3	2	0.766	6	5	0	0	0
Naalukettu Building	Tap	Moderate	3.75	1	0.625	6	3.75	0	0	0
	Toilet Flush	Not Working	0	0	0	0	0	0	0	0
	Wash Basin Tap (Boys Bathroom)	Moderate	3.33	5	0.55	20	16.65	0	0	0
	Bathroom Tap	Good	8.58	10	0.858	10	85.8	0	0	0
Naalukettu Building (History Department 1st Floor)	Wash Basin Tap	Moderate	4.3	2	1.43	6	8.6	0	0	0
Naalukettu Building (Tourism Department)	Wash Basin Tap	Poor (Leaking)	0	0	0	0	0	1	0.3	432
	Tap	Good	4	37.08	1	150	148	0	0	0
	Tap	Good	4	16.1	1	50	66	0	0	0
	Toilet Tap	Good	8.5	14.08	3.54	35	119	0	0	0
	Toilet Tap	Moderate	7.5	12.08	3.12	30	90	0	0	0
	Toilet Tap	Good	7.5	15	3.75	30	112.5	0	0	0
Naalukettu Building (Ground Floor Toilet)	Wash Basin Tap	Good	10	60	3	200	600	0	0	0
	Tap	Good	10	0	0	0	0	0	0	0
	Wash Basin Tap	Moderate	7.5	0	0	0	0	0	0	0
	Filter Tap	Good	2.61	40	1.08	100	104.4	0	0	0
	Bathroom Tap	Poor	4	30	2	60	120	0	0	0
	Bathroom	New, not working	0	0	0	0	0	0	0	0
	Bathroom Tap	Good	8.57	16.1	2.85	50	137.12	0	0	0



Naalukettu Building (Commerce Department)	Tap	Good	15	0	0	0	0	0	0	0
	Flush	Good	5	12.08	5	25	5	0	0	0
	Spray Tap	Good	4.286	5	0.714	25	21.43	0	0	0
Economics Department	Wash Basin	Good	2	2	0.76	3	4	0	0	0
	Toilet Tap	Good	2.5	1	0.625	3	2.5	0	0	0
	Toilet Flush	Good	3	3	3	3	3	0	0	0
	Health Faucet	Good	3	1.5	1.5	3	4	0	0	0
Economics Department	Wash Basin Tap	Good	3.4	10	0.5	50	34	0	0	0
	Toilet Tap (Girls)	Good	1.2	15	0.6	30	18	0	0	0
	Tap (Staffroom)	Good	4.8	0.33	0.8	2	1.6	0	0	0
	Wash Basin (Staffroom)	Good	0	0	0	0	0	0	0	0

Table 6: Total water usage of St Thomas College Campus



Graph 2: Daily usage of water at St Thomas College campus



2.6 CONCLUSIONS & RECOMMENDATIONS

The water audit is an effective method to assess the water usage pattern and estimate the quantity the used in the college. Besides, it provides scientific measures to improve the water conservation preventing the water loss and lazy usage habits.

The water audit conducted in the St Thomas College campus revealed that the water usage pattern in the college is high and there is loss of water taking place in the college due to leaking taps. Hence, proper water conservation measures should be implemented in the campus.

The highest use of water is in the Ladies Toilet. The per capita use of water was not estimated.

- The leakages need to be repaired.
- The students and other staff should get regular vigil on water usage and methods such as generating awareness of water conservation through banners and posters.
- Need for regular discussions among the group members for bringing new methods and ways for conserving water in and around the campus.
- Install flow restrictors to cut down the water flow
- Turn off the taps and other water sources after use
- Checks faucets and pipes for any leakages (should do a regular examination of the same)
- Plant native trees and plants in the campus, because it adapts to the climate and other water usage which reduce the usage of water in the gardens
- Put a layer of mulch around the plants and trees inorder to maintain a cool atmosphere in the soil and which helps to store water and also mulch lowers evaporation
- Install dual flush tank to reduce the usage of water



3. BIODIVERSITY AUDIT

The biodiversity audit is conducted to analyze the present biodiversity status of the college and to propose plans to enhance the existing biodiversity. Following the audit, students have identified the floral and faunal diversity at the college surroundings through transect and quadrant methods. It provides students with hands on experience outside the classroom; their observational and identification skills will be improved identifying different flora and fauna. The random number of observation walks conducted during the last couple of months enabled the student community classify the rich biodiversity around them that provides the right ambience to pursue higher learning.

The results indicate presence of higher floral diversity against limited space availability. However, the faunal diversity is moderate. A planned greening programme will make the campus richer including more native organisms.

3.1. AIM

To conduct a biodiversity audit of the St Thomas College campus and propose areas of improvement

3.2. OBJECTIVES

- To identify the floral and faunal diversity of the college campus
- To impart scientific temperament and culture among the students through participatory research methods
- To propose suggestions to enhance biodiversity of the college campus

3.3. METHODOLOGY

A baseline survey of flora and fauna at the college campus was conducted. The total area of the college campus was divided into several plots. The audit team was divided into 8 groups with 3 members in each group. Auditing area was divided into 16 Zones and each group was



assigned with 2 zones for the 6 week auditing period. The students were guided by two teachers. The Simpson's Diversity Index (D), developed by Simpson (1949) was also assessed for flora and butterflies.

3.4. RESULTS & DISCUSSION

A group of students were assigned with the audit and specific areas were surveyed them and the flora, fauna, butterflies, odonates of the campus were identified. The data was recorded in tabular sheets:

Sl. No.	Scientific name	Malayalam name	English Name	No.
1.	<i>Artocarpus heterophyllus</i>	പ്ലാവ്	JACKFRUIT TREE	12
2.	<i>Mangifera indica</i>	മാവ്	MANGO	9
3.	<i>Saracaasoca</i>	അശോകം	ASHOKA TREE	1
4.	<i>Mimusposelengi</i>	ഇലഞ്ഞി	BULLET WOOD	2
5.	<i>Tectona grandis</i>	തേക്ക്	TEAK	84
6.	<i>Cocos nucifera</i>	കൊങ്ങി	COCONUT TREE	21
7.	<i>Artocarpus hirsutus</i>	ആഞ്ഞിലി	WILD JACK	7
8.	<i>Delonix regia</i>	ഗുൽമോഹർ	ROYAL PRINCIANA	4
9.	<i>Swietenia macrophylla</i>	മഹാഗണി	MAHAGONY	38
10.	<i>Annona muricata</i>	മുളുണ്ട	SOURSOP TREE	7
11.	<i>Cassia fistula</i>	കണ്ടിപ്പൊന്ന	GOLDEN SHOWER TREE	8
12.	<i>Psidium guajava</i>	ഗോവ	GUAVA TREE	10
13.	<i>Nephelium lappaceum</i>	റാബുട്ടാൻ	RAMBUTAN	3
14.	<i>Peltophorum pterocarpum</i>	മഞ്ഞുവടക	COPPER POD	3
15.	<i>Polyathia longifolia</i>	അർണമരം	FALSE ASHOKA	6
16.	<i>Casuarina equisetifolia</i>	ചുറ്റി	CATURINA	1
17.	<i>Palmaceae</i>	അലങ്കാര പന	ORNAMENTAL PALM	10
18.	<i>Pimenta dioica</i>	സർവ്വസ്വസ്വ	ALL SPICE	1
19.	<i>Lagerstroemia speciosa</i>	മണിക്കൂൽ	PRIDE OF INDIA	2
20.	<i>Caruca papaya</i>	പപ്പായ	PAPAYA	2
21.	<i>Cinnamum verum</i>	വഴന	BAY LEAF	1
22.	<i>Albizia julibrissin</i>	പുവടക	PERSIAN SILK TREE	1
23.	<i>Araucaria heterophylla</i>	കരകറിയ	ARAUCARIA	1
24.	<i>Palmaceae</i>	അലങ്കാര പന	HYOPHORBE	1
25.	<i>Ficus exasperata</i>	തടവര	SAND PAPER TREE	1

Table 7. Floral Diversity of St Thomas College Campus

The Simpson's Diversity Index (D) is 0.8 in the case of trees and this is a very low level of diversity.



Sl. No.	Scientific name	Malayalam name	English Name	No.
1.	<i>Graphium tereon</i>	നീലകുടുക	COMMON BLUE BOTTLE	1
2.	<i>Ypthima huebneri</i>	നാലിടലി	COMMON FOUR-RING	10
3.	<i>Danaus chrysippus</i>	പുരുഷോത്തമൻ	PLAIN TIGER	1
4.	<i>Junonia iphita</i>	കരിയില ശലഭം	CHOCOLATE PANSY	5
5.	<i>Mycalesis perseus</i>	തവിടൻ	COMMON BUSHBROWN	10
6.	<i>Papilio polytes</i>	നരകക്കളി	COMMON MORMON	1
7.	<i>Eurema hecabe</i>	മഞ്ഞപൊത്തി	COMMON GRASS YELLOW	12
8.	<i>Ariadne merione</i>	ആവണചെപ്പൻ	COMMON CASTOR	8
9.	<i>Danaus genutia</i>	വരയാൻ കുടും	STRIPED TIGER	1
10.	<i>Hypolimnas bolina</i>	വൻചെട്ടശലഭം	GREAT EGG FLY	3
11.	<i>Phalanta phalantha</i>	പുലിത്തൊട്ടൻ	COMMON LEOPARD	3
12.	<i>Hypolimnas misippus</i>	ചെട്ടശലഭം	DANAID EGG FLY	2
13.	<i>Acraea terpsicore</i>	തീച്ചിറക്കൻ	TAWNY COASTER	1
14.	<i>Melanitis leda</i>	കരിയില ശലഭം	COMMON EVENING BROWN	7
15.	<i>Catopsilia pyranthe</i>	തകരമുത്തൻ	MOTTLED EMIGRANT	2
16.	<i>Papilio polymnestor</i>	കൃഷ്ണശലഭം	BLUE MORMON	1
17.	<i>Pachliopta aristolochiae</i>	നടു മരം	COMMON ROSE	1
18.	<i>Parerona hippia</i>	നാടോടി	COMMON WANDERER	1
19.	<i>Catopsilia pomona</i>	മഞ്ഞതകരമുത്തൻ	COMMON EMIGRANT	4
20.	<i>Leptosia nina</i>	പൊട്ടു വെള്ളാട്ടി	PSYCHE	5
21.	<i>Delias eucharis</i>	വീരസനി	COMMON JEZEBEL	1
22.	<i>Papilio clytia</i>	വഴനകുമ്മം	COMMON MIME	3

Table 8. Butterfly Diversity of St Thomas College Campus

The Simpson's Diversity Index (D) is 0.9 in the case of trees and this is a extremely low level of diversity

Sl. No.	Scientific name	Malayalam name	English Name
1	<i>Trithemis festiva</i>	കാർത്തുനി	BLACK STREAM GLIDER
2	<i>Orthetrum pruinsum</i>	പവിഴവലൻ വൃംഗി	CRIMSON TAILED MARSH HAWK
3	<i>Libellago indica</i>	തവളക്കണ്ണൻ	SOUTHERN HELIODAR

Table 9. Odonate Diversity of St Thomas College Campus

Sl. No.	Scientific name	Malayalam name	English Name
1	<i>Corvus splendens</i>	പേനക്കൊക്ക	HOUSE CROW
2	<i>Ocyrcos griseus</i>	കോഴി വേഴാമ്പൽ	MALABAR HORNBILL
3	<i>Corvus macrorhynchos</i>	ബാലികൊക്ക	LARGE BILLED CROW
4	<i>Dicaeum erythrorhynchos</i>	ഇത്തക്കണ്ണികുരുവി	PALE BILLED FLOWER PECKER
5	<i>Psilopogon viridis</i>	ചിന്നകുട്ടുവരൻ	WHITE CHEEKED BARBET

Table 10. Faunal Diversity of St Thomas College Campus



The above data shows the different species identified in the campus during the auditing. The Floral diversity of the campus is moderate and 25 species of trees were identified. Trees like Teak, Mahagony, Coconut tree are more in numbers. The faunal and odonate diversity in the campus is comparatively less with a number 5 and 3 species respectively in both categories. The list of both are incomplete, it may be due to lack of proper field survey, so it is not significant to calculate the odonate diversity of the area. Butterfly shows a good number in the campus with 22 species identified. A planned effort to make green the nook and corners of the campus will definitely improve the diversity at all levels.



Fig. 2. Biodiversity Field Survey Training



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