BMC REPORT 2021-22

ST. TERESA'S COLLEGE (AUTONOMOUS), ERNAKULAM

REPORT OF ACTIVITIES: 2021-22

INTRODUCTION

Bhoomitrasena Club in the college (Code No: 107/EKM/05/10), formed with support from Directorate of Environment and Climate Change, Government of Kerala, aims at grooming environmentally conscious and socially responsive young women who will value the bounties of nature and strive to preserve them.

The green activities of the college have also won many accolades. The awards and recognitions received are as follows:

- Best Bhoomitrasena Club award amongst the colleges in Central Kerala for the year 2020-21 from the Department of Environment and Climate Change, Government of Kerala.
- Paristhithi Mithra Award - 2021 instituted by CEERD, St. Stephen's College, Uzhavoor.
- Second Place winner for the Paristhithi Mithra Award - 2020 instituted by CEERD, St. Stephen's College, Uzhavoor.
- Global Environment Project Award instituted by World Malayalee Council in 2018.
- Best Bhoomitrasena Club award amongst the colleges in Central Kerala for the year 2016 - 17 from the Department of Environment and Climate Change, Government of Kerala.
- Suchitwa Haritha award instituted by Mithradam and Rajagiri , Rajagiri College of Social Sciences, Sahrudaya Services and Charities and Cochin Shipyard in 2015-16.
- Paristhithi Mithra award instituted by CEERD, St. Stephen's College, Uzhavoor in 2016.
- Second Best Bhoomitrasena Club in Central Kerala from the Department of Environment and Climate Change, Govt of Kerala in 2012.

Over the years, BMC has contributed to being the custodians of be it, environmental protection, waste management or water conservation. Since its inception, the club has strived towards achieving its goals, apparent from the successful execution of its many projects. From the PK3 Project, Threads of Change Upcycling Project to Bhoomitra Sena Bags and being brand ambassadors of eco-friendly products, Save Our Future Campaign, the club has poured it's love and devotion to each and every project. The college has had a rich history of promoting eco consciousness with the enactment of the Green Protocol in the campus in 2016.
This report includes a summary of all the activities done throughout the year 2021-22 by the Club.

The overall student leaders for the Bhoomitrasena Club (BMC) for the year 2021-22 are:
1.Caroline Liza (III Bsc. Physics)
2.Alfiya Abdul Salam(II BA. Economics)

The members of the faculty who are in charge of Bhoomithrasena Club:

Over all In-Charge : **Dr. Nirmala Padhmanabhan (Dean of Extension and Incubation)**
Other members are:
1. Dr. Susan Mathew Panakkal – FIC (Mathematics)
2. Ms. Neenu Susan Paul (Mathematics)
3. Dr. Jisha John (English)
4. Ms. Linda Luiz (Sociology)
5. Ms. Tiya K J (Zoology)
6. Ms. Merin Alice George (Botany)
7. Ms. Surya Suresh Kumar (Communicative English) (On Maternity Leave) /Ms. Anaswara (Substitute teacher for Surya)
8. Ms. Felcina D Cruz (Communicative English)
9. Ms. Elizabeth Paul (Computer Applications)
10. Ms. Liya Xavier (Commerce SF)
11. Ms. Namitha N.A. (Commerce SF)

ABOUT THE PROJECTS

1) Teresian Karshakasree Challenge

The Teresian Karshakasree Challenge is a project which comes under the activities of the Bhoomitra sena Club of St. Teresa's College (Autonomous), Ernakulam. The Teresian Karshakasree Challenge is an attempt to engage youngsters in the task of restoring and enriching our degraded ecosystems – both rural and urban – by focusing on organic homestead cultivation. All first year students of St. Teresa's College take part in the university-sponsored MOOC in Organic Farming as the first step.

While felicitating and recognizing this, the Teresian Karshakasree Challenge aims to sustain the interest of these students in organic farming and to identify and acknowledge the students following the best agriculture practices. Thus it seeks to instill the habit of sustainable homestead cultivation deeply in students and motivate them to progress to the next level of becoming Green Ambassadors in their respective localities by continuing ecosystem restoration activities through the remaining two years of their undergraduate life. This is in consonance with the UNEP's call for 2021-2030 to be recognized as the Decade of Ecosystem Restoration. Students who exhibit sustained efforts towards this aim will be recognized with the title of 'Teresian Karshakasree' at the end of their third year by St. Teresa's College in collaboration with the Ernakulam District Haritha Keralam Mission.

Faculty In-Charge:
1.Ms. Linda Luiz (Sociology)
2..Ms. Tiya K J (Zoology)
3. Ms. Merin alice George (Botany)
The student leaders are:
1.Anagha R . (II DC Botany)
2. Niveditha (III DC Chemistry)
Student coordinators from each department aid in mentoring and monitoring the progress of the project.

2) UNEP (United Nations Environment Programme) wing

The UNEP wing of BMC club regularly checks and monitors the activities of UNEP and explore tvarious activities that can be done by the Bhoomitra Sena Club. It was because of their efforts that

- a documentary on the plastic reduction activities of the college was exhibited at th**e South Indian Conclave on Awareness against Single Use plastics** July 27, 2021 organised by **MoEF, Govt. of India and UNEP** and Dr. Nirmala Padmanabhan, Dean of Extension and Incubation, was an invited speaker for the conclave.

- Our College was recognised as a **participant stakeholder of the United Nations Environment Programme (UNEP).** We are among the 26 Universities/ Colleges to be selected from all over India.

Faculty In-Charge
1. Dr. Jisha John
(Department of English)
2. Ms. Felcina D'Cruz
Department of Communucative English

Student Leaders:
1.Anna Nicholas (II B.Com Capital Market)
2.Krithi Jignesh Shah (II B.Com Capital Market)
3. Hanna Ann Mathew (3rd B.Com taxation SF)

3) Kochi Eco-Challenge

The Kochi Eco Challenge is an initiative of BMC along with C-HED the environmental division of Kochi Municipal Corporation that envisioned in line with the Ecosystem Restoration theme set forth by United Nations, was launched on June 5 2021. It aimed to give voice to youth in various educational institutions to identify eco-system challenges in Kochi and suggest scientific and feasible solutions to address the same. Feasible award winning projects will be included in Corporation's annual budget for implementation.
Faculty In-charge
1. Susan Mathew Panakkal (Mathematics)
2. Neenu Susan Paul (Mathematics)

Student Leaders
1.Suvarna Lakshmi S Rao (II B.Com (SF))
2.Aleena P Johnson (III DC Mathematics)

4) Plastic Reduction Team

Focusing on sustainable development and spreading awareness about the harms of plastic and plastic waste. The plastic reduction team of Bhoomitrasena Club aims for a healthier tomorrow. The team has got four active challenges:

a) Carry Bag Challenge
b) Sustainable Menstruation
c) Sustainable Childcare
d) Dabba Challenge

Faculty In-charge
1 Ms. Neenu Susan Paul - Mathematics
2 Dr. Jisha John- English
3 Ms. Linda Luiz- Sociology
4 Ms. Elizabeth Paul- Computer Applications
5 Ms. Liya Xavier- Commerce SF
6 Ms. Namitha N A -Commerce SF

Student leaders :
1.Priya Soly II B.A Economics
2.Rosna Johnson II B.A Economics

5) Social Media Team

A team of graphic designers and content curators who work on social media posts on the activities of BMC club and spreading awareness on issues related to conservation and protection of environment. The social media team spreads the green message to the online community.

Faculty Incharge:
1.Surya Suresh Kumar / Anaswara(Communicative English)
2.Felcina D'Cruz (Communicative English)

Student Leaders:
1.Hanna Ann Mathew (III B.Com (SF))
2.Hywin Rose Thomas (II B.A Communicative English)
3.Suvarna Lakshmi S Rao (II B.Com (SF))

6) Reporting Team

A group of exceptional writers who draft the reports of BMC are included in the media reporting team.Students with excellent handle with words can apply to be part of this team.
Faculty In-charge
1 Ms. Surya Suresh Kumar (Communicative English)
2 Dr. Susan Mathew Panakkal. (Mathematics)

Student Leaders:
1. Diya Rasheed (II B.A Communicative English)
2. Rosna Johnson (II B.A Economics)

KOCHI ECO CHALLENGE

- Name of the program conducted: **Inauguration of Kochi Eco Challenge**
- Date :**04/06/2021**
- Chief Guest : **Mayor of Kochi Municipal Corporation, Adv. M. Anil Kumar.**
- Any other guests/ speakers

  Film artist Mr. Indrajith Sukumaran, Mrs. Poornima Indrajith; Deputy Mayor of Kochi Municipal Corporation, Mrs. K. S. Ansiya; Chairman and Chairperson of Kochi Municipal Corporation; faculty members of S.H College ,Thevera ,St:Albert's College and Maharaja's College; AEO's of Ernakulam and Mattancherry.

- Brief summary of what the program was about in TWO sentences
  Kochi Eco-Challenge Project is an initiative of BMC of St. Teresa's College and C- Head of the Environmental Division Kochi Municipal Corporation which in accordance with the World Environment Day 2021. Kochi Municipal Corporation launched the project in collaboration with the Haritha Keralam Mission and Suchitwa Mission. The project aims at the restoration of local ecosystem through collective action of the youth and to encourage the present scenario of the environment by inspiring, informing and enabling the people to improve their quality of life without compromising the future generations.

- Beneficiaries and number of beneficiaries (number to be included if available or relevant)
  The students and the faculty members of St. Teresa's College, Ernakulam were the participants for the event and there were a total of 64 participants. The program provided an insight and environmental awareness among the students.

- Any relevant or interesting quotation from the speaker or audience that throws further light on the program
  The Honourable chief guest concluded his speech stating that this project would hopefully result in compliance and environmental awareness among the students.


കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷൻ
'കൊച്ചി ഇക്കോ ചാലഞ്ച്'
2021 ലെ ലോക പരിസ്ഥിതി ദിനാചരണത്തോടനുബന്ധിച്ച് കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷന്റെ ആഭിമുഖ്യത്തിൽ എറണാകുളം സെന്റ് തെരേസാസ് കോളജിന്റേയും കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷന്റെ പരിസ്ഥിതി വിഭാഗമായ സി-ഹെഡിന്റേയും നേതൃത്വത്തിൽ ഹരിത കേരള മിഷന്റേയും ശുചിത്വ മിഷന്റേയും സഹകരണത്തോടേ 'കൊച്ചി ഇക്കോ ചാലഞ്ച്' (കൊച്ചി ഇക്കോ സിസ്റ്റം റിസ്റ്റോറേഷൻ ചാലഞ്ച്) എന്ന പദ്ധതിക്ക് തുടക്കം കുറിക്കുന്നു. കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷൻ പരിധിയിലെ വിവിധ പ്രദേശങ്ങളിലെ ആവാസ വ്യവസ്ഥയെ അടയാളപ്പെടുത്തി അതിന്റെ പുനസ്ഥാപനത്തിനും സംരക്ഷണത്തിനും വേണ്ടിയുള്ള മാർഗ്ഗ നിർദ്ദേശങ്ങളും തുടർപ്രവർത്തന പദ്ധതികളും ആവിഷ്ക്കരിച്ചുകൊണ്ട് ശാസ്ത്രീയമായ പദ്ധതി രേഖ തയ്യാറാക്കി സമർപ്പിക്കുന്ന ഒരു പദ്ധതിയായാണ് ' കൊച്ചി ഇക്കോ ചാലഞ്ച്' വിഭാവനം ചെയ്തിരിക്കുന്നത്.
ഐക്യ രാഷ്ട്ര സഭയുടെ 2021 ലെ പരിസ്ഥിതി ദിനാചരണ തീം 'ഇക്കോ സിസ്റ്റം റിസ്റ്റോറേഷൻ' എന്നതാണ്. ഈ ആശയവുമായി ചേർന്നു നിൽക്കുന്ന രീതിയിലാണ് 'കൊച്ചി ഇക്കോ ചാലഞ്ച്' പദ്ധതി വിഭാവനം ചെയ്തിട്ടുള്ളത്. കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷൻ പരിധിയിൽപെടുന്ന എല്ലാ വിദ്യാഭ്യാസ സ്ഥാപനങ്ങൾക്കും വിദ്യാർത്ഥി ടീമുകൾക്കും ഈ ചാലഞ്ചിൻ പങ്കെടുക്കാം. മത്സര എൻട്രികളിൽ നിന്നും തിരഞ്ഞെടുക്കുന്ന മികച്ചതും പ്രായോഗികവുമായ പ്രൊപ്പൊസലുകൾക്ക് ക്യാഷ് അവാർഡുകൾ നൽകുന്നതാണ്. സ്കൂളുകൾ/കോളേജ് തലത്തിലുള്ള എൻട്രികൾ പ്രത്യേക വിഭാഗമായി പരിഗണിക്കും. തിരഞ്ഞെടുക്കപെട്ട പ്രോജക്ടുകൾ കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷന്റെ വാർഷിക ബജറ്റിൽ ഉൾപ്പെടുത്തുകയും പ്രായോഗികമാക്കുകയും ചെയ്യും. 2021 സെപ്റ്റംബർ ഒന്നിന് മുമ്പ് പ്രൊപ്പൊസലുകൾ സമർപ്പിക്കേണ്ടതാണ്. കൂടുതൽ വിവരങ്ങൾക്കായി www.c-hed.org വെബ്സൈറ്റ് സന്ദർശിക്കുക.
ഈ വിഷയവുമായി ബന്ധപ്പെട്ട് ബന്ധപ്പെടേണ്ട നമ്പറുകൾ:
അശ്വതി മുരളി, എൻവയോൺമെന്റ് എഞ്ചിനീയർ, സി-ഹെഡ് - 88916 89300
ഡോ. നിർമ്മല പത്മനാഭൻ - 98950 37200
ഡോ. സൂസൻ - 98479 77274
'കൊച്ചി ഇക്കോ ചാലഞ്ച്' പദ്ധതിയുടെ വിജയകരമായ നടത്തിപ്പിന് എല്ലാവരുടേയും പൂർണ്ണ പിന്തുണയും പങ്കാളിത്തവും അഭ്യർത്ഥിക്കുന്നു.
സിസ്റ്റർ വിനീത
ഡയറക്ടർ
സെന്റ്. തെരേസാസ് കോളേജ്
എറണാകുളം
അഡ്വ. എം. അനിൽ കുമാർ
മേയർ


LET'S ALL WORK TOGETHER AND STRIVE HARD FOR THE SUCCESS OF THIS ECO PROJECT


THE PROJECT INVOLVES STUDENT GROUPS TO PREPARE A REPORT ON SENSITIVE HABITATS IN KOCHI AND DESIGN A SOLUTION FOR ITS CONSERVATION. THE PROJECT IS THEN VALIDATED BY EXPERTS AND SUBMITTED TO THE MAYOR FOR JUDGEMENT.
THE PROGRAM WAS CONDUCTED ON THE ONLINE PLATFORM OF GOOGLE MEET WITH ALMOST 64 PARTICIPANTS.


'KOCHI ECOSYSTEM CHALLENGE', THE LATEST INITIATIVE OF KOCHI MUNCIPAL CORPORATION, WAS OFFICIALLY LAUNCHED ON 4TH JUNE 2021 IN COLLABORATION WITH HARITHA KERALAM MISSION AND SUCHITWA MISSION, IN ASSOCIATION WITH ST TERESA'S COLLEGE, ERNAKULAM.
KOCHI MUNICIPAL
Maxlin
Anu
You
Directo
62 others

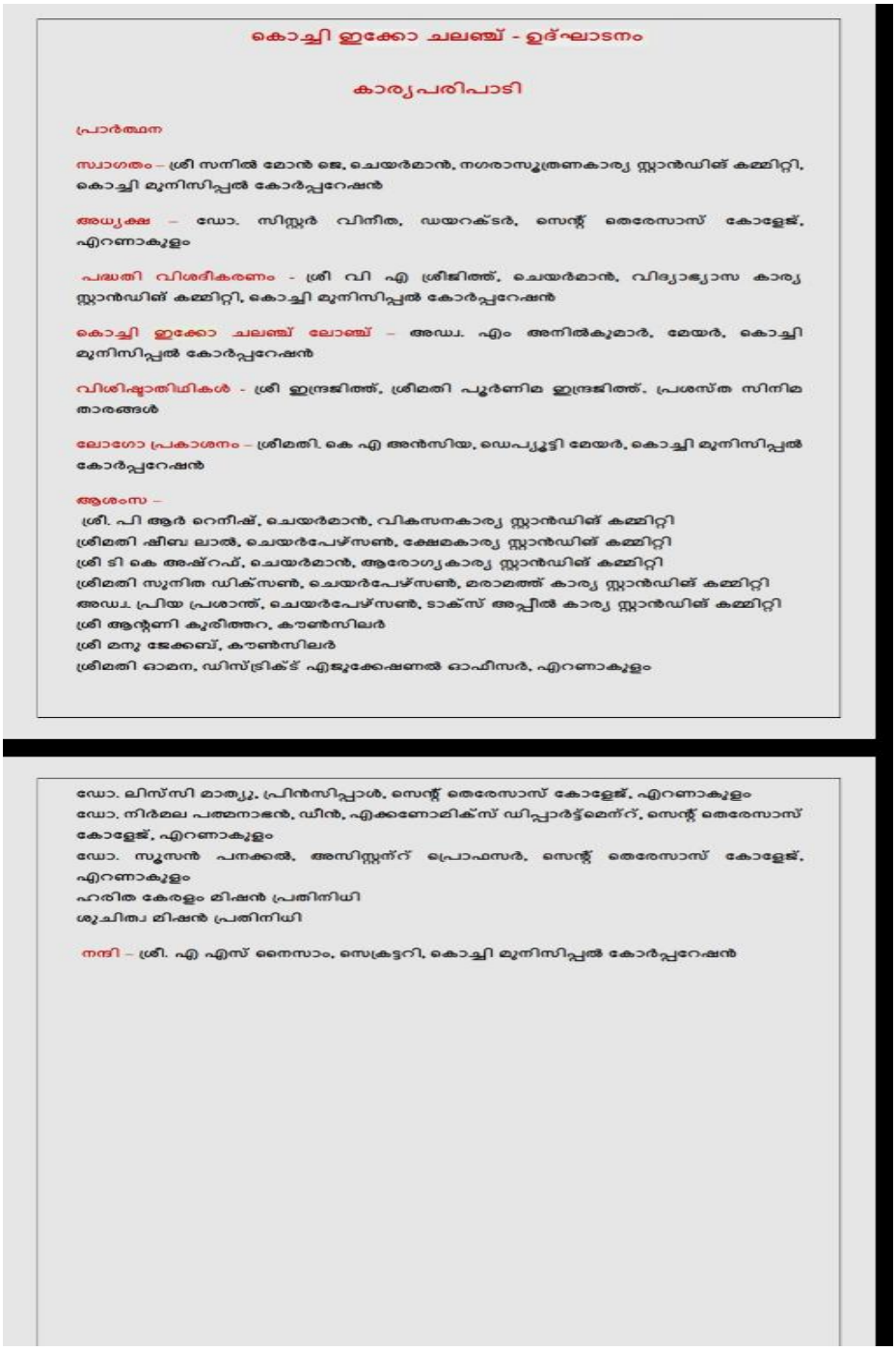

Anilkumar
Director
Anu
N
NANDINI N
K
KOCHI MUNICIPAL
Anna Treesa
You
V
vinitha
58 others

4/6/21 MALAYALA MANO

ഇക്കോ ചാലഞ്ച് പദ്ധതിയുമായി കൊച്ചി നഗരസഭ

കൊച്ചി● ലോക പരിസ്ഥിതി ദിനാചരണത്തോടനുബന്ധിച്ച് കൊച്ചി കോർപറേഷൻ കൊച്ചി ഇക്കോ ചാലഞ്ച് പദ്ധതി ആരംഭിക്കുന്നു. സെന്റ് തെരേസാസ് കോളജ്, കൊച്ചി കോർപറേഷന്റെ പരിസ്ഥിതി വിഭാഗമായ സി-ഹെഡ്, ഹരിത കേരള മിഷൻ, ശുചിത്വ മിഷൻ എന്നിവയുടെ സഹകരണത്തോടെയാണു പദ്ധതി.

കോർപറേഷൻ പരിധിയിലെ ആവാസവ്യവസ്ഥ അടയാളപ്പെടുത്തി പുനഃസ്ഥാപനത്തിനും സംരക്ഷണത്തിനും ശാസ്ത്രീയ പദ്ധതി രേഖ തയാറാക്കി സമർപ്പിക്കുന്നതാണു പദ്ധതി. സിനിമാതാരങ്ങളായ ഇന്ദ്രജിത്ത്, പൂർണിമ ഇന്ദ്രജിത്ത് എന്നിവരാണു പദ്ധതിയുടെ ബ്രാൻഡ് അംബാസഡർമാർ. കോർപറേഷൻ പരിധിയിലെ എല്ലാ വിദ്യാഭ്യാസ സ്ഥാപനങ്ങൾക്കും വിദ്യാർഥി ടീമുകൾക്കും പങ്കെടുക്കാം. വെബ്സൈറ്റ്: www.c-hed.org. 88916 89300



കൊച്ചി ഇക്കോ ചലഞ്ച് - ഉദ്ഘാടനം

കാര്യപരിപാടി

പ്രാർത്ഥന

സ്വാഗതം – ശ്രീ സനിൽ മോൻ ജെ, ചെയർമാൻ, നഗരാസൂത്രണകാര്യ സ്റ്റാൻഡിങ് കമ്മിറ്റി, കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷൻ

അധ്യക്ഷ – ഡോ. സിസ്റ്റർ വിനീത, ഡയറക്ടർ, സെന്റ് തെരേസാസ് കോളേജ്, എറണാകുളം

പദ്ധതി വിശദീകരണം - ശ്രീ വി എ ശ്രീജിത്ത്, ചെയർമാൻ, വിദ്യാഭ്യാസ കാര്യ സ്റ്റാൻഡിങ് കമ്മിറ്റി, കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷൻ

കൊച്ചി ഇക്കോ ചലഞ്ച് ലോഞ്ച് – അഡ്വ. എം അനിൽകുമാർ, മേയർ, കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷൻ

വിശിഷ്ടാതിഥികൾ - ശ്രീ ഇന്ദ്രജിത്ത്, ശ്രീമതി പൂർണിമ ഇന്ദ്രജിത്ത്, പ്രശസ്ത സിനിമ താരങ്ങൾ

ലോഗോ പ്രകാശനം – ശ്രീമതി. കെ എ അൻസിയ, ഡെപ്യൂട്ടി മേയർ, കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷൻ

ആശംസ –
ശ്രീ. പി ആർ റെനീഷ്, ചെയർമാൻ, വികസനകാര്യ സ്റ്റാൻഡിങ് കമ്മിറ്റി
ശ്രീമതി ഷിബ ലാൽ, ചെയർപേഴ്സൺ, ക്ഷേമകാര്യ സ്റ്റാൻഡിങ് കമ്മിറ്റി
ശ്രീ ടി കെ അഷ്റഫ്, ചെയർമാൻ, ആരോഗ്യകാര്യ സ്റ്റാൻഡിങ് കമ്മിറ്റി
ശ്രീമതി സുനിത ഡിക്സൺ, ചെയർപേഴ്സൺ, മരാമത്ത് കാര്യ സ്റ്റാൻഡിങ് കമ്മിറ്റി
അഡ്വ. പ്രിയ പ്രശാന്ത്, ചെയർപേഴ്സൺ, ടാക്സ് അപ്പീൽ കാര്യ സ്റ്റാൻഡിങ് കമ്മിറ്റി
ശ്രീ ആന്റണി കുരിത്തറ, കൗൺസിലർ
ശ്രീ മനു ജേക്കബ്, കൗൺസിലർ
ശ്രീമതി ഓമന, ഡിസ്ട്രിക്ട് എജ്യുക്കേഷണൽ ഓഫീസർ, എറണാകുളം

ഡോ. ലിസ്സി മാത്യു, പ്രിൻസിപ്പാൾ, സെന്റ് തെരേസാസ് കോളേജ്, എറണാകുളം
ഡോ. നിർമല പത്മനാഭൻ, ഡീൻ, എക്കണോമിക്സ് ഡിപ്പാർട്ട്മെന്റ്, സെന്റ് തെരേസാസ് കോളേജ്, എറണാകുളം
ഡോ. സൂസൻ പനക്കൽ, അസിസ്റ്റന്റ് പ്രൊഫസർ, സെന്റ് തെരേസാസ് കോളേജ്, എറണാകുളം
ഹരിത കേരളം മിഷൻ പ്രതിനിധി
ശുചിത്വ മിഷൻ പ്രതിനിധി

നന്ദി – ശ്രീ. എ എസ് നൈസാം, സെക്രട്ടറി, കൊച്ചി മുനിസിപ്പൽ കോർപ്പറേഷൻ

CHECK OUT:https://twitter.com/c_hedcochin/status/1422874536752476165?s=19

https://www.facebook.com/111150047220593O/posts/4262639763758636/?sfnsn=wiwspwa

https://www.newindianexpress.com/cities/kochi/2021/jun/05/indrajith-poornima-brand-ambassadors-of-corps-kochi-eco-challenge-2311966.html

https://m.timesofindia.com/city/kochi/corp-to-work-with-students-for-eco-conservation/amp_articleshow/83214211.cms

WORLD ENVIRONMENT DAY CELEBRATIONS- JUNE 5, 2021
&
LAUNCH OF TERESIAN KARSHAKASREE CHALLENGE

- Date : **05/06/2021**

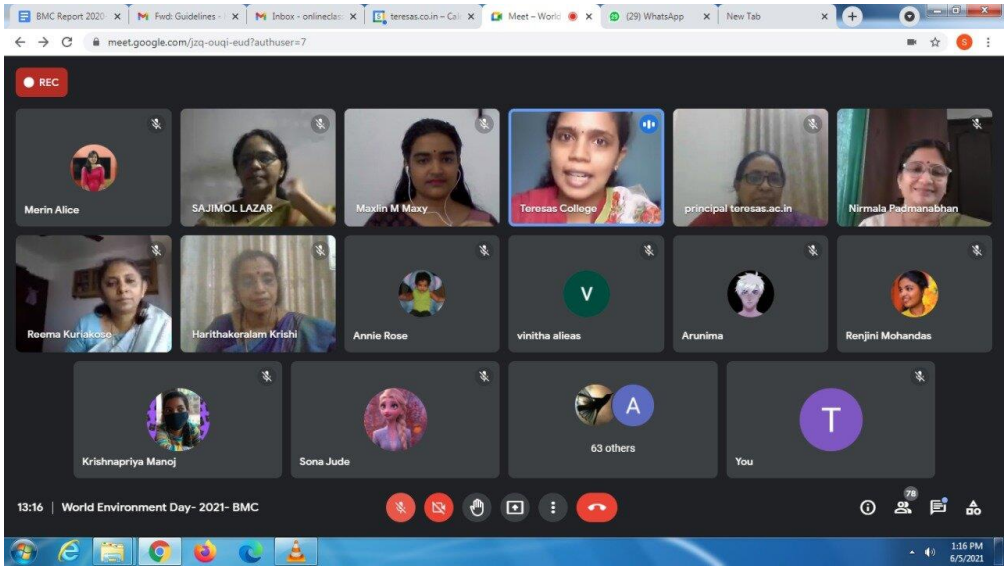
- Chief guest/speaker
  Mrs. Haripriya Devi, Technical Officer, Agriculture Department, Haritha Keralam Mission.
- Any other guests/ speakers (Please avoid naming those who delivered the welcome or vote of thanks)
  Provincial Superior and Manager Rev, Dr. Sr. Vinitha CSST, Principal Dr. Lizzy Mathew, Dr. Sajimol Augustine M. - Senior Administrator, Dr. Nirmala Padmanaban – Dean of Extension and Incubation, Dr. Reema Kuriakose - Controller of Examination and Former MOOC Coordinator, Dr. Susan Mathew Panakkal, then Ms. Anjana. S.
- Brief summary of what the program was about in TWO sentences

  The Teresian Karshakasree Challenge is began with the MOOC programmeof Mahatma Gandhi University for the first year UG students in the academic year 2020-21.The students started their organic gardens during the pandemic. The challenge was launched so as to continue this practice for the next two years and is met with the task of inviting 5 new households near them to take up this challenge and start their own organic gardens to promote ecosystem restoration. Successful candidates will be bestowed with the Teresian Karshaka Sree and Karshaka Deepam titles
- Beneficiaries and number of beneficiaries (number to be included if available or relevant)

  The main aim of this project is to help the youth grow into an environmentally conscious and socially responsive individual who respects the bounty of nature and preserve them, this is also what we wanted the participants of the event to take away from the meeting. The event had 137 participants in Google Meet.
- Any relevant or interesting quotation from the speaker or audience that throws further light on the program

  The meet began with this Cree-Indian proverb “Only when the last tree has been cut down,the last fish been caught and the last stream been poisoned will we realize we cannot eat money”.


St.Teresa's College (Autonomous) Ernakulam
(Re-accredited by NAAC with A++ Grade)
Bhoomithra Sena Club
In Association with
Department of Botany & Centre for Research
&
Haritha Keralam Mission
is launching their new venture
Teresian Karshakasree Challenge
On 5th June 2021, Saturday -12 pm
Meeting Link :https://meet.google.com/jzq-ouqi-eud
Staff coordinators
BMC and Department of Botany
Program Schedule
Prayer
Welcome Speech
Dr. Lizzy Mathew
Principal, St Teresa's College
Summary of the Activities of BMC 20-21
Dr. Susan Mathew Panakkal
Assistant Professor, Department of Mathematics
Key Note Address
Smt. Haripriya Devi
Technical Officer (Agriculture Department), Haritha Keralam Mission, Trivandrum
An Introduction to Teresian Karshakashree Project
Dr. Nirmala Padmanabhan
Dean, Extention & Outreach, Nodal Officer, IEDC
Digital Album Launch
Rev. Dr. Sr. Vinitha CSST
Provincial Superior & Manager
St. Teresa's College, Ernakulam
Logo Release
Dr. Sajimol Augustine M
Senior Administrator, St.Teresa's College.
Felicitating the Student Leaders of 2020-2021
Ms. Anjana S
Assistant Professor, Department of Commerce (Self)
Vote of Thanks
Smt. Linda Therese Luiz
Assistant Professor, Department of Sociology


meet.google.com/jzq-ouqi-eud?authuser=7
REC
Merin Alice
SAJIMOL LAZAR
Maxlin M Maxy
Teresas College
principal teresas.ac.in
Nirmala Padmanabhan
Reema Kuriakose
Harithakeralam Krishi
Annie Rose
vinitha alieas
Arunima
Renjini Mohandas
Krishnapriya Manoj
Sona Jude
63 others
You
13:16 | World Environment Day- 2021- BMC
1:16 PM
6/5/2021

WE ARE LAUNCHING....

TERESIAN KARSHAKASREE CHALLENGE

Teresian Karshakasree Challenge

Joint Initiative of St Teresa's college And Harithakeralam mission

CHALLENGE FOR SECOND YEAR UG STUDENTS

JOINT INITIATIVE OF HARITHA KERALAM MISSION
BHOOMITHRASENA CLUB
ST. TERESA'S COLLEGE (AUTONOMOUS), ERNAKULAM

OUR ATTRACTIONS

Simple Farming challenges Will be provided

Exciting **Cash awards** to three BEST-PERFORMING Departments

Five of the best YOUNG FARMERS from second year will be acknowledged by the Ernakulam DISTRICT COLLECTOR as **Karshaka deepam**

Best student farmers at the end of third year will be crowned as **Teresian Karshakasree**

Certificates for all students who complete the challenges

For more details

Student coordinators
Niveditha : 6238841158
Anagha R : 8086881408

Staff Coordinators : Ms. Linda Luiz, Ms. Tiya K. J.
Ms. Merin Alice George

INSTAGRAM PAGE LAUNCH

- Name of the program conducted: **Launch of official Instagram page of BMC**

- Date : **03/06/2021**

- Chief guest/speaker **NIL**

- Any other guests/ speakers (Please avoid naming those who delivered the welcome or vote of thanks) **NIL**

- Brief summary of what the program was about in TWO sentences
  The BMC marked the launch of its Instagram page with the posting of the MOOC Digital Albums of all Departments and Pacha Thuruthu project pictures. All posts were accompanied by the tags **#GenerationRestoration, #DhartiKaDil, #ecosystem restoration** to show our support for the World Environment Day.

- Beneficiaries and number of beneficiaries (number to be included if available or relevant)
  To inform and educate Teresians, alumni and the public about the various activities and key projects of the club.

- Any relevant or interesting quotation from the speaker or audience that throws further light on the program
  There were no speakers.

  BHOOMITRASENA CLUB INSTAGRAM PAGE LINK:
  https://instagram.com/stc_bhoomitrasenaclub?utm_medium=copy_link


7:48
stc_bhoomitrasena...
39
Posts
295
Followers
3
Following
Bhoomitra Sena Club
St Teresa's College's environment club
Warriors for the environment
Edit Profile
Suggested for you
See All
Find more people to follow
See All
Karshakasree
Kochi Eco
New
TERESIAN KARSHAKASREE CHALLENGE
Pachathuruthu Project
IMAGINE
EDUCATE
RESTORE

7:48 87%

Posts

stc_bhoomitrasenaclub

ST.TERESA'S COLLEGE (AUTONOMOUS)
Affiliated to Mahatma Gandhi University, Kottayam

1/2

UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION 2021-2030

294 likes

stc_bhoomitrasenaclub Our young leaders mark the beginning of a new era with their powerfu... more

View all 3 comments

3 June · See translation

stc_bhoomitrasenaclub

TIDE TURNER'S PROGRAM

•Name of the program conducted: **Tide Turner's Program**

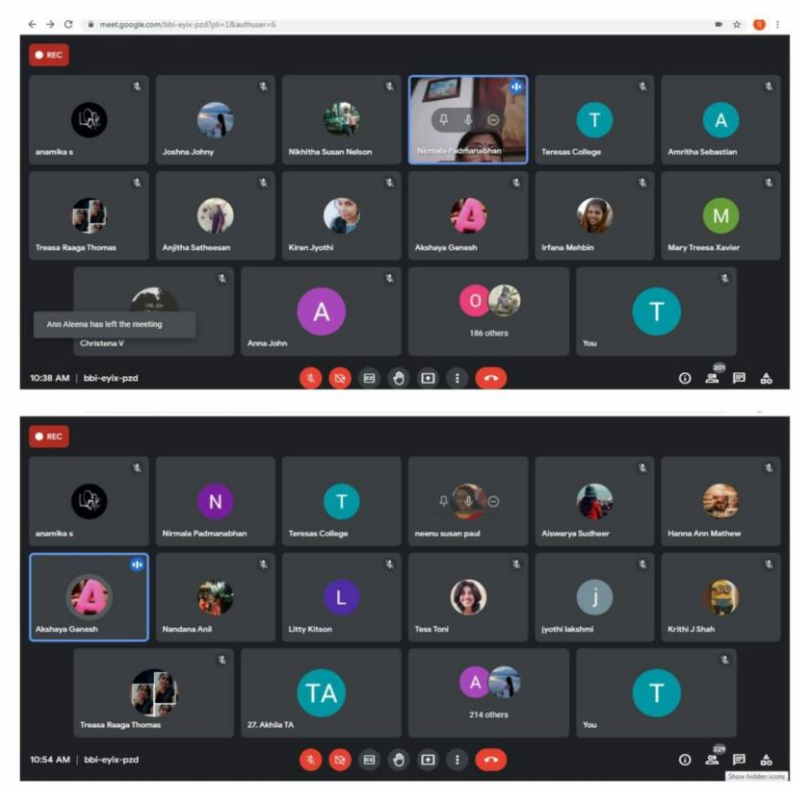
•Date: **18/06/2021**

•Chief Guest/ Speaker
Ms Nirmala Padmanabhan, Dean of Extension and Incubation.

•Brief summary of what the program and its aim
Tide Turner's plastic challenge is a global youth movement to fight against plastic pollution around the world. The challenge is designed to inspire young adults to keep a track on the amount of plastic consumed by the public a day, discover solutions to reduce this consumption and lead change in their homes, communities, institutions and other offices through various projects.

•Beneficiaries and number of beneficiaries
The students of St Teresa's College were the participants for the event and the program motivated the students to maintain a plastic-free life. The event had 229 participants in the Google Meet platform.

•Any relevant or interesting quotation from the speaker or audience that throw further light on the program
An initiative called '**My Plastic Diary**' was introduced to the group where they could keep a track of their weekly usage of plastics.



UNEP- GENERATION RESTORATION YOUTH CHALLENGE

The #GenerationRestoration Youth Challenge is a global call for youth driven solutions, in response to the rapid acceleration of biodiversity loss and impact of climate change. It is part of the UN Decade on Ecosystem Restoration, led by UNEP and FAO, which was launched on World Environment Day 2021.

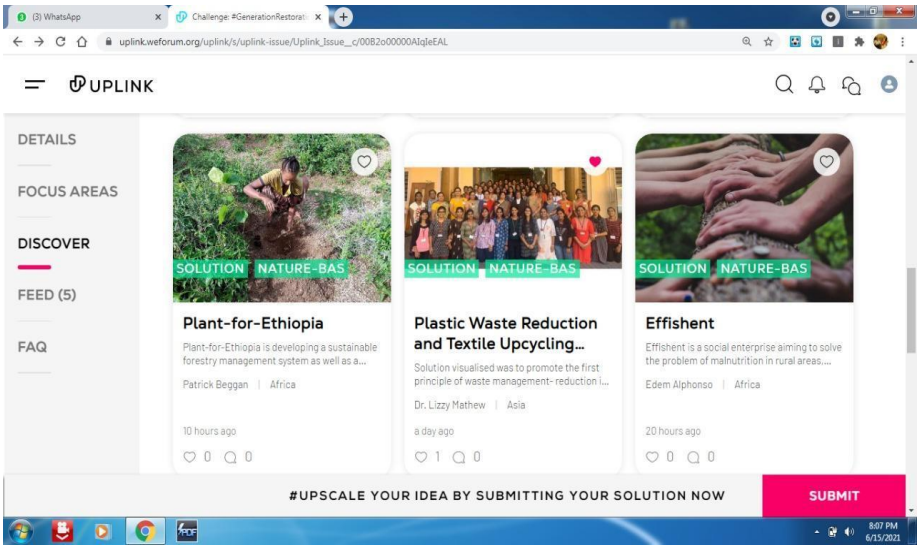
In connection with this challenge, the UNEP team of our college, formulated the Plastic Waste Reduction and Textile Upcycling Initiative and submitted it on June 15th, as a solution to one of the major problems threatening our ecosystem; high plastic usage. It aims to provide an eco-friendly alternative to plastic carry bags and thereby reducing the usage of it. Video tutorials illustrating the making process of these reusable cloth alternatives were uploaded in government sites, training of many Kudumbashree units (self help groups) on how to make it and making these readymade cotton alternatives available in the market are some of the steps taken in this direction.

The solution involves the concerted working of the social entrepreneurship unit of the college, Society of Teresians for Environment Protection (STEP), girls, women's self help groups and concerned Governmentagencies such as Suchitwa Mission, and Haritha Keralam Mission Government of Kerala for better solid wastemanagement in the State.

Some of the major impacts of the programme has been with the sale of the products to prestigious institutions like Tiecon Kerala, the product diversification with a range of products including eco-friendly conference bags, college bags, reusable baby diapers and which has culminated in our initiatives receiving word of praise from the Prime Minister of India on 28th March, 2021.

Over a ten year period, the team aims with this initiative to motivate large segments of the youth in Kerala to adopt sustainable consumption habits.

https://uplink.weforum.org/uplink/s/uplink-contribution/a012o00001pTWv0AAG/plastic-waste-reduction-and-textile-upcycling-initiative



CREATION OF ALBUM OF MOOC PROJECT ON ORGANIC FARMING

The MOOC programme on Organic farming of MG University, the first step to the previously mentioned Teresian Karshakasree Challenge, asked the first year undergraduate students of the academic year 2020-21 to prepare an organic vegetable garden in their backyards to showcase the eco-friendly ways to restore our environment without harming the soil or surroundings. All the students took part in this project to show their commitment to the mission. The pictures of all the departments were posted on the official Instagram Page of BMC on the 3rd of June, 2021.
https://www.instagram.com/p/CPqRwH5sUQA/?utm_medium=copy_link

<u>World Environment Day UNEP Registration</u>

The overall theme of the World Environment Day 2021 was ecosystem restoration. On this day the UNEP launched the UN Decade on Ecosystem Restoration to make peace with nature through the basic acts of growing trees, rewilding gardens and cleaning up rivers. Ecosystem restoration means assisting in the recovery of ecosystems that have been degraded or destroyed, as well as conserving the ecosystems that are still intact.

With regards to this year's World Environment Day, The United Nations Environment Programme launched 1,434 worldwide events for registration. Out of these, the BMC UNEP wing registered for 2 events titled Kochi Ecosystem Challenge and Teresian Karshakasree Challenge.

<u>Kochi Eco Challenge</u>

The main objective of the Kochi Ecosystem Challenge is to inspire, inform and enable societies to improve their quality of life without compromising resources for future

generations. The main aim of the project is to enable restoration of the ecosystem through the collective action and leadership of the youth.

This event was organised with the purpose of providing significant insight into the pressing environmental concerns we face. The project involves student groups to prepare a report on the sensitive habitats in Kochi and design a solution for its conservation. The feasible projects are then included in the Kochi Corporation's annual budget for implementation.

Teresian Karshakasree Challenge

The Teresian Karshakasree Challenge was initiated to bring up sensible environmental practices in students through organic farming for ecosystem restoration. It was launched to bring a sense of eco-awareness in students and to establish non-harmful methods of farming.

This endeavour was set forth to explore the organic and eco-friendly approaches to farming, to enable the students to get back into nature-loving ways and reinvesting back on the earth. It sought to motivate students into becoming Green Ambassadors in their respective localities by carrying on ecosystem restoration activities for the remaining two years of their undergraduate programmes. The MOOC organic farming was the first step initiative of the Teresian Karshakasree Challenge in which all undergraduate first years of the academic year 2020-21 participated.

#GenerationRestoration

With the launch of Un Decade of Ecosystem Restoration, UNEP also encouraged environmental clubs and organisations to tag their social media posts with #GenerationRestoration to mainstream the restoration activities in the community.

The BMC UNEP wing of St. Teresa's College took part in this movement by posting the green initiatives of the club under the hashtag. The efforts of the MOOC Organic Farming Project of the first years of the academic year 2020-21 and the Pachathuruthu project initiated the Dept. of Botany and Zoology were photographically recorded and posted on the official Bhoomithrasena Club Instagram profile after tagging the UNEP, UN India and MOEF&CC and using the #GenerationRestoration.

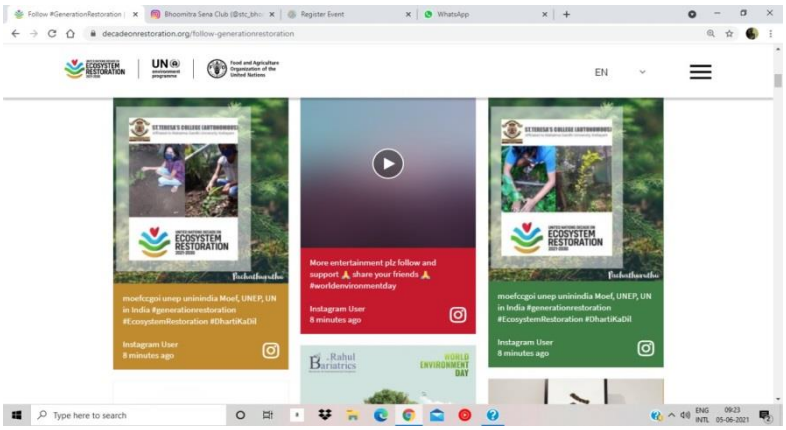
MOOC Project

The MOOC Project, the first step to the previously mentioned Teresian Karshakasree Challenge, asked the first year undergraduate students of the academic year 2020-21 to prepare an organic vegetable garden in their backyards to showcase the eco-friendly ways to restore our environment without harming the soil or surroundings. All the students took part in this project to show their commitment to the mission. The pictures of all the departments were posted on the official Instagram Page of BMC on the 3rd of June with the hashtag.

Pachathuruthu

Pachathuruthu, an umbrella project of the club, aimed at distributing a total of 8000 saplings monitored by the Teresian Tree Mentors to the nature-loving citizens. It was an objective to

preserve the greenery and afforestation of barren lands. The project was consistently monitored and evaluated and has since completed one year. The fruits of this project were posted on the official BMC page on the 5th of June by tagging the UN authorities and also using the required hashtag.



Check out:
https://www.unep.org/events/un-day/world-environment-day-2021

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Organic Farming by Students of Department of Mathematics,
St. Teresa's College (Autonomous), Ernakulam as part of MOOC Organic farmi
Compiled by Bhoomithrasena Club.
2/6
Fathima Diyana
Sravya Deepu
Navya Maria Jomy
Ann Jacob
Arya.K
Ann Mathew
Anakha Rajesh
Meerna Celin M.S
Alinta Roy
Lakshmi Anil
Adhitya A G
Alfina Mary K.S
Anoopa K.M
Maria Joseline
Ashitha Saju
Milisha Maria
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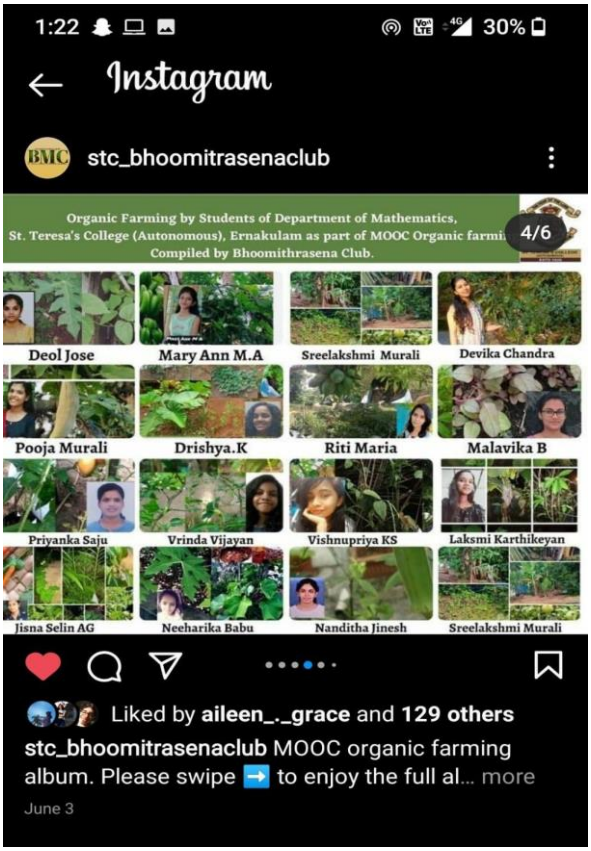
album. Please swipe ➡️ to enjoy the full al... more
June 3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St. Teresa's College (Autonomous), Ernakulam as part of MOOC Organic farmi
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4/6
Deol Jose
Mary Ann M.A
Sreelakshmi Murali
Devika Chandra
Pooja Murali
Drishya.K
Riti Maria
Malavika B
Priyanka Saju
Vrinda Vijayan
Vishnupriya KS
Laksmi Karthikeyan
Jisna Selin AG
Neeharika Babu
Nanditha Jinesh
Sreelakshmi Murali
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June 3


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Organic Farming by Students of Department of Mathematics,
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Compiled by Bhoomithrasena Club.
Megha Sajan
Fathima Shabeer
Elizabeth Joseph
Rinnu Benny
Aswathi E.P
Aleena Rose A.P
Able Antonio George
Anjana V.J
Alna Thomas
Resya R Sunil
Anupama Anilkumar
Angel Mary
Nicole Mary Pillard
Janet Jomy
Mary Andrea Perera
Liked by aileen_._grace and 129 others
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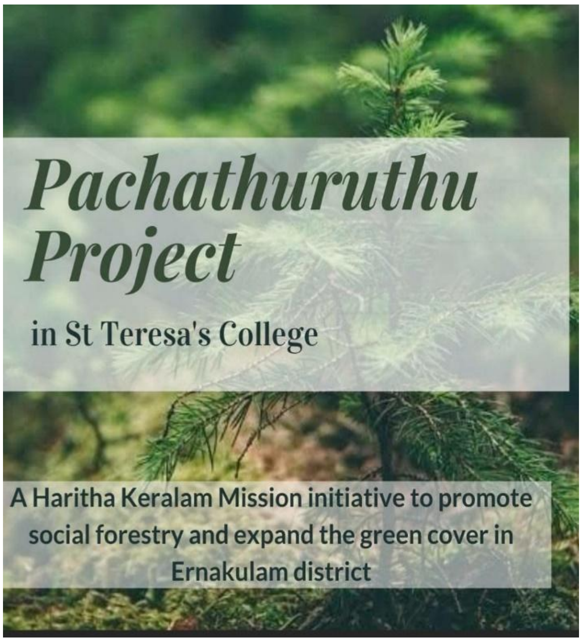
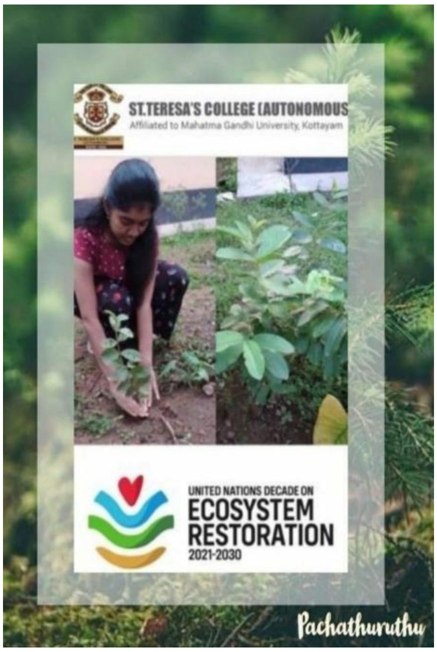
album. Please swipe ➡️ to enjoy the full al... more
June 3

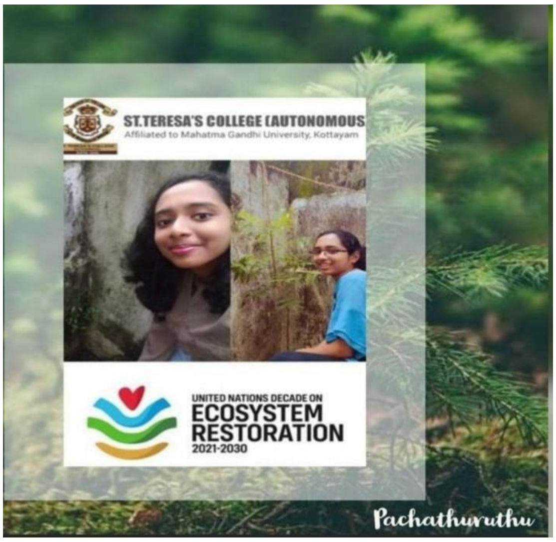
PACHATHURUTH

Pacha Thuruthu, an umbrella project of the club, aimed at distributing a total of 8000 saplings monitored by the Teresian Tree Mentors to the nature-loving citizens. It was an objective to preserve the greenery and afforestation of barren lands. The project was consistently monitored and evaluated and has since completed one year. The fruits of this project were posted on the official BMC page on the 5th of June by tagging the UN authorities.

INSTAGRAM PAGE LINK FOR MORE PHOTOS:
https://www.instagram.com/p/CPuVSTFl5qy/?utm_medium=copy_link







INSTAGRAM PAGE- JUNE ACTIVITIES

- On 21st June 2021, we put out an animated comic strip on the feed along with a video poster which indicated the launching of our environment based quiz program where Prof. Hoo a geeky looking owl was introduced.

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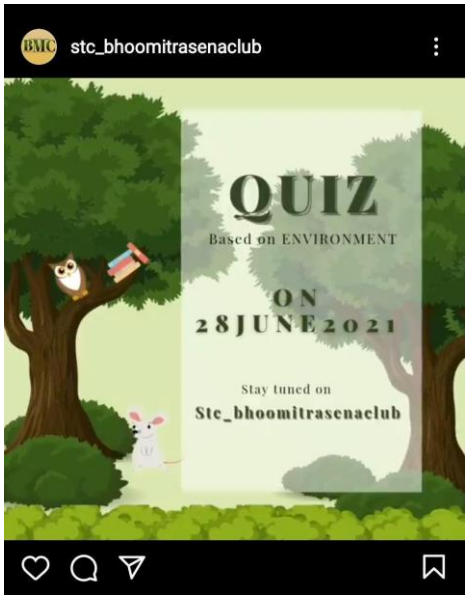
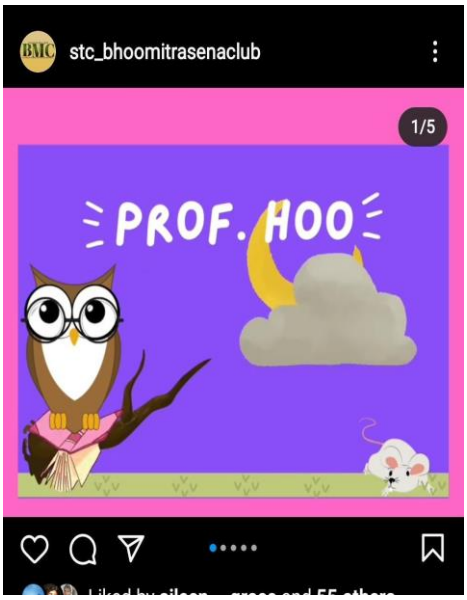
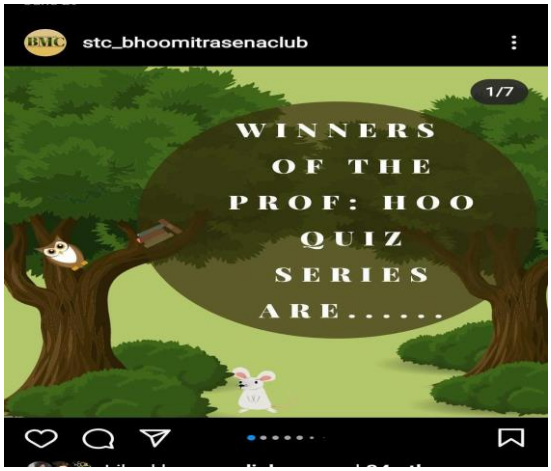




- On 27 June 2021 we launched a timer as a part of the quiz program in a sort of gentle reminder kind of thing.

- On 28 June 2021 we put up the quiz questions from 12pm to 5pm where the questions are put in a suggestion box that Instagram provides. The first five correct answers will be tagged and posted on our feed on the same day by around 8 pm. This is what we have planned for the month of June.

  https://www.instagram.com/p/CQqfuJKFFKx/?utm_medium=copy_link



MEETING- KOCHI ECO CHALLENGE

•NAME OF THE PROGRAM CONDUCTED-Kochi Ecosystem Challenge Project Meeting (Google Meet)

•DATE-27/06/2021

•CHIEF GUEST/ SPEAKER- Dr. Nirmala Padmanabhan

•ANY OTHER GUEST/ SPEAKER-

Mr Nasif (Representative from the Cochin Branch of Global Shapers Community)
Ms Elizabeth (Representative from the Cochin Branch of Global Shapers Community)
Ms Teena (Representative from the Cochin Branch of Global Shapers Community)

•BRIEF SUMMARY ABOUT THE PROGRAM-

The meeting was to give a brief idea on the Kochi Eco Challenge project to the representatives of Global Shapers Community. The program aims at the conservation and preservation of the city's natural ecosystem, to expose the youth to Local Governance and to voice their concerns. In the Challenge, the winning project proposal will be included in the annual budget of the Kochi Municipal Corporation.

•BENEFICIARIES AND THE NUMBER OF BENEFICIARIES-

The representatives of Global Shapers Community, one of the collaborating teams of Kochi Eco challenge project, were the participants for the event. The meeting had 13 participants in the Google Meet platform.

ONLINE MEETING- TERESIAN KARSHAKASREE

•NAME OF THE PROGRAM CONDUCTED-Coordinators Meeting of Teresian Karshakasree Challenge (Google Meet)

DATE- 25/06/2021

CHIEF GUEST/ SPEAKER- Ms.Linda Luiz Ma'am

ANY OTHER GUEST/ SPEAKER-
Tiya Ma'am
Merin Ma'am
Ms Niveditha (Student Coordinator)
Ms Anagha (Student Coordinator)

BRIEF SUMMARY ABOUT THE PROGRAM-
Linda Ma'am gave a brief idea about the project and its main aim, what they are planning on achieving with this project, what are the duties of the student coordinators and about the incentives they provide to motivate the students for active participation in the project.

BENEFICIARIES AND THE NUMBER OF BENEFICIARIES-
The student coordinators of St. Teresa's College along with the staff advisors of Teresian Karshakasree Challenge project were the participants for the meeting. The meeting had 23 participants in the Google Meet platform.

ONLINE MEETING- TIDE TURNERS

•NAME OF THE PROGRAM CONDUCTED-Tide Tuner's Plastic Challenge Meeting (Google Meet)

DATE- 30/06/2021

CHIEF GUEST/ SPEAKER-
Dr. Nirmala Padmanabhan
Ms. Neenu Susan Paul

ANY OTHER GUEST/ SPEAKER-
Priya Soly (Student Coordinator)
Rosna Johnson (Student Coordinator)

BRIEF SUMMARY ABOUT THE PROGRAM-
The meeting was to give a brief idea on the type of projects that could be done under this initiative. As a part of International Plastic Bag Free Day, the team is trying to create awareness about the use of plastic among the students. Also as a long term goal, they are implementing green protocol in our college, creating a green squad, and encouraging green nudges.

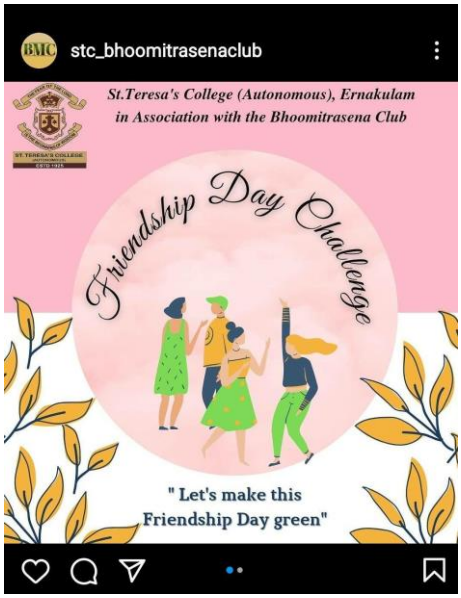
BENEFICIARIES AND THE BENEFICIARIES-
The student coordinators and the members of Tide Turner's Challenge project were the participants for the event. The program had almost 21 participants in the Google Meet platform. The students were given time to express their ideas on how to bring awareness among the youth.

ANY RELEVANT OR INTERESTING QUOTATION FROM THE SPEAKER OR THE AUDIENCE THAT THROW FURTHER LIGHT ON THE PROGRAM-
Ms Nirmala Padmanabhan asked the students to collect information about different plastic cover brands they use daily and to do research on how they can make them eco-friendly.

INSTAGRAM PAGE- JULY ACTIVITIES

- On 6 July 2021 we started a challenge based on the upcoming friendship day on August 1st , this challenge was about friends giving each other eco-friendly gifts for friendship day. It was nice to have some other form of incentive other than getting featured in the page. The time period allotted for this challenge was from 5 July- 30 July.

  https://www.instagram.com/p/CQ-4ppQF306/?utm_medium=copy_link



- On 12 July 2021, we put a post showing all the significant works of the BMC in the feed and media coverage received for these particular projects in the story.

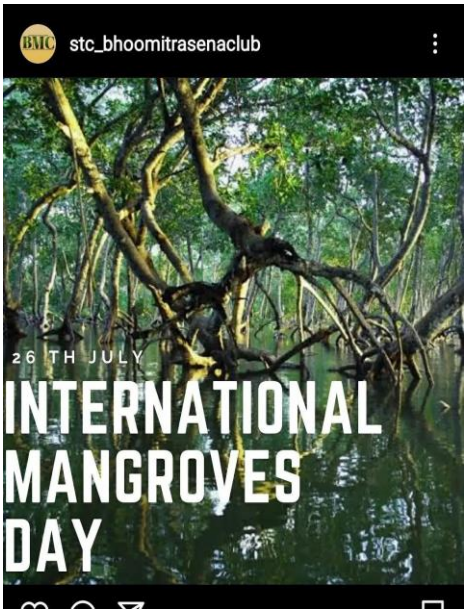
  https://www.instagram.com/p/CROAdQkFSv3/?utm_medium=copy_link

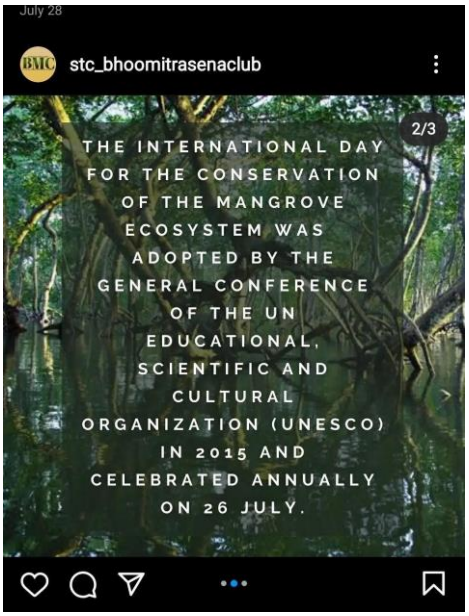
- On 19 July 2021 we launched the first reel of our Instagram page which was about the variety of seeds that can be grown in Kerala.

  https://www.instagram.com/reel/CRgFRarFDei/?utm_medium=copy_link

- On 25 July 2021 we intended to put up a post regarding INTERNATIONAL MANGROVE DAY.

  https://www.instagram.com/p/CRyGo7Ml-BG/?utm_medium=copy_link





- Since it was Van Mahotsav, we planned to post facts related to nature everyday till 7 July 2021.

  https://www.instagram.com/p/CQyTZUEFWK-/?utm_medium=copy_link

- On 26th July 2021, we introduced the second phase of PROF: HOO but this month it was to be subjective in nature with questions like “what is environment conservation to you”, “what is one thing you do that is helping the environment” and questions of the sort to know about their level of knowledge regarding the matter, also all the interesting answers was posted the very next day as a part of the story.

TIDE TURNER'S CHALLENGE- PLEDGE

•Name of the program conducted : Tide Turner's Plastic Challenge- Pledge

•Date : 03/07/2021

•Brief Summary of what the program is and its aim.
Tide Turner's Plastic Challenge is a global youth movement to fight plastic pollution around the world. The Tide Turners group of Bhoomitra Sena Club prepared a Digital Oath against the use of plastics. Two videos were created by the members. It's about promoting environmental conservation by encouraging us all to stay away from the use of plastic bags and to look for eco-friendly alternatives.

•Beneficiaries and the number of beneficiaries.
Students from all departments were asked to take the pledge.

ST.TERESA'S COLLEGE (AUTONOMOUS)
Affiliated to Mahatma Gandhi University, Kottayam
Bhoomithra Sena Club

The Plastic Free Pledge

"I pledge to avoid single-use plastic, to reuse or recycle the plastic that I do use, to educate others about plastic waste, and to do my part in reducing plastic pollution."

Carolina Liza
III B.Sc Physics

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The Plastic Free Pledge

"I pledge to avoid single-use plastic, to reuse or recycle the plastic that I do use, to educate others about plastic waste, and to do my part in reducing plastic pollution."

Alfiya Abdul Salam
II DC Economics

https://www.instagram.com/p/CRYF9xOll0z/?utm_medium=copy_link

SOUTHERN REGIONAL EVENT ORGANIZED BY UN ENVIRONMENT PROGRAMME
BY
FICCI, GOVT OF INDIA, MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE.

NAME OF THE PROGRAM- Awareness campaign on Single Used Plastic

DATE- 27th July 2021

CHIEF GUEST/SPEAKER-

Mr. Pradeep Kumar AB, Ms. Supriya Sahu. IAS, Mr. Navesh Pal Gangwar. IAS

ANY OTHER SPEAKERS/GUEST-

Dr. Ashish Chaturvedi, Mr. Atul Bagai, Ms. Veena Balakrishnan, Ms. Wilma Rodrigues, Ms. Nalini Shekar, Mr. Sanjeev Goel, **Dr. Nirmala Padmanabhan**, Ms. Subhi Dhupar

BRIEF SUMMARY OF WHAT THE PROGRAM IS AND ITS AIM-

St. Teresa's College(Autonomous), Ernakulam participated in the Moef Govt of India and Unep webinar where we were given a chance to show the documentary on our green activities at their South Indian conclave on July 27. The time allotted for us was 10 min. A 3 minutes video was also shown and the rest of the time was given to explain our activities. Ms. Nirmala Padmanabhan presented on behalf of the College.

St. Teresa's College has for the past 6 years been persistently working to address the plastic pollution through various activities such as STEP (Society of Teresian for Environment Protection) works to promote the use of eco- friendly alternatives to plastic rexine products, Training Kudumbashree workers to manufacture eco-friendly alternative, By Changathi Cheppu Project we were able to upcycle tailoring excess into pencil pouch.

BENEFICIARIES AND NUMBER OF BENEFICIARIES-

The students and BMC members of St.Teresa’s College, Ernakulam, Students for other schools and Communities.

YOUTUBE LINK:
https://www.youtube.com/watch?v=1gENOCKQ9Is

SOUTHERN REGIONAL EVENT

JOIN THE CAMPAIGN **BE THE CHANGE...**

SPEAKERS

AWARENESS CAMPAIGN ON

SINGLE USE PLASTICS 2021

Reuse | Reduce | Recycle

Date: 27th July 2021

Time: 9:55 am - 12:00 pm (IST)

Register: https://ficcibike.com/plastic/registration.php

HUMAN RACE CHALLENGE

NAME OF THE PROGRAM- #TheHumanRace Challenge

DATE : Between 16th August, 2021 and 31 August, 2021.

BRIEF SUMMARY OF WHAT THE PROGRAM IS AND ITS AIM

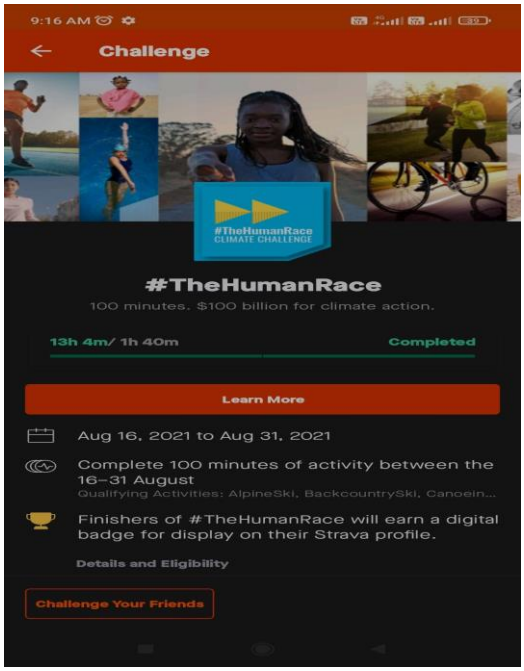
Bhoomitra Sena Club participated in the #***TheHumanRace Challenge*** which is an initiative by the UN, to remind us that climate change is real and to bring focus on vulnerable communities that are relatively more affected by it. On **World Humanitarian Day, 19th August**, this global challenge was undertaken to send our message to the global leaders who will meet at the UN Climate Summit (COP26), in November to accelerate climate action. The challenge entails logging 100 hours of running, riding, swimming or any activity of your choice in the app Strava, between 16 and 31 August.

In response to the challenge, firstly an attractive poster containing the details of the challenge was posted in the official Instagram account of the BMC club and shared in WhatsApp to all the class groups. Along with it, a tutorial on how to use the Strava app was also shared in order for students to participate.

Altogether 21 students from the college participated in the challenge, they stood in solidarity with the people in vulnerable communities who are at the most risk of losing their homes, livelihoods and lives to climate change.

BENEFICIARIES AND NUMBER OF BENEFICIARIES
The students and BMC members of St.Teresa's College, Ernakulam.

https://www.instagram.com/p/CTRWuw_lSrb/?utm_medium=copy_link.
The Instagram post celebrates the successful completion of #TheHumanChallenge by the Bhoomitra Sena Club of St.Teresa's College.



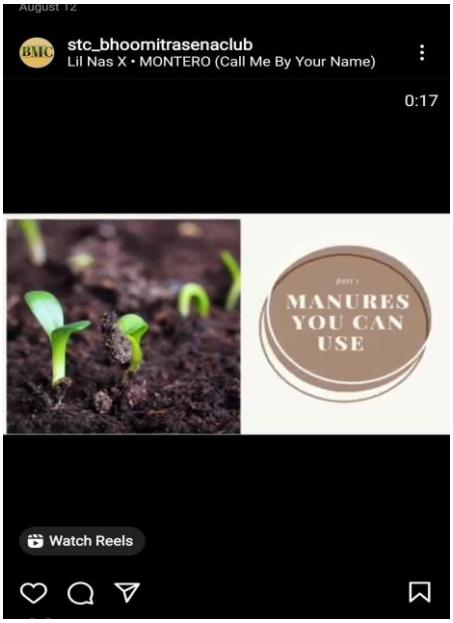
INSTAGRAM PAGE- AUGUST ACTIVITIES

- On 2 August, we uploaded a post regarding the adverse effects of climate change on the lives of women and girls across the world.

  https://www.instagram.com/p/CSEo-9cCYEa/?utm_medium=copy_link

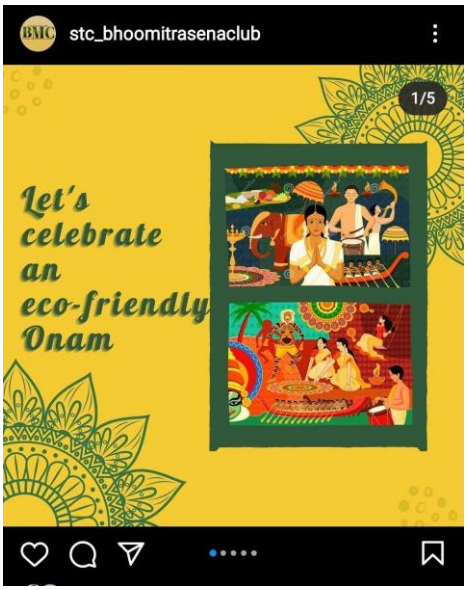
- On 9 August, a reel on the effective use of manures and a story saying a ‘new post’ was put up by the social media team heads.

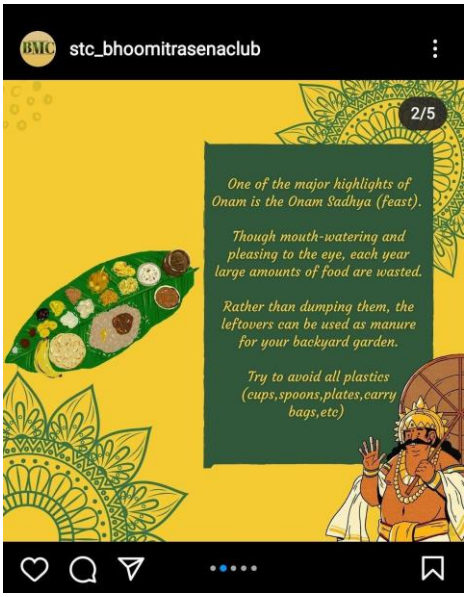
  https://www.instagram.com/reel/CSWNylxFCy_/?utm_medium=copy_link



- As a part of Onam celebration, a new post was put up by the members. The theme was Eco Friendly Onam.

  https://www.instagram.com/p/CSoGPqViNd9/?utm_medium=copy_link





- On 22 August, a reminder of the Prof hoo quiz and its guidelines were posted.

  https://www.instagram.com/p/CS3emzvCUH8/?utm_medium=copy_link

- The next post was on the Human Race Challenge. Our instagram page introduced the new challenge to the followers.
  https://www.instagram.com/p/CS8puD4FTLL/?utm_medium=copy_link

PARISTHITI MITRA AWARD -2021

Name of the program conducted: Declaration of **Paristhithi Mithra Award 2021**

Date: 7th September 2021

Chief guest/ Speaker: Shri Sabu Mathew (Principal, OLLHS Uzhavoor), Dr. Danny Mathew M (Alphonsa College, Pala) and Mr. Biju Thomas (St. Stephen's College, Uzhavoor)

Brief summary of what the program is and it's aim: Uzhavoor St. Stephens college announced the Eco-Friendly Award 2021 and the launch of the Research Journal, Oriol-2021. Award Review Report Judges, Shri Sabu Mathew (Principal, OLLHS Uzhavoor), Dr. Danny Mathew M (Alphonsa College, Pala) and Mr. Biju Thomas (St. Stephen's College, Uzhavoor) declared the awards. **St.Teresa's College, Ernakulam won the Paristhithi Mithra Award in Institutional category**. Mr. Bulbandran Adimali won the Individual category award. Bursar Father Jince Nellikkattil has released the thirteenth volume of the research journal Oriol. CEERD Executive Director Mr. Thomas KC, Research Cell Convenor Dr. Cincy Joseph led the program.

PRIZE DISTRIBUTION CEREMONY OF MAATATHINTE NOOLIZHA

NAME OF THE PROGRAM: Prize distribution ceremony of **Maatathinte Noolizha Challenge**

Date: 18th August 2021

CHIEF GUEST/SPEAKER : Hon. Collector of Ernakulam District **Shri. Jafar Malik IAS**

ANY OTHER GUEST/SPEAKER : Harithakeralam mission district coordinator, Sujith Kiran, Suchitwa mission district coordinator, P H Shine, St. Teresa's College Principal, Prof. Lizzy Mathew, Dean of extension, Dr. Nirmala Padmanabhan, teachers and students.

BRIEF SUMMARY OF WHAT THE PROGRAM IS AND ITS AIM:

The Hon. Collector of Ernakulam District Shri. Jafar Malik IAS distributed prizes to the winners of Maatathinte Noolizha Challenge which was jointly organized by Bhoomitra Sena Club St.Teresa's College, NSS, Harithakeralam mission, Kudumbasree and Suchitwa mission. Maatathinte Noolizha, the upcoming challenge was held with the aim to productively recycle and reuse waste clothes.

BENEFICIARIES AND NUMBER OF BENEFICIARIES:

More than 300 students from the district participated in the challenge and 31 from them which followed all the given instructions, were selected as finalists. The pictures of the products of these 31 finalists were uploaded to the Facebook page of Maatathinte Noolizha Challenge and the winners were declared based on the number of likes and marks provided by the jury. **The Winners of the challenge are :-**

1st prize (Mixer Grinder) – Anna Rilusha (Entry no. 13)

2nd prize (Induction Cooker) – Gracy Christeena (Entry no. 207)

3rd prize (Ironing Box) – Soumya Biju (Entry no. 129)

ANY RELEVANT OR INTERESTING QUOTATION FROM THE SPEAKERS OR AUDIENCE THAT THROW FURTHER LIGHT ON THE PROGRAM: Nothing specific.

'മാറ്റത്തിന്റെ നൂലിഴ' കാമ്പയിൻ വിജയികൾ സമ്മാനം ഏറ്റുവാങ്ങി

കൊച്ചി: തുണിമാലിന്യങ്ങൾ ഫലപ്രദമായി പുനരുപയോഗിക്കുക എന്ന ലക്ഷ്യത്തോടെ ഹരിത കേരളം മിഷൻ, കുടുംബശ്രീ, ശുചിത്വ മിഷൻ, സെൻറ് തെരേസാസ് കോളജ്, എൻ.എസ്.എസ് എന്നിവർ സംയുക്തമായി സംഘടിപ്പിച്ച 'മാറ്റത്തിന്റെ നൂലിഴ' കാമ്പയിനിന്റെ ഭാഗമായി നടത്തിയ അപ്സൈക്ലിങ് മത്സര വിജയികൾക്കുള്ള സമ്മാനദാനം കലക്ടർ ജാഫർ മാലിക് നിർവഹിച്ചു. വിജയികളായ അന്ന റിലുഷ, ഗ്രേസി ക്രിസ്റ്റീന, സൗമ്യ ബിജു എന്നിവർ സമ്മാനം ഏറ്റുവാങ്ങി.

'മാറ്റത്തിന്റെ നൂലിഴ' കാമ്പയിൻ വിജയികൾക്ക് കലക്ടർ ജാഫർ മാലിക് സമ്മാനങ്ങൾ കൈമാറുന്നു

ഉപയോഗിച്ചുപേക്ഷിച്ച വസ്ത്രങ്ങൾ പുനരുപയോഗിക്കാൻ പറ്റുന്ന മറ്റു ഉൽപന്നങ്ങളായി രൂപാന്തരപ്പെടുത്തുകയാണ് മാറ്റത്തിന്റെ നൂലിഴ കാമ്പയിനിലൂടെ ലക്ഷ്യമിട്ടിരുന്നത്. ജില്ലയിൽ മൂന്നൂറിലധികം പേർ മത്സരത്തിൽ പങ്കെടുത്തു. ഇതിൽനിന്ന് മത്സരമാനദണ്ഡങ്ങൾ പൂർണമായി പാലിച്ച 31 എണ്ണം അവസാന ഘട്ടത്തിലേക്ക് തെരഞ്ഞെടുക്കപ്പെട്ടു. മാറ്റത്തിന്റെ നൂലിഴ എന്ന ഫേസ്ബുക്ക് പേജിൽ ഈ ഉൽപന്നങ്ങളുടെ ഫോട്ടോകൾ പോസ്റ്റ് ചെയ്ത് അവയിൽനിന്നുമാണ് വിജയികളെ കണ്ടെത്തിയത്. ഏറ്റവും കൂടുതൽ ലൈക്ക് കിട്ടുന്നതിനൊപ്പം ജൂറി നൽകിയ മാർക്കും പരിഗണിച്ചാണ് വിജയികളെ നിശ്ചയിച്ചത്. അവസാന ഘട്ടത്തിലെത്തിയ 31 പേർക്കും സമ്മാനങ്ങൾ നൽകുന്നുണ്ട്.

ഹരിതകേരളം മിഷൻ ജില്ല കോഓഡിനേറ്റർ സുജിത് കരുൺ, ശുചിത്വ മിഷൻ ജില്ല കോഓഡിനേറ്റർ പി.എച്ച്. ഷൈൻ, സെൻറ് തെരേസാസ് കോളജ് പ്രിൻസിപ്പൽ പ്രഫ. ലിസി, ഡീൻ ഓഫ് എക്സ്റ്റൻഷൻ ഡോ. നിർമല പത്മനാഭൻ എന്നിവർ പങ്കെടുത്തു.

www.keralakaumudi.com www.facebook.com/keralakaumudi

'മാറ്റത്തിന്റെ നൂലിഴ' കാമ്പയിൻ വിജയികൾ സമ്മാനം നൽകി

കൊച്ചി: പഴകിയ വസ്ത്രങ്ങൾ ഫലപ്രദമായി പുനരുപയോഗിക്കുന്നതിന് 'മാറ്റത്തിന്റെ നൂലിഴ' കാമ്പയിന്റെ ഭാഗമായി നടത്തിയ അപ്സൈക്ലിംഗ് മത്സര വിജയികൾക്കുള്ള സമ്മാനദാനം ജില്ലാ കളക്ടർ ജാഫർ മാലിക് നിർവഹിച്ചു.

ഹരിത കേരളം മിഷൻ, കുടുംബശ്രീ, ശുചിത്വ മിഷൻ, സെന്റ് തെരേസാസ് കോളേജ്, എൻ.എസ്.എസ് യൂണിറ്റ് എന്നിവർ സംയുക്തമായാണ് മത്സരം സംഘടിപ്പിച്ചത്. വിജയികളായ അന്ന റിജുഷ, ഗ്രേസി ക്രിസ്റ്റീന, സൗമ്യ ബിജു എന്നിവർ സമ്മാനം ഏറ്റു വാങ്ങി.

ഉപയോഗിച്ചുപേക്ഷിച്ച വസ്ത്രങ്ങൾ പുനരുപയോഗിക്കാൻ പറ്റുന്ന മറ്റുത്പന്നങ്ങളായി രൂപാന്തരപ്പെടുത്തുകയാണ് മാറ്റത്തിന്റെ നൂലിഴ കാമ്പയിനിലൂടെ ലക്ഷ്യമിട്ടിരുന്നത്. ജില്ലയിൽനിന്ന് മുന്നൂറിലധികം പേരാണ് മത്സരത്തിൽ പങ്കെടുത്തത്. ഇതിൽനിന്നും മത്സരമാനദണ്ഡങ്ങൾ പൂർണമായിപാലിച്ച 31 എണ്ണം അവസാനഘട്ടത്തിലേക്ക് തിരഞ്ഞെടുക്കപ്പെട്ടു. മാറ്റത്തിന്റെ നൂലിഴ എന്ന ഫേസ്ബുക്ക് പേജിൽ ഈ ഉൽപന്നങ്ങളുടെ ഫോട്ടോകൾ പോസ്റ്റ് ചെയ്ത അവയിൽ നിന്നുമാണ് വിജയികളെ കണ്ടെത്തിയത്. ഏറ്റവും കൂടുതൽ ലൈക്ക് കിട്ടുന്നതിനൊപ്പം ജൂറിനൽകിയ മാർക്കും പരിഗണിച്ചാണ് വിജയികളെ നിശ്ചയിച്ചത്. അവസാന ഘട്ടത്തിലേക്ക് 31 പേർക്കും സമ്മാനങ്ങൾ നൽകുന്നുണ്ട്.

പഴകിയ വസ്ത്രങ്ങൾ പുനരുപയോഗിക്കുന്നതിന് സംഘടിപ്പിച്ച മാറ്റത്തിന്റെ നൂലിഴ കാമ്പയിൻ വിജയികൾക്ക് കളക്ടർ ജാഫർ മാലിക് സമ്മാനങ്ങൾ വിതരണം ചെയ്യുന്നു

ഹരിത കേരളം മിഷൻ ജില്ലാ കോ-ഓർഡിനേറ്റർ സുജിത്കരുൺ, ശുചിത്വ മിഷൻ ജില്ലാ കോ-ഓർഡിനേറ്റർ പി.എച്ച്. ഷൈൻ, സെന്റ് തെരേസാസ് കോളേജ് പ്രിൻസിപ്പൽ പ്രൊഫ. ലിസി, ഡീൻ ഓഫ് എക്സറ്റൻഷൻ ഡോ. നിർമല പത്മാനാഭൻ, അദ്ധ്യാപകർ, വിദ്യാർത്ഥികൾ എന്നിവർ പങ്കെടുത്തു.

'മാറ്റത്തിന്റെ നൂലിഴ': പുരസ്കാരം നൽകി

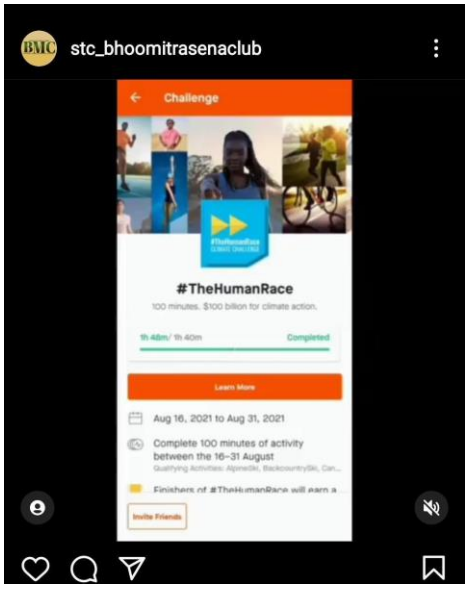
കൊച്ചി● തുണി മാലിന്യങ്ങൾ ഫലപ്രദമായി പുനരുപയോഗിക്കുക എന്ന ലക്ഷ്യത്തോടെ ഹരിത കേരളം മിഷൻ, കുടുംബശ്രീ, ശുചിത്വ മിഷൻ, സെന്റ് തെരേസാസ് കോളജ് ഭൂമിത്ര സേന ക്ലബ്, എൻഎസ്എസ് എന്നിവർ സംയുക്തമായി സംഘടിപ്പിച്ച 'മാറ്റത്തിന്റെ നൂലിഴ' എന്ന ക്യാംപെയ്നിന്റെ ഭാഗമായി നടത്തിയ അപ്സൈക്ലിങ് മത്സര വിജയികളായ അന്ന റിലുഷ, ഗ്രേസി ക്രിസ്റ്റീന, സൗമ്യ ബിജു എന്നിവർക്ക് കലക്ടർ ജാഫർ മാലിക് പുരസ്കാരം നൽകി.

ഹരിത കേരളം മിഷൻ ജില്ലാ കോഓർഡിനേറ്റർ സുജിത് കരുൺ, ശുചിത്വ മിഷൻ ജില്ലാ കോഓർഡിനേറ്റർ പി. എച്ച്. ഷൈൻ, സെന്റ് തെരേസാസ് കോളജ് പ്രിൻസിപ്പൽ പ്രഫ. ലിസി, ഡീൻ ഓഫ് എക്സ്റ്റെൻഷൻ ഡോ. നിർമല പത്മനാഭൻ എന്നിവർ പങ്കെടുത്തു.

INSTAGRAM PAGE- SEPTEMBER CHALLENGE

- September 1 – human race challenge post.

  https://www.instagram.com/p/CTRWuw_lSrb/?utm_medium=copy_link



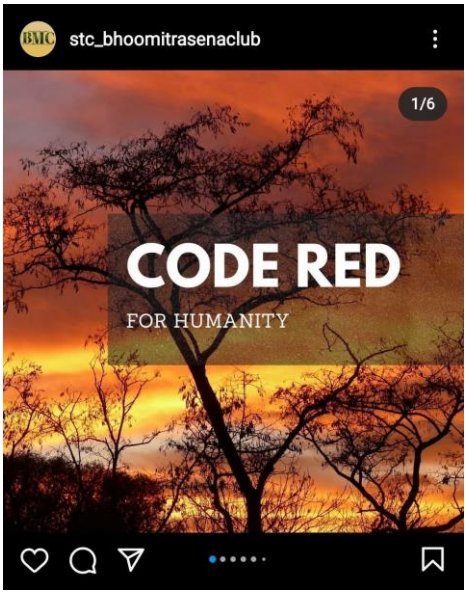
- September 4 – meeting with the tide turner's publicity team regarding their plans for September posting.

- September 6 – 1. Karshakasree posts.

  https://www.instagram.com/p/CTmP3gKlO_C/?utm_medium=copy_link

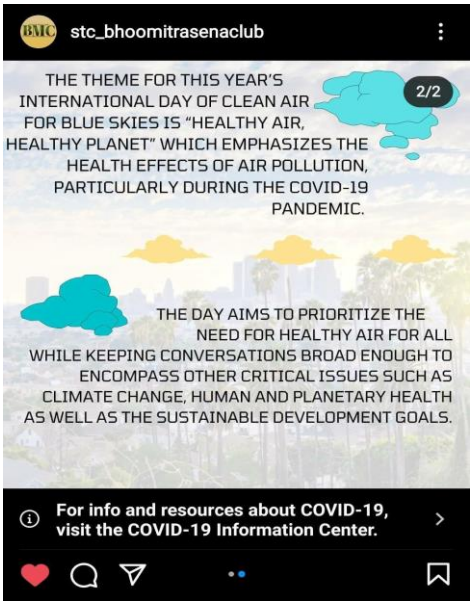
- September 13-IPCC code red for humanity.

  https://www.instagram.com/p/CTwK6ETlMEm/?utm_medium=copy_link



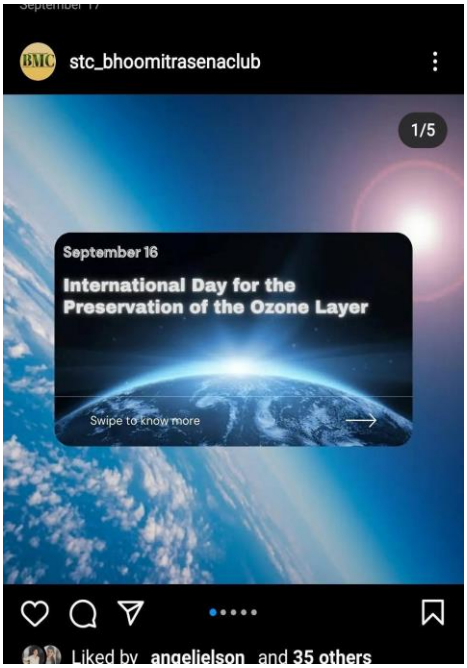
- September 7- International day of clean air for blue skies #cleanairforall.

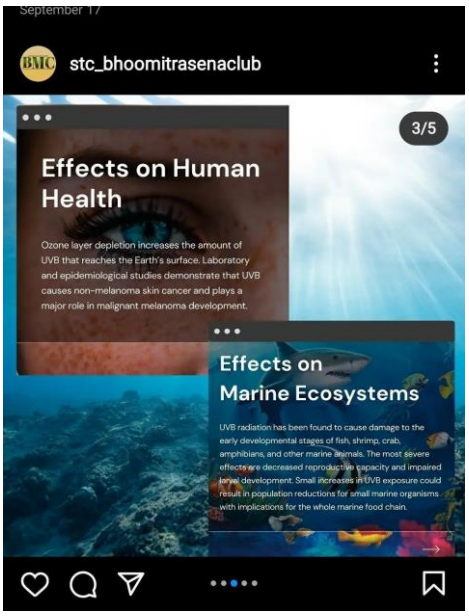
  https://www.instagram.com/p/CTgdSUvlmp1/?utm_medium=copy_link



- September 16 - International day for prevention of the ozone layer.

  https://www.instagram.com/p/CT31xd6Fwxl/?utm_medium=copy_link





- September 17- Tide Turner's post

  https://www.instagram.com/p/CT62trmjU1p/?utm_medium=copy_link

- September 19- story showing the release of the reel.

- September 20 -release of the reel it is about how covid 19 situation was a boon to the environment.

  https://www.instagram.com/p/CUMdEjfDUqY/?utm_medium=copy_link

- September 29- Release of the results from Prof. Hoo series.

  https://www.instagram.com/p/CS9KdrGF40k/?utm_medium=copy_link

VRIKSHA RAKSHA BANDHAN CHALLENGE

NAME OF THE PROGRAM-Vriksha Raksha Bandhan Challenge

BRIEF SUMMARY OF WHAT THE PROGRAM IS AND ITS AIM-
As part of Raksha Bandhan Festival which was held on 22nd August 2021, the Ministry of Education (Government of India) joined hands with various institutions to hold a national movement called 'Vriksha Raksha Bandhan challenge'. The challenge was to make the youth aware about the importance of protecting trees and the environment. The students and the BMC Club members of St.Teresa's College took pictures hugging trees and showing solidarity to nature, which was then popularised through social media platforms.

BENEFICIARIES AND NUMBER OF BENEFICIARIES-
The students and BMC members of St.Teresa's College, Ernakulam.

https://www.instagram.com/p/CTCWH6-F_xy/?utm_medium=copy_link

TERESIAN KARSHAKASREE- JULY CHALLENGE RESULT

NAME OF THE PROGRAM CONDUCTED- Karshakasree challenge result announcement for the month of July

DATE- 31 July 2021

BRIEF SUMMARY OF WHAT THE PROGRAM AND ITS AIM-

Challenge for July : Composting

The Bhoomitra Sena club and the Department of Botany worked together in association with the Government of Kerala's Haritha Keralam Mission for the Teresian Karshakasree challenge. The Teresian Karshakasree challenge for the month of July was for preparing compost at home. The students prepared compost at home throughout the month of July and by the end of the month they uploaded a photo of their work onto a google drive link provided. The staff advisors for the Teresian Karshakasree challenge were Smt. Linda Therese Luiz, Asst. Professor, Department of Sociology, Ms. Merin Alice George , Asst. Professor of the Department of Botany and Ms. Tiya K.J, Asst. Professor of the Department of Zoology. The primary goal of the Teresian Karshakasree Challenge was to promote organic farming among the students. The aim of this month's challenge was to introduce composting to the students. The challenge made the students prepare their own composting and thereby making themselves sufficient for growing their own organic crops. There were many tutorials and videos uploaded on the official Teresian College website.

Karshakasree MOODLE page served as a guide for the students to complete the challenge. Each month three departments are chosen for 1st place, 2nd place and 3rd place based on the student participation from that department. In July, the Department of Chemistry secured the first place followed by the Department of Zoology and the Department of Nutrition and Dietetics securing the second and third.

BENEFICIARIES AND THE NUMBER OF BENEFICIARIES-

All the students of St. Teresa’s College, Ernakulam.

TERSIAN KARSHAKASREE - AUGUST RESULT

NAME OF THE PROGRAM CONDUCTED: Karshakasree challenge result announcement for the month of August.

DATE: 31 August 2021

BRIEF SUMMARY OF WHAT THE PROGRAM WAS:

Challenge for August: ഓണത്തിന് ഒരു മുറം പച്ചക്കറി/ Onam Harvest

The Bhoomitra Sena club and the department of Botany worked together in association with the Government of Kerala's Haritha Keralam Mission for the Teresian Karshakasree Challenge. The Teresian Karshakasree Challenge for the month of August was to harvest vegetables for the Onam season. The students harvested the crops they had planted throughout the months of June, July and uploaded photos of their work onto a google drive link that was provided. The staff advisors for the Teresian Challenge was Smt.Linda therese Luiz, asst. Professor, Department of Sociology , Ms. Merin Alice George, Assistant professor of Botany and Ms Tiya K.J, Assistant Professor of Zoology. The Primary goal of Teresian Karshakasree Challenge was to promote organic farming among the students and thereby inculcate in them a love for farming. They also aimed at making the students grow their own crops and to introduce new techniques for organic farming. The students were also educated on the benefits of organically grown crops. There were many tutorials and videos demonstrating how to grow vegetables at home that were uploaded on the Teresian Karshakasree MOODLE page.

In August,the first positions were shared between the Departments of Botany, Chemistry and Zoology. Dept of physics and Department of History secured the second and third positions.

BENEFICIARIES AND NUMBER OF BENEFICIARIES:

All the students of St Teresa’s college, Ernakulam.

TIDE TURNERS

Name of the Project- Tide Turners
Date- 11th September 2021

Further on our major focus will be on plastic reduction other than Tide Turners Challenge (initiative by UNEP) even though our inst page activity will continue like before.

Our new project is in collaboration with GIZ which is a German based organization.

Main aim is plastic reduction and we have 4 core groups, any of which one can choose to be a part of by filling up the Google form circulated in the group.

Once the group is set, an action plan will be derived, further information regarding the same will be informed later on.

Within each core group, there will be 4 major tasks which are

a)Awareness

b) Implementation

c) Measuring outcome

d) Nudge team

Group formation is the first step which will be done as soon as the forms are filled and the duties of each team will be informed later on.

Active members and contributors will be awarded certificates recognized by GIZ and the Mayor which holds great value,

The four teams have been formed namely

a. Sustainable Menstruation

b. Dabba challenge

c. Carry bag team

d. Sustainable childcare.

The members have been allotted into their chosen groups. As a primary step there will be a meeting conducted tomorrow from 3-5 pm in order to select the leaders for each team. The action plan of each of the 4 teams will be discussed. By coming Monday a PPT will have to be prepared regarding the action plan and goals of each team.

Main aim of each team is as follows.

a. Sustainable Menstruation- Informing and promoting the use of reusable and recyclable pads and menstrual cups among the population.

b. Dabba Challenge- Aim to reduce the use of plastics for packaging of food items by restaurants.

c. Carry Bag Team- Informing and promoting the use and carry of cloth bags on a daily basis.

d. Sustainable Childcare- Informing and promoting reusable and recyclable childcare products, giving sustainable childcare products.

TERESIAN KARSHAKASREE CHALLENGE 2021-23

NAME OF THE PROGRAM-Challenge for September: Hydroponics

DATE- Conducted during the month of September

BRIEF SUMMARY OF WHAT THE PROGRAM IS AND ITS AIM-

The Teresian Karshakasree Challenge for September was to prepare hydroponics and aquaponics. The students created their hydroponics or aquaponics system throughout September and at the end of the month uploaded a photo of their photo into the google drive link which was provided. The staff advisors for the Teresian Karshakasree Challenge are Smt. Linda Therese Luiz, Asst. Professor, Department of Sociology, Ms Merin Alice George, Assistant Professor of Department of Botany and Ms Tiya K.J ., Assistant Professor of Department of Zoology. The Bhoomitra Sena Club and theDepartment of Botany are working in association with the Government of Kerela's Haritha Keralam Mission for the Teresian Karshakasree Challenge.

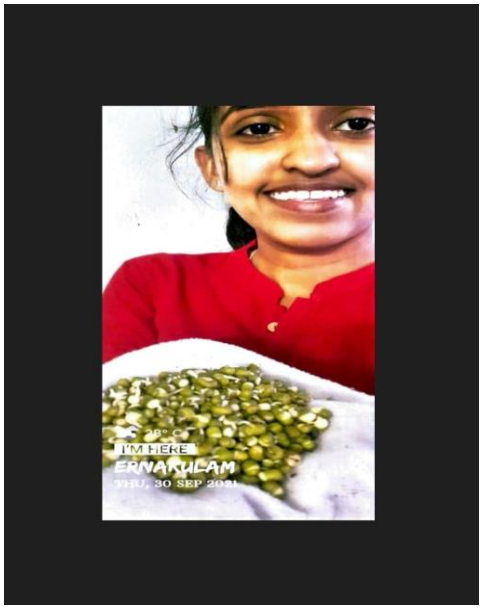
BENEFICIARIES AND NUMBER OF BENEFICIARIES-

The primary goal of the Teresian Karshakasree Challenge is to promote organic farming among the students. This month's challenge aimed to introduce the preparation of hydroponics or aquaponics systems. The challenge allows the students to create their own hydroponic or aquaponic system thereby helping them to become self-sufficient for cultivating their organic crops. There were tutorials and videos were uploaded on the official Teresian Karshakasree MOODLE page which served as a guide to students to complete their challenge in September.

9 September 2021 : Challenge for September

5 October 2021: Result for the challenge for September.

Photos of Hydroponics or Aquaponics done by the students:


I'M HERE
ERNAKULAM
THU, 30 SEP 2021


GPS Map Camera
Kochi, Kerala, India
X8QF+P9V, Arakkakadavu, Kochi, Kerala
682028, India
Lat 9.989436°
Long 76.32314°
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kkovil Temple
Google


Malappuram, Kerala, India
Longitude Latitude
27° C
Thursday, 30, Sep, 2021
05:12 PM


Kollam, Kerala, India
Longitude Latitude
76.8065° E 9.0072° N
29° C
Thursday, 30, Sep, 2021 05:16 PM

KOCHI ECO CHALLENGE ORIENTATION SESSION

Name of the program conducted: Kochi Eco challenge orientation session

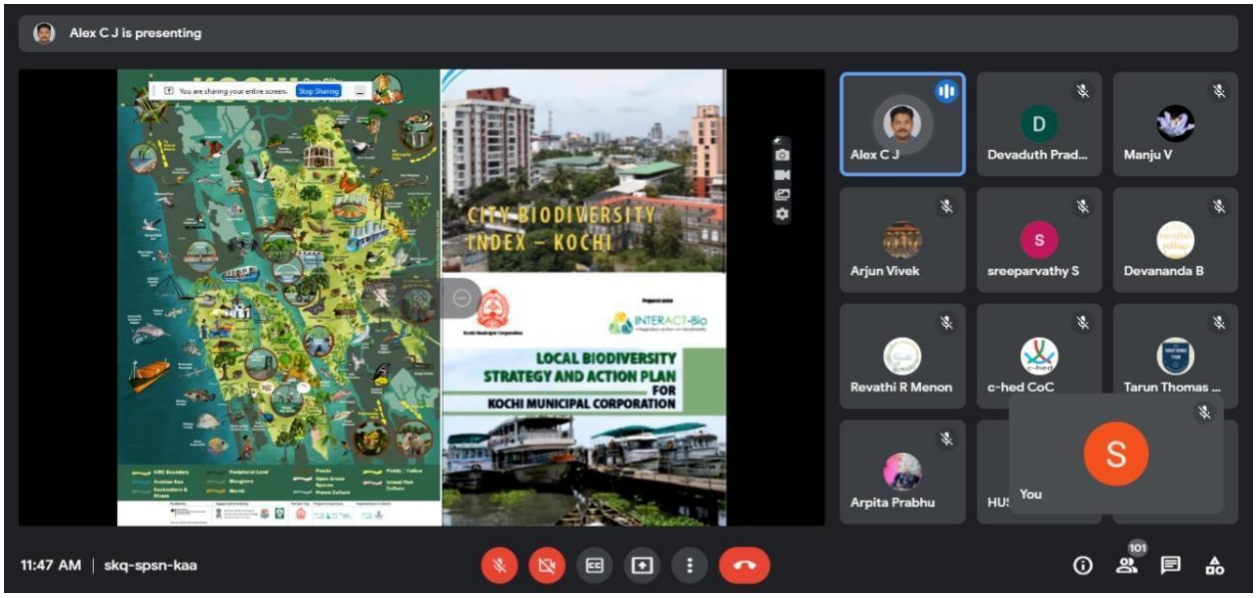
Date: 20th September 2021

Chief Guest/ Speaker: Dr. Alex C. J, Project Officer, Interact bio project, ICLEI South Asia

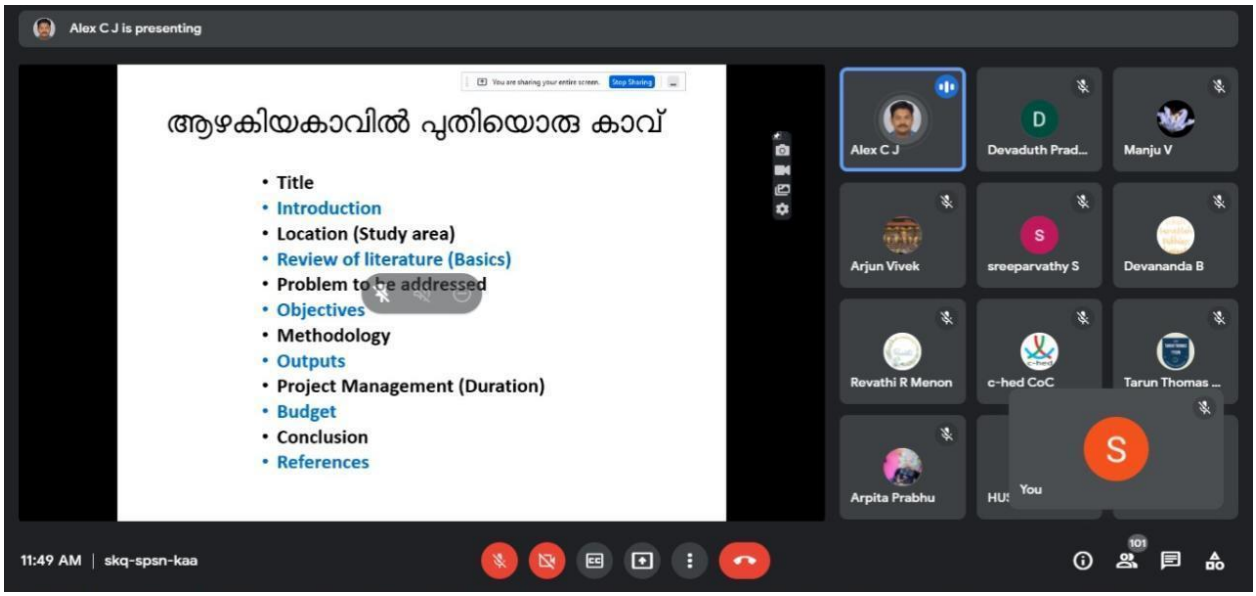
Any other guest/ Speaker: Aswathy Murali, Environmental Engineer, C-Hed.

Brief summary of what the program is and its aim: The session was an orientation conducted for the participants of the Kochi Eco challenge event. Dr. Susan Mathew Panakkal welcomed the participants and the chief guests to the event. Around 35 teams registered for the event. In the session, rules of the event were explained by Aswathy ma'am. Dr. Alex C. J discussed some of the environmental issues faced by Kochi and few examples of proposals such as Vembanad wetland, Periyar Muvattupuzha river basin etc, for the participants to get a clear idea about how they have to find an ecosystem and submit the proposal relating to the same. The participants were instructed to include scientific and technical backup, diagramatic representation and the estimate of the proposal in their project report.

Beneficiaries and number of beneficiaries: Around 35 team members and 101 participants including both students and teachers




Alex C J is presenting
Kochi Eco – Challenge
Aadhil Akbar has left the meeting
Aswathy Murali
MAYADEVI S
Alex Jose
Manoj Krishna
Rajesh T P
Kiran Thomas T...
BINI NIRAVATHU
Amrita Menon
Manju V
Alex C J
88 others
You
11:09 AM | skq-spsn-kaa


Alex C J is presenting
ആഴകിയകാവിൽ പുതിയൊരു കാവ്
Title
Introduction
Location (Study area)
Review of literature (Basics)
Problem to be addressed
Objectives
Methodology
Outputs
Project Management (Duration)
Budget
Conclusion
References
Alex C J
Devaduth Prad...
Manju V
Arjun Vivek
sreeparvathy S
Devananda B
Revathi R Menon
c-hed CoC
Tarun Thomas ...
Arpita Prabhu
You
11:49 AM | skq-spsn-kaa

TERESIAN KARSHAKASREE CHALLENGE- OCTOBER

Name of the project: Teresian Karshakasree- Microgreen Preparation

Date: October, 2021

Brief description of what the program is:

The Teresian Karshakashree Challenge for October was Microgreen Preparation. The students planted their own microgreens throughout October and with the microgreen they were allowed to cook food with the microgreen and at the end of the month they uploaded the photos to the respective google drive link. The staff advisors for the Teresian Karshakashree Challenge are Smt. Linda Therese Luiz, Asst. Professor, Department of Sociology, Ms Merin Alice George, Assistant Professor of Department of Botany and Ms Tiya K.J ., Assistant Professor of Department of Zoology. The Bhoomithrasena Club and theDepartment of Botany are working in association with the Government of Kerela's Haritha Keralam Mission for the Teresian Karshakashree Challenge.

The primary goal of the Teresian Karshakashree Challenge is to promote organic farming among the students. This month's challenge aimed to introduce the microgreen cultivation. The challenge allows the students to create their own microgreens thereby helps them to become self-sufficient for cultivating their organic crops. There were tutorials and videos were uploaded on the official Teresian Karshakashree MOODLE page which served as a guide to students to complete their challenge in October.

Each month three departments are chosen for 1st place, 2nd place and 3rd place based on the student participation from that department. In October the first place was shared between Department of Zoology and History followed by the Department of Physics and by the Department of Botany.

06 October 2021: Brochure for October Challenge

4th November 2021 : Poster announcing October Result

Photos of Microgreen Preparation done by the students:


26° C
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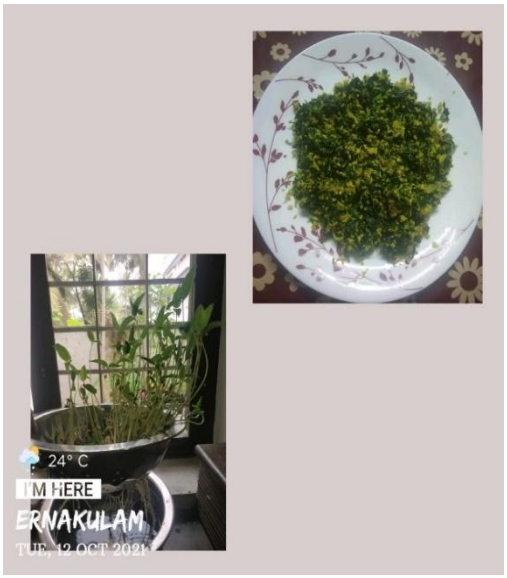
ERNAKULAM
TUE, 12 OCT 2021


24° C
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ERNAKULAM
TUE, 12 OCT 2021


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ERNAKULAM
SAT, 16 OCT 2021


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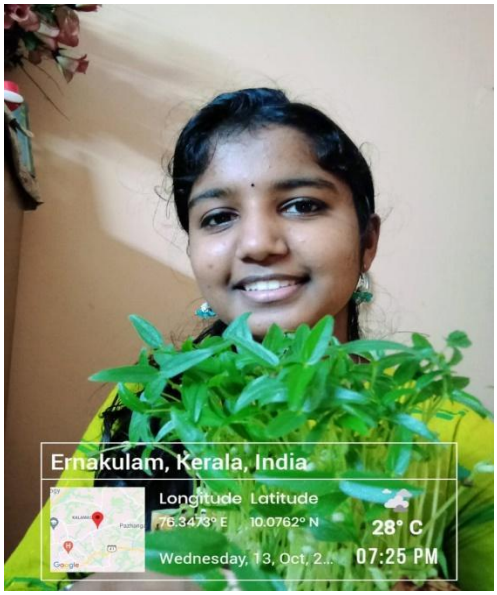
Ernakulam, Kerala, India
Longitude Latitude
76.3473° E 10.0762° N
28° C
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07:25 PM


Ernakulam, Kerala, India
Longitude Latitude
76.3471° E 10.079° N
24° C
Friday, 15, Oct, 2021
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SOCIAL MEDIA- OCTOBER

- 2nd and 3rd October 2021- Meeting for the publicity teams of Teresian Karshakasree challenge and tide turners respectively to know regarding their plans for October.

- On 4 October 2021 there was a post on World Habitat Day which was made and posted by Suvarna.

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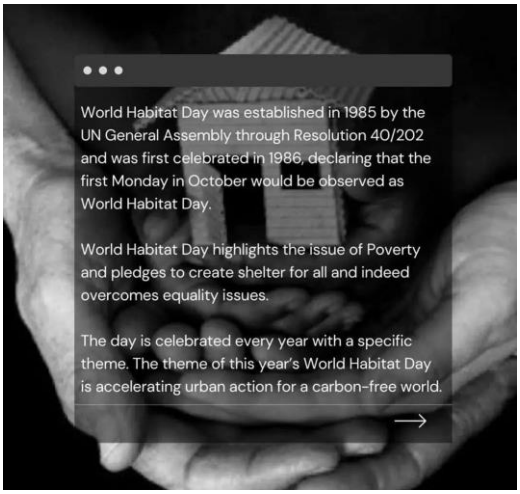

- 9 October 2021 post regarding World Migratory Birds Day.

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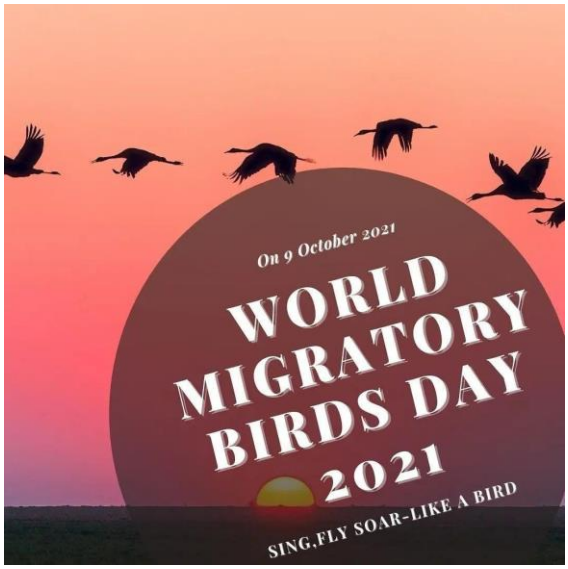

- 11th October 2021 post on the various wonders of nature that amazed mankind across the globe.

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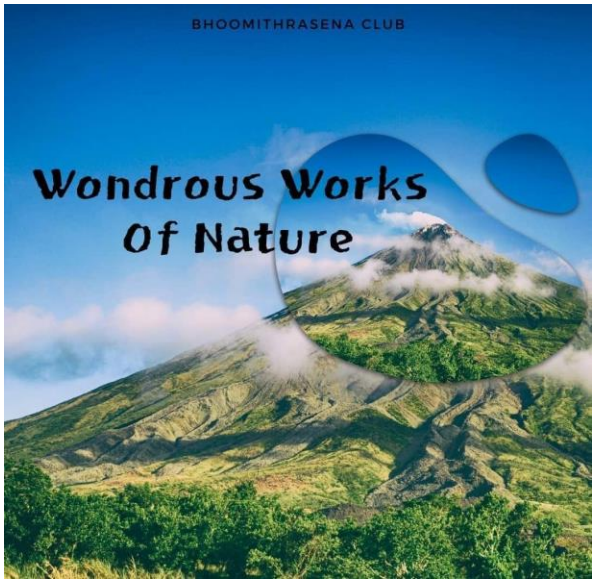
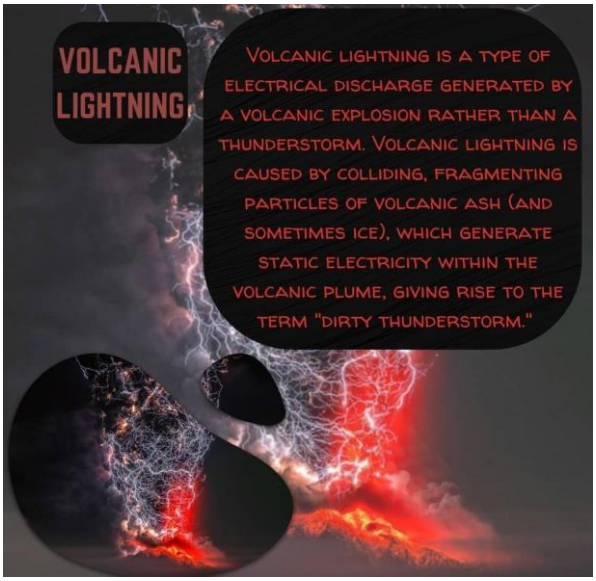
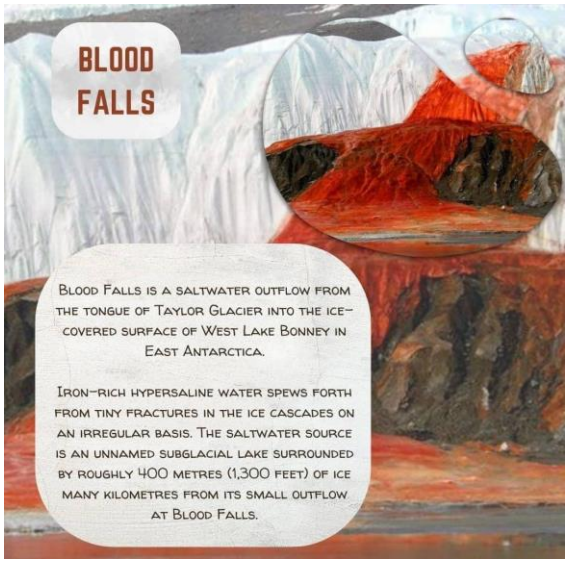
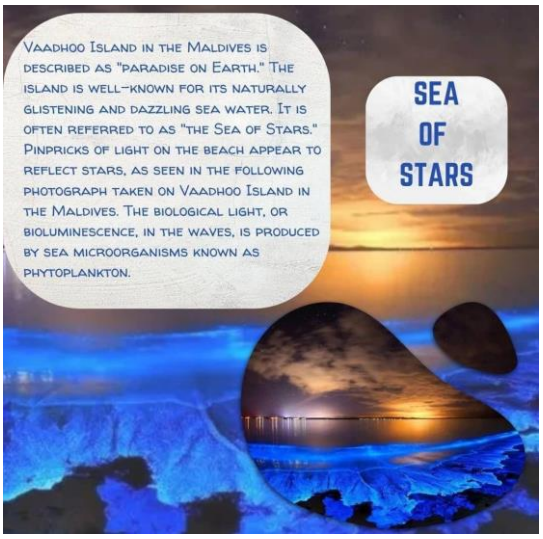








- On 17 October - A story which had a countdown showing the drop of our new reel.
- 18 October 2021 was the launch of the reel which was about the contributions of various MNC's to the environment.

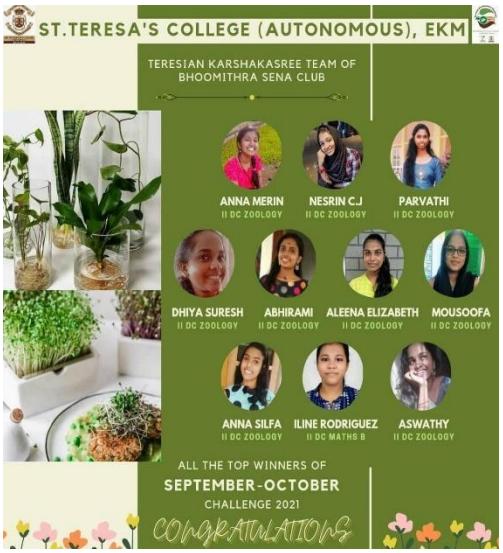
https://www.instagram.com/reel/CVKuPJ3FIRO/?utm_medium=copy_link

- 24 October 2021 uploaded a story regarding the upcoming Prof. Hoo.
- October 25 was when Prof. Hoo helded . The topic of the quiz was related to World Habitat Day and World Migratory Birds Day.
- 26 October 2021 there was a congratulatory post to all the winners of Prof. Hoo.

SOCIAL MEDIA- INSTAGRAM PAGE - November 2021

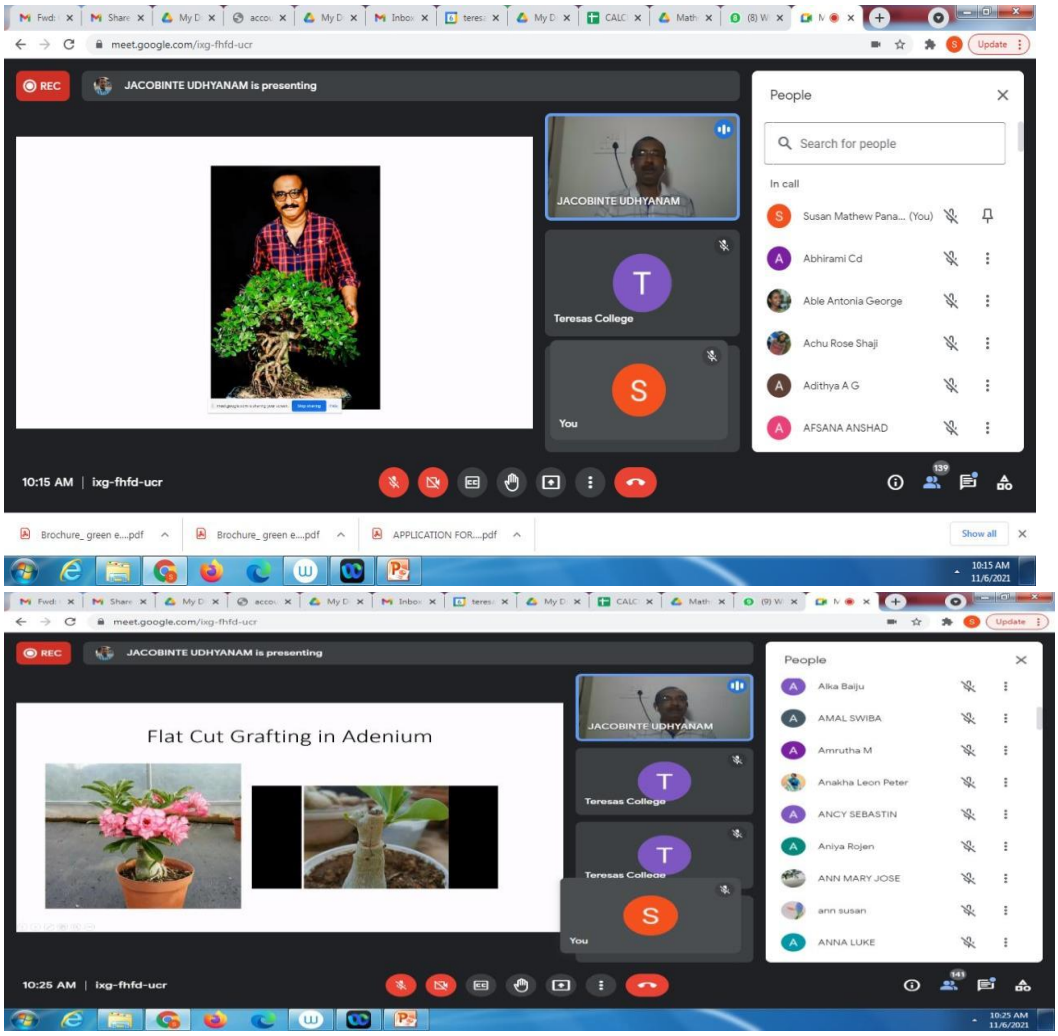
- 16 th November 2021- post congratulating the October Challenge winners.

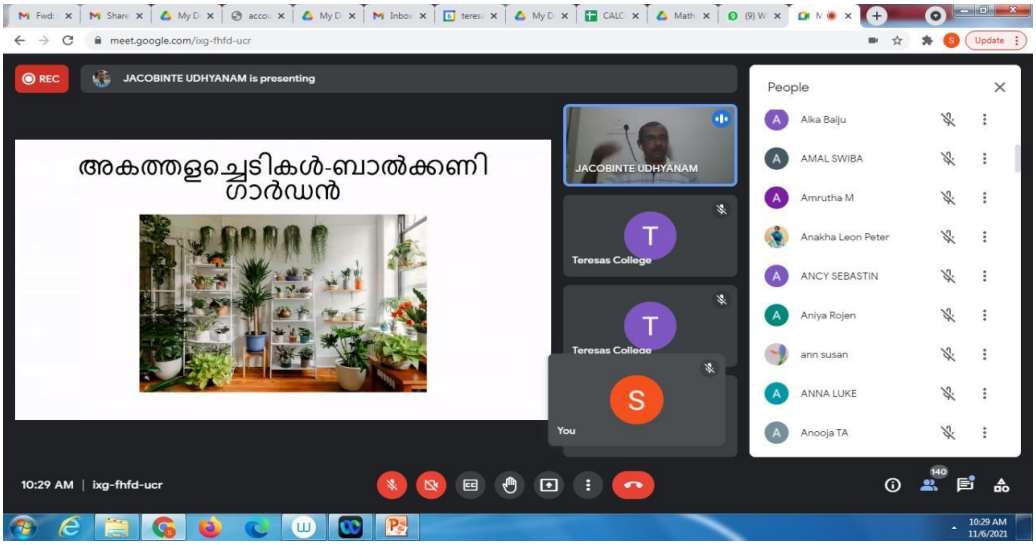
https://www.instagram.com/p/CWVDcWhNuqi/?utm_medium=copy_link



WEBINAR ON GREEN ENTREPRENEURSHIP

Name of the program- Green Entrepreneurship- Profit from Your Passion
Date - 6th November 2021
Chief Speaker: Prof. Jacob Varghese Kunathara.
Brief description -
The event was conducted on 6th November 2021 at 10a.m. through Google Meet. Prof Jacob Varghese discussed about green entrepreneurship, growth of balcony gardening, how people are hired to setup balcony garden and how it is a growing business. Prof. Jacob Varghese also shared names of many plants that are business friendly in terms of export and import. Peace Lily plant, dwarf finger palm, philodendron, Boston fern are some of those plants. Growing plants can help in reducing tensions and can also be source of entertainment during the lock down times.
There was a feedback form sent at the end of the meeting which was to be filled by the participants.
https://forms.gle/yE5rd6tXpqTi6iJC7




REC
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JACOBINTE UDHYANAM
Teresas College
Teresas College
You
People
Alka Baiju
AMAL SWIBA
Amrutha M
Anakha Leon Peter
ANCY SEBASTIN
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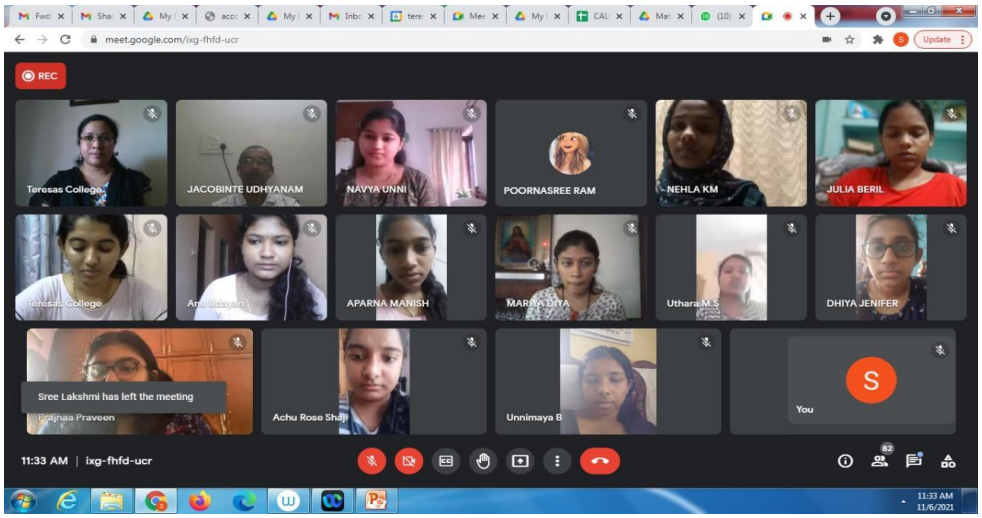
10:29 AM | ixg-fhfd-ucr


REC
Teresas College
JACOBINTE UDHYANAM
NAVYA UNNI
POORNASREE RAM
NEHLA KM
JULIA BERIL
APARNA MANISH
MARIYA DIYA
Uthara.M.S
DHIYA JENIFER
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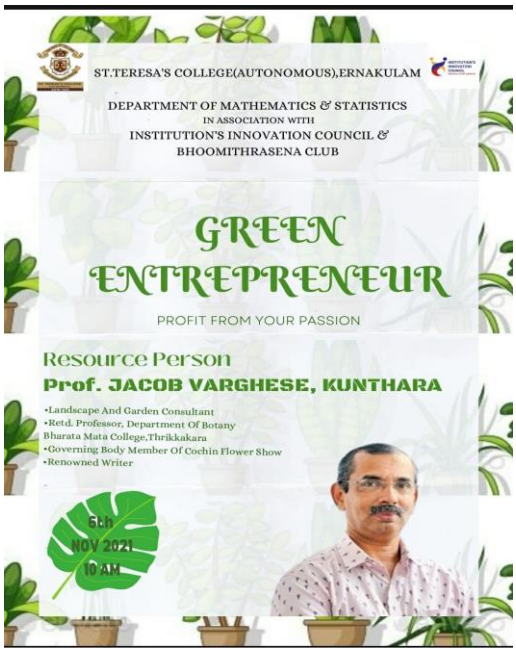
ST.TERESA'S COLLEGE(AUTONOMOUS),ERNAKULAM
DEPARTMENT OF MATHEMATICS & STATISTICS
IN ASSOCIATION WITH
INSTITUTION'S INNOVATION COUNCIL &
BHOOMITHRASENA CLUB
GREEN ENTREPRENEUR
PROFIT FROM YOUR PASSION
Resource Person
Prof. JACOB VARGHESE, KUNTHARA
•Landscape And Garden Consultant
•Retd. Professor, Department Of Botany
Bharata Mata College,Thrikkakara
•Governing Body Member Of Cochin Flower Show
•Renowned Writer
6th NOV 2021 10 AM


SCHEDULE OF EVENTS
Prayer -Ms.Mary Linda
2nd PG Statistics
Welcome Speech -Ms.Anu Udayan
IIC Student Coordinator
Session On Developing Business From Gardening -Prof. Jacob Varghese
Vote Of Thanks -Ms.Alfiya Abdul Salam
Student Leader,BMC
Click here to join
A Session on how to earn money from gardening
Programme Coordinator
Ms.Alka Benny
IIC Faculty Coordinator &
Assistant Professor,
Dept. Of Mathematics

PAPER AND CLOTH BAG MAKING WORKSHOP

- Name of the program- Paper and Cloth bag making workshop at SH College, Thevara by our students

- Date- 22 Dec, 2021

- A brief description on what the program was-
  The NSS volunteers of Sacred Hearts College, Thevara conducted a hands-on training session for the college students on paper and cloth bag making. Two of the students of St Teresa's College, Ernakulam also participated in the same. Sreya Josey and Shahnas TN went as trainers to SH college to train the students on paper and cloth making. Around 100 students participated in the same.

RE-COVER CAMPAIGN

- Name of the program- Re-Cover (Milk packet Collection)
- Name of the Club- Bhoomithra Sena Club
- Date- 15 January 2022
- A brief description on what the program was-
  The volunteers of Bhoomithra Sena Club collected plastic milk packets from the college students on January 15, 2022. The students were requested to bring the leftover milk packets from their households to college in order to recycle them. The Bhoomithra Sena Club of Govt. Model Engineering College conducted a program ‘Re-Cover’ to reinvigorate the used milk packets into useful products. St Teresa's College, Ernakulam, and Bharat Matha College participated in the 'Re-Cover' campaign conducted by the Govt. Model Engineering College to repurpose old milk packets into usable products. The packets were then taken to the recycling unit in Kakkanad. The collection program was a huge success with the help of sheer hard working students of the college.

Booster Dose to Heal and Make her Immune _ Moulding St.Teresa's to be Environmentally Conscious

- Report by Maxlin. M Maxy

St.Teresa's College, Ernakulam has always been a nature-friendly campus since its conception. Despite the fact that she is located at the center of a bustling city, she has never forgotten to keep her roots intact with the soil that brought her up. Bhoomitra Sena
Club of the college immensely helps in fulfilling the vision a girl has towards nature as she steps in as a child, just away from school. The Club aids in grooming environmentally-conscious and socially responsive young women who value the bounties of nature and strive to preserve them.The students are always actively involved in initiatives to tackle the issue of plastic in the environment. An initiative worthy of mention is
the Society of Teresians for Environment Protection that was envisaged in 2016. STEP promotes eco-friendly alternatives to plastic carry bags such as Bhoomithram Sanchis / rexine college bags (Prakriti Bags). These bags are largely used by the students and
teachers on the campus. The society up-cycles textile waste from tailoring shops in Kochi city which would be otherwise burnt. The outer covers of these Bhoomithram Sanchis are made from upcycled textile wastes. Our student servis brand ambassadors of Eco-friendly
alternatives by using various products such as ball bags, strawberry bags, zip bags, and Tshirt bags. It has increasingly become a fashion statement in college to use the Prakriti bags as the college bag. St. Teresa's deems it proud to say that, we won recognition from the most honorable Prime Minister of India, Shri. Narendra Modi in his Man Ki Baat speech for making soft toys for educational purposes from tailoring cloth waste.STEP has
hugely aided in turning the campus green and we hardly can spot a student or a teacher in bags made not of eco-friendly materials. One student who uses this Prakriti bag
influences her family and thereby the society. There are around 4000
students on the campus, which numbers 4000 families. The carry bags that we make are also sold in the shops near Broadway ,Ernakulam. Thus, STEP propagates
its motives to a much larger scale and also makes the society imbibe the culture of using Prakriti Sanchis. The college has also taken up the Kochi Eco challenge which is an
initiative with the Municipal Corporation of Kochi that involves preparing a report on the sensitive habitats of Kochi and to design a solution for its conservation by the
student groups of different institutions. The project aims at the restoration of the local ecosystem, a theme in tune with the world environment day 2021, through the
collective action of the youth and to encourage the present scenario of
the environment by inspiring, informing, and enabling the people to improve their quality of life without compromising the future generations. Students are also keen onpreserving the forests and reviving the lush green beauty that we have lost due to deforestation. As a result, a social forestry project called Pachathuruthu was envisaged. It is an umbrella project initiated by Bhoomitra Sena Club, Dept. of Botany, Dept. of Zoology, Unnat Bharat Abhiyan of St. Teresa's College, Ernakulam incoordination with Haritha Keralam Mission, Ernakulam, and EDRAAC (Ernakulam District Residents Association Apex Council) with an objective to preserve green and afforestation of barren lands. Teresian Tree Mentors (TTM) is volunteering as a group for the sustainable maintenance of ecological balance and improvement of nature by social forestry in Ernakulam district. Consistent monitoring and evaluation are an integral part of the program. A total of 8000 tree
saplings were distributed to Ernakulam district associations and UBA panchayats. Maatathinte Noolizha is another challenge that was undertaken by the Club in association with Haritha Kerala mission and Suchitwa Kerala mission. The challenge propagated

the upcycling of waste clothes and creating novel products from it. The challenge received applause and recognition from the masses providing more than 200 entries for the competition. Participants of the challenge realized the vast possibility of upcycling clothes and we believe this realization would encourage them to consume less and promote sustainable clothing. A party fromtheprojects undertaken, students and teachers have imbibed the green culture to their lives. They use water bottles made of steel, copper, or
aluminium. The canteen serves food and drinks in glass and paper containers. In the long run, we aim to introduce cellulose-based packaging in our canteen. St . Teresa 's molds an
environmentally responsible woman who can teach and bring about change in the generations to come. Any event that takes place on the campus proclaims green protocol and strictly adheres to the laid green guidelines and takes a keen look at the decor, banner,
bouquet, memento, and even the bottles served for the guests and the hosts. Students also don't use plastic /spiral binding for their various projects and reports. There is also a strict ban on the use of flex and plastic banners for events and programs on campus. The Green
protocol adopted by the college boosts in preserving the invaluable resources available on earth and meticulously training the generation to precisely consume. Such initiatives and rules embraced by the community shall endeavor to make our place more beautiful and lush.
Green shall be the mantra of each and every woman who steps out of the campus and the college will forever strive to make herself green.

Booster Dose to Heal and Make her Immune _ Moulding St.Teresa's to be Environmentally Conscious

-Maxlin M Maxy
(Student)

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KOCHI ECO CHALLENGE- AWARD CEREMONY

The results of the Kochi Eco challenge was declared on Feb 10 th, 2022 at Kochi Municipal corporation Council Hall at 10.30 am. Prizes and certificates to participants were distributed by Kochi Mayor.









അളവിൽ ലോഡ് കയറ്റി ഭക്ഷ്യധാ ലോറി ഉടമകൾ പറയുന്നു.

കൊച്ചി ഇക്കോ ചാലഞ്ച് അവാർഡ് പ്രഖ്യാപനം നടൻ ഇന്ദ്രജിത് സുകുമാരൻ നിർവഹിക്കുന്നു. ജില്ലാ വിദ്യാഭ്യാസ ഓഫിസർ ടി.ആർ. ഓമന, സെന്റ് തെരേസാസ് കോളജ് പ്രിൻസിപ്പൽ ഡോ. ലിസി മാത്യു, മേയർ എം. അനിൽകുമാർ, പൂർണിമ ഇന്ദ്രജിത് എന്നിവർ സമീപം.

ഇക്കോ ചാലഞ്ച് വിജയികൾ

കൊച്ചി● കൊച്ചി കോർപറേഷൻ സി- ഹെഡിന്റെയും എറണാകുളം സെന്റ് തെരേസാസ് കോളജിന്റെയും ശുചിത്വ മിഷന്റെയും സഹകരണത്തോടെ നടപ്പാക്കുന്ന ഇക്കോ സിസ്റ്റം റെസ്റ്റോറേഷൻ പദ്ധതിയായ കൊച്ചി ഇക്കോ ചാലഞ്ചിന്റെ വിജയികളെ പ്രഖ്യാപിച്ചു. ഹൈസ്കൂൾ വിഭാഗത്തിൽ ഭവൻസ് വിദ്യാമന്ദിർ, എളമക്കര, ചിൻമയ വിദ്യാലയ, വടുതല, ഭവൻസ് വിദ്യാമന്ദിർ, ഗിരിനഗർ എന്നിവ യഥാക്രമം ആദ്യ 3 സ്ഥാനങ്ങൾ നേടി. ഹയർ സെക്കൻഡറി വിഭാഗത്തിൽ ഭവൻസ് വിദ്യാമന്ദിർ, എരൂർ, ഭവൻസ് ആദർശ വിദ്യാലയ, കാക്കനാട്, ഗവ. റീജനൽ ഫിഷറീസ് ടെക് ആൻഡ് വിഎച്ച്എസ്എസ് തേവര എന്നിവ ആദ്യ 3 സ്ഥാനങ്ങൾ കരസ്ഥമാക്കി. കോളജ് വിഭാഗത്തിൽ ഗവ. ലോ കോളജ്, എറണാകുളം, എസ്എച്ച് കോളജ്, തേവര, മഹാരാജാസ് കോളജ്, എറണാകുളം എന്നിവ ആദ്യ 3 സ്ഥാനങ്ങൾ നേടി. ഇക്കോ ചാലഞ്ചിന്റെ ബ്രാൻഡ് അംബാസഡർമാരായ ഇന്ദ്രജിത്തും പൂർണിമയും ചേർന്നു സമ്മാനങ്ങൾ വിതരണം ചെയ്തു.

മേയർ എം. അനിൽകുമാർ അധ്യക്ഷത വഹിച്ചു. കോർപറേഷൻ സ്ഥിരം സമിതി അധ്യക്ഷരായ വി.എ. ശ്രീജിത്ത്, എം.എച്ച്. എം. അഷറഫ്, പി.ആർ. റെനീഷ്, ഷീബ ലാൽ, പ്രിയ പ്രശാന്ത്, കൗൺസിലർമാർ, ഉദ്യോഗസ്ഥർ എന്നിവരും ഡിഇഒ ടി.ആർ. ഓമന, സെന്റ് തെരേസാസ് കോളജ് പ്രിൻസിപ്പൽ ഡോ. ലിസി മാത്യു, ഡോ. നിർമല പത്മനാഭൻ, ഡോ. സൂസൻ മാത്യു, സി-ഹെഡ് ഡയറക്ടർ ഡോ. രാജൻ, ഡോ. സി.ജെ. അലക്സ് എന്നിവർ പ്രസംഗിച്ചു.

KOCHI ECO-CHALLENGE PROJECT PROPOSALS

For Kochi Eco Challenge Project, 28 entries were received from different schools and institutions under the categories A, B and C.

The entries were separated into three categories. Category A comprised students from Class VI to X, while Category B includes Higher Secondary students. Category C is exclusively for college students. Prize winners in each category are:

Category A

- Bhavan's Vidyamandir, Elamakkara : Eco-geriatric park by converting the Nakshatra Vanam project that was stopped mid-way
- Bhavan's Vidyamandir, Girinagar : Cleaning of the Perandoor canal
- Management of Market Waste
- Chinmaya Vidyalaya, Vaduthala : Modification of Mangalavanam
- Bhavan's Vidyamandir, Eroor : Rejuvenation of the environment and economic uplift of the local community in Vyttila

Category B

- Bhavan's Vidyamandir, Eroor : Vennala eco-reserve and National Park
- GRFTVHSS, Thevara : Water Bin project to save Vembanad lake from plastic
- Revival of Edappally Canal and mosquito control
- Bhavan's Adarsha Vidyalaya, Kakkanad : Restoration of Marine Drive

Category C

- Government Law College, Ernakulam : Sea Bin project
- SH College, Thevara : Restoration of Kochi lake by using water hyacinth to make biogas

The Project Proposals are as follows:

- WASTE MANAGEMENT

Students of Bhavan's Vidya Mandir, Girinagar initiated a program with the main aim to reuse waste from markets and convert them into usable substances. Waste from the markets is collected and taken to our project site where these wastes will be converted into usable substances. For this purpose, 62 cent land near Palarivattom Bypass, near Palarivattom Bridge was chosen.

Aditi AR, Nandita S Raghunath, B Devananda and Gayathri S Menon were the students who participated.




- ECO GERIATRIC PARK

Eco Geriatric Park is an initiative proposed and initiated by Bhavans Vidya Mandirr, Elamakkara with the aim to protect and preserve the immune nature of neglected and abandoned landmasses in the district, and turning them into recreational parks and spaces. Students and teachers will together be working for this by finding suitable swampy lands and scientifically converting them into this development program.

Aims of the project:

1. Reconstruct abandoned land masses in public places in useful ways.
2. Revive halted and neglected projects.
3. Eco-friendly beautification by sustaining organic potential.
4. Involve the public and local residents in the project by organising awareness programs.
5. Ensure active participation of students in environment protection and national development.




- COMMUNITY DEVELOPMENT

The aim of this project is to sensitize the people of Kochi about the mosquito problem and make everyone contribute their share inorder to eradicate the mosquito problem in Kochi within a short span of time.

“The dream of a Kochi without mosquitoes, will become a reality through this,” Kochi Mayor Advocate M Anil Kumar said about the project. As part of the project, the local body states that it has also distributed pamphlets to houses on awareness about mosquito eradication.

- **Vennala Eco Reserve and Nature Park**

The project is titled ‘Vennala Eco Reserve and Nature Park’ and it belongs to category B. This project was done by Bhavan’s Vidya Mandir, Eroor. The quarry which was abandoned can be utilized for rainwater harvesting and supply water to the public for drinking purposes and its surrounding area will be modified to attract various species of birds and also serve as an important habitat for various amphibians.The group members are Adithya C Bose, Adwith C A, Aishwarya Shibu, Anna Zachriya, Arya P A, Devadathan K, Jagath Jeevan, Mrithul K S, Nanditha K N, Nikhil Raj, Shivani Ashiq Sanjeev, Siddharth S.

- **Marine Drive**

The project is titled ‘Restoration of the Marine Drive walkway’ belongs to category B. This project was done by Bhavan’s Adarsha Vidyalaya. It lacks a waste management system because of this the Marine drive faces land pollution and clogging in drains and so on. These all have to be improved by implementing various strategies.The group members include Gouthami Unnikrishnan(XI), Athira M(XI), Prinitha P(XI), Aaditya Dinesh(IX), Aadhil Akbar(IX), Bharath Satheesan(VIII).

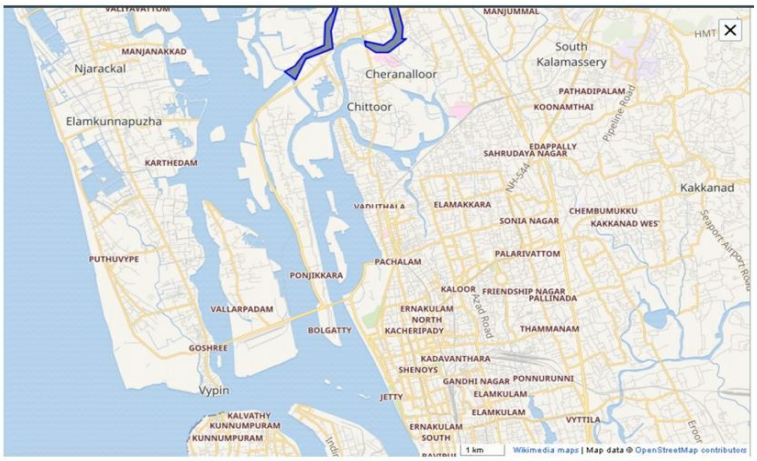
- REVIVAL OF EDAPPALLY CANAL

As part of the Kochi Eco Challenge, students of St.Teresa's College Ernakulam are presenting a minimum budget proposal for the revival of the currently polluted Edappally Canal and converting it as a potential source of water supply, industrial processes,agricultural uses, tourism etc. The team members are Abinanda K, Akshata, K A Amrita Menon, Ananya Prasad, Anaswara, Armitage V Prabhu,Avantika Vinod, Manoj Krishna Kunnathoor, Niranjan R, Parvati S, Sreenandana Vinoj, Zaima.

- COMMUNITY DEVELOPMENT THROUGH ECOSYSTEM RESTORATION

As part of the Kochi Eco Challenge, students of St.Teresa's College Ernakulam are presenting a minimum budget proposal for the Restoration of Mangroves in Chittoor which were lost as a result of developments in the area. This led to water scarcity and water salinity in the area. These problems can be reversed by restoring the Mangrove Plantations.

The team members are Ardra C Subash, Andriya Jimmy, Archana, Arjun V Ramprasad, Samantha Mary Vaz, Saniya Robert.



- ANIMAL FRIENDLY PARK

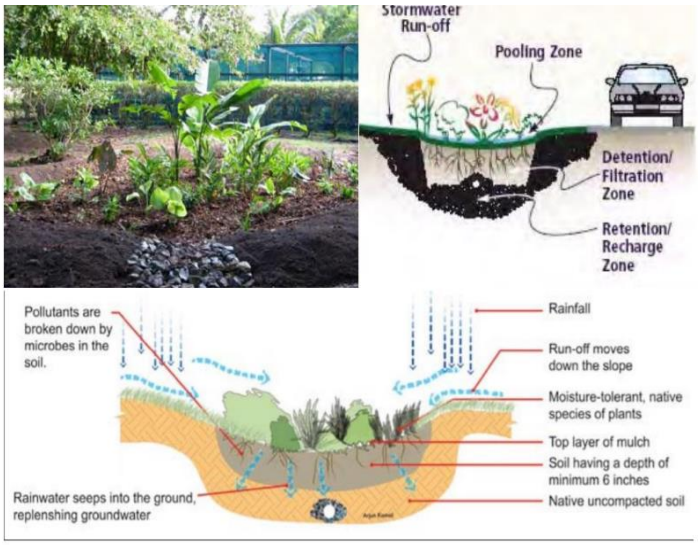
As part of the Kochi Eco Challenge, students of St.Teresa's College Ernakulam are presenting a minimum budget proposal for the conversion vacant lands in Thevara to Animal Friendly Parks by clearing the wastes from the area, clearing out weeds and unwanted forests, digging out unfertile soil

etc. This will aid in putting vacant lands to productive uses.The team members are Cheryl Ann Samuel, Hana Habeeb, Pearl Merin, Angeline R Gregory.

9. SHIFTECO - OUR STEP TOWARDS GREENER FUTURE (Category B)

Shifteco is a proposal for the Kochi Eco-challenge project by the students of Bhavan's Adarsha Vidyalaya, Kakkanad. The main aim is to promote the use of sustainable goods and make a healthy ecosystem in areas that come under the Kochi Municipal Corporation. Shifteco also prioritises spreading awareness among people about the consequences of environmental degradation. The team members are Alka R Nair, Manoj Krishna Kunnathoor, Nandakishore A, Nirupama N, Devika Vijay, Prajwal V Shylan, Aryan P Nair, Mythili Manoj, Amogh D Nair, Riya Rajesh, Vyshnavi Harish.

Video created by students: https://drive.google.com/file/d/1P3KgSKZCR50_R2GPOXKH4Ftu1ShLYq5m/view?usp=sharing



- **KOCHI ECO CHALLENGE – A DETAILED STUDY ON AN ECO-FRIENDLY APPROACH TO CONTROL THE AFRICAN SNAIL MENACE (Category B)**

Through this project the students conducted a detailed study on the African Snail Menace and tried various eco-friendly approaches for controlling it. The students of Bhavan's Adarsha Vidyalaya, Kakkand participated in this challenge. The African snails are a highly invasive species and are considered a menace to the people. The students used various baits like Banana and Papaya trees and compared their efficiency in attracting the African Snail. Later they also detail numerous ways in which the African Snail can be used after capture. The team members are 1. Ardhra Arunkumar, Vishnu Mahesh, Atheetha Sunil, Thomas Cherian, Amana Raihan A A, Namita Vinod.

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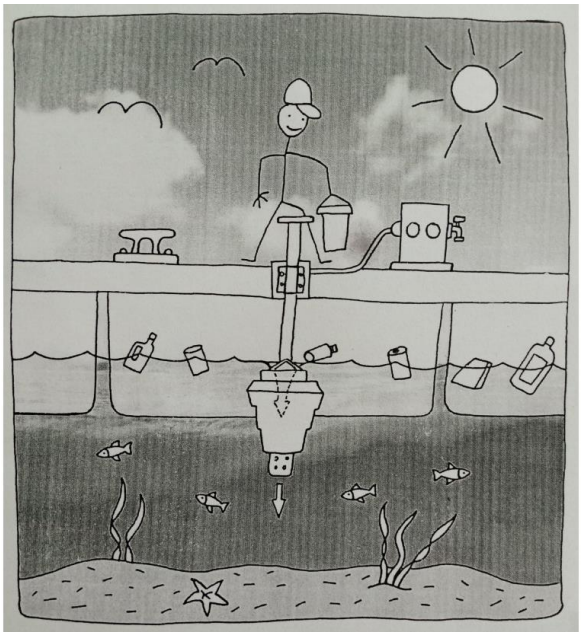
- WATER BIN PROJECT: TO SAVE VEMBANAD LAKE FROM THE CLUTCHES OF PLASTICS (Category B)

The Water Bin Project is a project put forward by the students of Government Regional Fisheries VHSS, Thevara to save the Vembanad Lake from being congested by plastic waste. Plastic waste is a major threat to water bodies and the aquabin is an innovative strategy to help combat this threat. The aquabin is a sustainable floating garbage bin that can collect water-born plastics and other run-off plastics. The team members are Nirmal Don and Jobin K Rajan.



- Removal of Microplastics using Electrocoagulation method

Microplastics are a growing problem and need to be addressed urgently to safeguard the health of the society. Traditional methods don't prevent the entry of MP to the environment. In countries like India, microbeads are produced for household items..This innovation uses household materials to control the issue of MP at family level. Electrocoagulation methods can be used to effectively reduce the concentration of MP in grey water. Environment friendly technology with recyclable energy options. Collected MP can be recycled as is done for other plastic materials.

- ECO CHALLENGE

The site is an empty field situated to the right of the Vytilla hub, behind the Vytilla metro station, and opposite of the Subramanya temple.The current situation there is exactly the same as other plain lands, unused. The place shows the properties and values to become a very useful place for the public and also profitable work for the government. The place feels like it has been abandoned or deserted. Just like how we admire other places, a huge development is needed to change how this place looks. The idea is to restore a place that has been left deserted. The place indeed will be a great attraction because of its location near one of the largest bus stands in Kerala. The infrastructure that we are recommending to build is an urban park which includes things such as a small community hall, children's play area, gym, track.

- THE PILLARS OF KOCHI METRO

Among the 2,829 cement pillars that hold the metro railway is the sight that follows us throughout a whole ride. It is a thing that catches our eye, being able to transform it to a point where the pillar does not have to be just a pillar. According to the Kochi metro, every 6th pillar in the pillars will be covered with a vertical garden and irrigated through drip irrigation, and used biodegradable waste instead of soil. Kochi Eco challenge

- Mangalavanam- The lungs of Kochi

The project proposal is made by team Mangalavanam of Chinmaya Vidyalaya, Vaduthala. The team consists of 4 members- Anjana A, Devu Nandhana B, Meenakshi V nair and Vaishnavi Venugopal.

- Cochin Corporation Seabin Project

The project proposal is made by a team consisting of 24 members from His Highness the Maharaja's Government Law College, Ernakulam. The team members are Vishnuprasad N K, Joel Reji Mathew, Liz Arackal, Suresh, Aamina Rafeek, Vismaya Jayaraj, Manzoor Ali, Prashanth S K, Aditya Sahadevan, Kezia John, Sherin Davis, Muhammad Ajmal K K, Bhagya, Anaswara, Sherin Farsana, Radhika, Anjitha, Anju, Kamala Gayatri, Swathi, Nandana, Dhiya, Ramitha and Haripriya.

- Regeneration of original biodiversity.

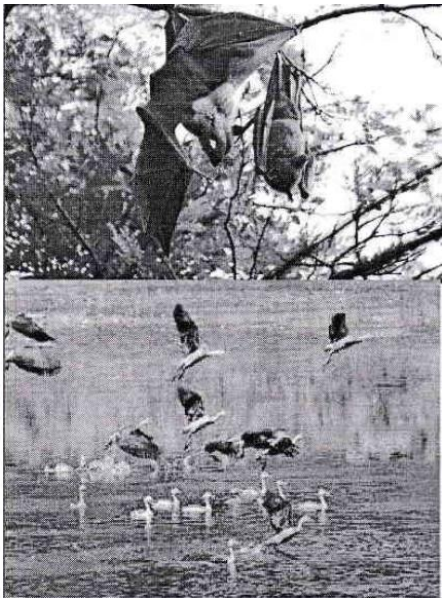
The project proposal is made by a team of 3 members from Maharaja's College, Ernakulam. D Delilah, R V Reshma, Sneha Gopinath are the team members.

- Water hyacinth into biogas - Project

The project proposal is made by a team of 4 members from Sacred Heart College, Thevara. The team members were Maria Prince, Nanditha, Anandhu B, Rohan.

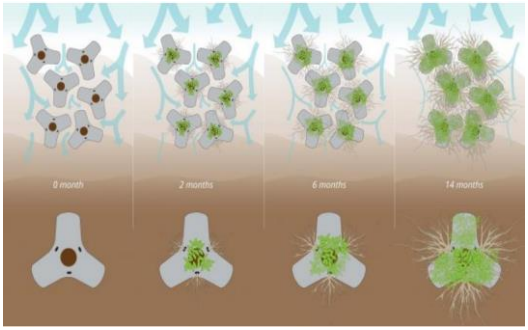
- PROTECTION OF MANGALAVANAM BIRD SANCTUARY

The project put forward by Bhavan's Munshi Vidyashram initially in January 2018 in the Mangalavanam Bird Sanctuary aimed to protect species from endangered and extinction. Furthermore, it addressed the water pollution resulting in fosteration of ecological balance as well as creating the sanctuary a healthier lung of Kochi. The members are Jeny. N. Benny ,Pavithra. N. Pradeep and Revathi. R. Menon.



- SEA-EROSION MANAGEMENT THROUGH INTEGRATION OF MANGROVES

The project undertaken by the Toc H Public School, Vytilla in October 2021 explored the opportunity of building resilience from extreme weather conditions in the coastal areas by employing mangrove tetrapods. The approach initiated by them will surely create a long-lasting natural sea defence mechanism by growing trees and roots and gradually will act as an aid in the sea-erosion. The team members are Ryan Varghis Mathews, Shaun George Anil, Rohan Georgy Manoj and Jeevan Biju Korah.



RECOGNITION AS A PARTICIPANT UNEP STAKEHOLDER

St. Teresas College , Ernakulam was recognised as a participant stakeholder of the United Nations Environment Programme (UNEP). Special mentions were given to Dr. Nirmala Padmanabhan, the Extension Dean of the college and Dr.Jisha John, the Coordinator of this Collaborative Project with UNEP.

Our college has been recognised as a participant stakeholder of the United Nations Environment Programme (UNEP). We are among the 26 universities/ colleges selected from all over India.

STAKEHOLDER DIALOGUE REPORT

List of Participants

	UNIVERSITIES/COLLEGES
Dr Mahbubul Hoque	University of Science and Technology, Meghalaya
Prof Saroj K Nayak	Indian Institute of Technology (IIT), Bhubaneswar, Orissa
Prof. Naima Khatoon	Aligarh Muslim University, Aligarh, UP
Dr Bibhu P. Nayak	TISS, Hyderabad, Telangana
Dr Anandajit Goswami	Manav Rachna International University, Delhi NCR
Dr Shiju M. V.	Sai University, Chennai
Prof Omar Farooq	ZH College of Engineering and Technology, AMU, Aligarh, UP
Dr Gaurav Mishra	Development Management Institute, Patna, Bihar
Dr. Shirin Shikalgar	Symbiosis Community Outreach Programme and Extension, Pune
Dr Chubamenla Jamir	TERI SAS, Delhi
Dr Shruti Sharma Rana	TERI SAS, Delhi
Dr Astha Saxena	Ashoka University, Sonipat, Haryana
Dr Poonam Kumaria	Miranda House, Delhi
Dr Kawal Gill	Guru Gobind Singh Commerce College, Delhi
Dr V A V Raman	Shaheed Bhagat Singh College, Delhi
Prof Sam Placid	XLRI (Gurgaon)
Dr R Venkatraman	ICFAI (Law College)
Dr Ajay Pratap Singh	BHU, Banaras, UP
Dr Jisha John	St Teresa's College, Kerala ✓
Dr Maneesha Sudheer	Amrita Vishwa Vidyapeetham, Coimbatore
Dr Sreejith Kumar	Amrita Vishwa Vidyapeetham, Coimbatore
Dr Tanu Jindal	Amity University
Prof Eeshan Chaturvedi	Jindal University
Dr Kalpana Jayaraman	Stella Maris College Chennai
Prof Shamita Kumar	Bhartiya Vidyapeeth University, Delhi
Dr Mansee Bal Bhargava	Central University of Rajasthan, CEPT, TERI SAS

REPORT OF THE

WORKSHOP ON DEVELOPMENT AND POPULARIZATION OF ALTERNATIVES TO SINGLE USE PLASTIC, POPULARIZATION OF UPSCALING/ RECYCLING TEXTILE WASTE

&

ENERGY AUDIT

Funded by

Department of Environment and Climate Change

(Order No. D.O.E.C.C./ E1/1359/2021)

1. Sanction letter Number: **D.O.E.C.C./E1/1359/2021 dated 16-02-2022**
2. Name and address of Organization : Bhoomithra Sena Club, St. Teresa's College, Ernakulam
3. Amount Sanctioned: 1,20,000
4. Activities Approved:

Workshop on Development and Popularization of Alternatives to Single Use Plastic, Popularization of Upscaling/ Recycling Textile Waste		
	Item	**Amount Sanctioned (Rs)**
1	Honorarium for invited faculty	20,000
2	Resource Materials	5,000
3	Miscellaneous	10,000
	TOTAL	**35,000/-**

Workshop on Energy Audit		
No.	**Item**	**Amount Sanctioned (Rs)**
1	TA & Honorarium for invited faculty	40,000
2	Resource Materials/Publications	20,000
3	Miscellaneous	25,000
	TOTAL	**85,000/-**

5. Activities completed:

Sl. No.	Activity	Amount Utilized
1.	**Workshop on Development and Popularization of Alternatives to Single Use Plastic, Popularization of Upscaling/ Recycling Textile Waste.**	40,118
2.	**Workshop on Energy Audit**	85,000

Objectives:

• To protect the environment by reducing plastic / rexine waste.
• To provide sustainable employment opportunities for women.
• To popularize a green message by facilitating upcycling of textile waste.

Importance in State/Regional/Temporal context:

Billions of plastic bags are used globally per year which is reported to be a tremendous waste as very often they are only used once. Many end up in our oceans and seas. The report on sustainable development in Asia by Asian Development Bank (2017), reports that 10-15% of waste that reaches dumps for management is plastic waste of which carry bags are the main components. Since most of these are voluminous and soiled, recycling strategy is reported to be uneconomical. Thus, the best strategy in this context is recommended to be one of reduction. Reduction strategy has the added benefit of reduced use of petroleum and reduction in Carbon emissions in production of carry bags. Recognizing this, many countries have set clear reduction targets and projects. A worrying increase in plastic waste particularly plastic carry bags is reported even in rural areas in Kerala most of which is either burnt, thrown into water bodies or dumped in public places. The need of the hour is to make a strategic plan in the reduction of single use plastics within the state. In view of the same Society of Teresians for Environment Protection (STEP) and BMC of St. Teresa's College have conducted several training programmes and exhibitions over the last few years. In the course of this initiative, we have also emerged as major proponents of up-cycling tailoring waste in Kerala. This project is a further attempt in that direction to manufacture and popularize the use of ecofriendly alternatives to single use plastics and promote up-cycling of tailoring waste. The project also aims to promote empowerment through income generation for Kudumbasree women.

Topics covered:

• Alternatives to Plastic Carry Bags/Pouches: Stitching of ordinary sanchis, Ball Bag, Strawberry Bag, Zip Bags (Small, Medium, Large) which serve as alternatives to plastic carry bags.
• Ecofriendly sanitary napkins, diapers: Stitching of eco-friendly sanitary napkins and diapers

Society of Teresians for Environment Protection (STEP) and **BMC** of St. Teresa's College was able to conduct three training programmes to make ecofriendly alternatives to plastic carry bags. Training was given to Kudumbashree members in three batches. The participants of all the three

batches were given training to make ball bags, strawberry bags, zip bags, cloth sanitary pads and diapers.

Batch 1

Dates of training: 28-02-2022, 07-03-2022, 08-03-2022, 09-03-2022
Number of Participants: 6
Venue: STEP Training Centre, St. Teresa's College.

Master trainers:

1. Smt. Thasneem K. S. (Member of Kudumbasree and Master Trainer for STEP)
2. Ms. Sandra Mariya K.P. (Alumni, St. Teresa's College, Ernakulam)

List of Participants

Sl. No:	Name of Kudumbashree members	Panchayath/ Kudumbashree unit
1.	Deepthi C.M.	Cochin Corporation, Div 54
2.	Sheeja T.K.	Cochin Corporation, Div 65
3.	Ansy Biju	Edappally NHG 18, Div 39
4.	Niney Jose	Cochin Corporation, NHG 28, Div 39
5.	Teney Varghese	Cochin Corporation ,NHG 1, Div 31
6.	Manju	Cochin Corporation, Div 69

Batch 2

Dates of training: 10-03-2022, 11-03-2022, 14-03-2022
Number of Participants: 17
Venue: STEP Training Centre, St. Teresa's College

Master trainers:

1. Smt. Thasneem K. S. (Member of Kudumbasree and Master Trainer for STEP)
2. Ms. Sandra Mariya K.P. (Alumni, St. Teresa's College, Ernakulam)

List of Participants

Sl. No:	Name of Kudumbashree members	Panchayath/ Kudumbashree unit
1.	Julie George	Elakunnapuzha
2.	Vinitha Anish	Elakunnapuzha
3.	Shini P.S	Elakunnapuzha
4.	Ajitha Sabu	Elakunnapuzha
5.	Rejeena Suresh	Elakunnapuzha
6.	Sabi Antony	Elakunnapuzha
7.	Rincy Vinod	Elakunnapuzha
8.	Agnus Asha	Elakunnapuzha
9.	Rosily Jomon	Elakunnapuzha
10.	Leelamma John	Elakunnapuzha
11.	Mini Xavier	Elakunnapuzha
12.	Josephine DSilva	Cochin Corporation, Matha Kudumbashree
13.	Beena	Kadungallur,Kairali Kudumbashree
14.	Neeba Rafeeq	Kadungallur, Rainbow Kudumbashree
15.	Betsy Damson	Elakunnapuzha
16.	Suhaja Sundaran	N. Kadungallur, Sree Krishna Kudumbashree
17.	Vimala	N. Kadungallur,Nethaji Kudumbashree

Batch 3

Dates of training: 16-03-2022, 17-03-2022, 18-03-2022

Number of Participants: 8

Venue: STEP Training Centre, St. Teresa's College

Master trainers:

1. Smt. Thasneem K. S. (Member of Kudumbasree and Master Trainer for STEP)
2. Ms. Sandra Mariya K.P. (Alumni, St. Teresa's College, Ernakulam)

List of Participants

Sl. No:	Name of Kudumbashree members	Panchayath/ Kudumbashree unit
1.	Sheeba	Kumbalangi, Dauthya Kdumbashree
2.	Rexy Babu	Kumbalangi, Sneha Kudumbashree
3.	Nysha Jolly	Kumbalanghi, Thapasya Kudumbashree
4.	Sindu Suresh	Kumbalangi, Jyotsana Kudumbashree
5.	Deepa Manoj	Kumbalangi, Chaithanya Kudumbashree
6.	Priya Santhosh	Mulavakkadu ,Varada Kudumbashree,
7.	Jessy Joy	Kumbalanghi, Chaithanya Kudumbashree
8.	Valarmathy	Munnar Colony, Catherine Unit

ENERGY AUDIT REPORT OF GOVERNMENT OFFICES AT KUMBALANGI GRAMA PANCHAYAT

INTRODUCTION

ABOUT ST. TERESA'S COLLEGE (AUTONOMOUS), ERNAKULAM

St. Teresa's College is a minority institution of higher learning for women established in 1925 by the Carmelite Sisters of St. Teresa, CSST. It has the credit of being the first aided women'scollege in the state of Kerala, which is affiliated to Mahatma Gandhi University, Kottayam.As recognition of high standards was maintained, the UGC granted the college autonomy in 2014,which gave it the credit of being the first autonomous women's college in Kerala. The college is ISO certified and was accredited by NAAC with A ++ (CGPA 3.57) in 2019 in the fourth cycle. The college was ranked to 45 in NIRF ranking in 2021.

This 96 year old institution is committed to enrich the lives of its students by providing holistic education that enables them to actively participate in community life and empower them to respond proactively to concerns and conflicts inherent in today's world.

The College offers 57 programmes in Arts, Science, Commerce and Management streams which include 25 UG, 23 PG, 3 M. Phil, 5 UG Diploma and 3 PG Diploma programmes. The college also offers Ph. D. programmes in seven disciplines and 29 Add-on courses are also introduced to impart job skills to the students. Situated in the heart of the city of Kochi, the College has 4007 students, 213 teaching faculty and 67 non-teaching staff at present.

ABOUT ENERGY CONSERVATION SOCIETY

Energy Conservation Society (ECS) is a premier non-governmental voluntary organization committed to the cause of promoting Energy Conservation Environment Protection and sustainable Development in the country. ECS was formed on July 8, 1992 at Thiruvananthapuram, Kerala and has now more than 2400 numbers of life members.

OBJECTIVES OF ENERGY AUDIT

An energy audit is a key to assessing the energy performance of facility and for developing an energy management program. The typical steps of an energy audit are:

- Preparation and planning
- Data collection and review
- Plant surveys and system measurements
- Observation and review of operating practices
- Data documentation and analysis
- Reporting of the results and recommendations

Definition of energy auditing

In the Indian Energy Conservation Act of 2001 **(BEE 2008)**, an energy audit is defined as: **"The verification, monitoring and analysis of the use of energy and submission of technical report containing recommendations for improving energy efficiency with cost-benefit analysis and an action plan to reduce energyconsumption."**

Objectives of Energy Auditing

The objectives of an energy audit can vary from one plant to another. However, an energy audit is usually conducted to understand how energy issued within the plant and to find opportunities for improvement and energy saving. Sometimes, energy audits are conducted to evaluate the effectiveness of an energy efficiency project or program.

Methodology for the study

The methodology adopted for energy audit starts from historical energy data analysis, power quality analysis, monitoring of operational practices, system evaluation, cost benefit analysis of the energy conservation opportunities, and prepare plan for implementation. The proposals given in the report includes economical energy efficiency measures to reduce facilities unnecessary energy consumption and cost. The energy conservation options, recommendations and cost benefit ratio, indicating payback period are included in this report.

Scope of Work

The Scope of Work includes:

1. Historical energy data analysis.
2. Analysis of single line diagram
3. Identification of Energy saving opportunities.
4. Cost Benefit Analysis.

Background:

Energy is a basic requirement for economic development in almost all major sectors of Indian economy i.e. agriculture, industry, transport, commercial, residential (domestic) and educational institutions. Consequently, consumption of energy in different forms has been steadily rising all over the country, which has maintained a steady growth pattern in the past and the trend is likely to continue in future as well. This has increased the dependence of the state on fossil fuels and electricity. The Government of India enacted the Energy Conservation Act, 2001 in October 2001. The Energy Conservation Act, 2001 became effective from 1st March, 2002. The Act provides for institutionalizing and strengthening delivery mechanism for energy efficiency programs in the country and provides a framework for the much-needed coordination between various Government entities.

Activities performed:

St. Teresa's College (Autonomous), Ernakulam is committed to fulfill the vision of its foundress to offer sustainable livelihoods, enhancing people's well-being through knowledge, innovation and transformative actions. Apart from BMC, TROP (Teresian Rural Outreach Programme), NSS, NCC and YRC (Youth Red Cross) activities, the college organizes and implements its energy related extension activities under ICONNECT (Initiatives for conservation of nature and energy coordinated by Teresians).

As a part of the project titled "Workshop on Energy Audit" funded by Department of Environment and Climate Change, Government of Kerala, Team ICONNECT decided to conduct the energy auditing of Panchayat/Government offices in Kumbalanghi Grama Panchayat in Ernakulam District with technical assistance from Energy Conservation Society, Kerala and Athul Energy Consultants Private Limited, Kerala.

To conduct the energy audit, the audit team comprising of student members of ICONNECT and teachers visited the panachayat offices during the months of February and March 2022 to collect data and to take measurements for assessment of different energy consuming components. Following persons participated in the data collection phase of the project : Ms. Sreeranjini Pai (ICONNECT student member), Ms. N Sornamuhi (ICONNECT student member), Ms. Nandana S. (ICONNECT student member), Ms. Aadiya Salbi (ICONNECT student member), Ms. Aleena N. Thomas (ICONNECT student member), Ms. Irin Meleth (ICONNECT student member), Ms. Mareena T. S. (ICONNECT student member), Ms. Reshma (ICONNECT student member), Dr. Mary Vinaya (Asst. Professor, Dept. of Physics), Dr. Mariyam Thomas (Asst. Professor, Dept. of Physics)and Smt. Susan Mathew (Asst. Professor, Dept. of Physics).. Data analysis and preparation of energy audit report of were jointly done by Team ICONNECT, ECS and Athul Energy Consultants Pvt. Ltd.

Energy auditing of following Government offices were executed and reports are prepared:

- **Community Health Center, Kumbalangi Panchayat**
- **Government Veterinary Hospital, Kumbalangi Panchayat**
- **Government Ayurveda Dispensary, Kumbalangi Panchayat**
- **Government Homeo Dispensary, Kumbalangi Panchayat**
- **Government Agricultural Office, Kumbalangi Panchayat**
- **IP Block, Kumbalangi Panchayat**
- **Public Health Wing, Physiotherapy Center and Pharmacy Block, Kumbalangi Panchayat**
- **Sahakarana Sadanam, Kumbalangi Panchayat**

Work included the following : assessment of actual operating load and scope for optimizing the same, review of present electrical load in the campus, assessment of building wise electrical load base on electrical fittings, illumination study and energy conservation option in lighting system, review of

present lighting system, lighting inventories etc., estimation of lighting load at various locations like different building floor, corridor, rooms etc., outside light and other important locations as mentioned by the staff, detail lux level study at various locations and comparison with acceptable standards, study of present lighting system and recommendation for improvement, exploring energy conservation options in lighting system, energy Conservation in Air-Conditioning and water pumping system, observation and energy conservation, exploring Energy Conservation Option (ENCON) in system.

Methodology adopted for building audit:

Step 1 - Interview with Key Facility Personnel:

During the preliminary audit, a meeting was scheduled between the auditors and key operating personnel to start the assignment. The meeting agenda focused on: audit objectives and scope of work, facility rules and regulations, roles and responsibilities of project team members, and description of scheduled project activities. During this meeting the team enlightened about operating characteristics of the facility, energy system specifications, operating and maintenance procedures.

Step 2 - Facility Tour:

After the initial meeting, a tour of the facility is arranged to observe the various operations, focusing on the major energy consuming systems identified during the interview, including the building structure, lighting and power, mechanical energy systems.

Step 3 - Document Review:

During the initial visit, available facility documentation are reviewed with facility representatives. This documentation review includes all facility operation and maintenance procedures and logs – sheets/ registers for the previous years.

Step 4 - Facility Inspection:

After a thorough review of the construction and operating documentation, the major energy consuming processes in the facility are further investigated. Where appropriate, field measurements are collected to substantiate operating parameters.

Step 5 - Utility Analysis:

The utility analysis is a detailed review for the previous months. Data reviewed includes energy usage, energy demand and energy consumption pattern.

Step 6 - Identify/Evaluate Feasible ECMs:

Based upon a final review of all information and data gathered about the facility, and based on the measurements, final energy conservation measures are developed.

Step 7 - Prepare a Report:

Summarizing Audit Findings The results of our findings and recommendations are summarized in this report. The report includes a description of the facilities and their operation, a discussion of all major energy consuming systems, a description of all recommended ECMs with their specific energy impact, implementation costs, benefits and payback. The report incorporates a summary of all the activities and effort performed throughout the project with specific conclusions and recommendations and ECMs – Energy Conservation Measures.

Interviewing panchayat officials, facility inspection, utility analysis, evaluation of energy measures etc were done on 23rd to 25th of February 2022. Preparation of auditing report, printing of the materials, final checking of facilities etc were carried out from 3rd to 16th of March 2022.

The project titled “Workshop on Energy Audit” is successfully completed and all of its objectives mentioned in the corresponding proposal submitted to DoECC are met. The fund allotted by Department of Environment and Climate Change for this project is Rs. 85,000/-. The expenditure statement of the same, duly certified utilization certificate and the energy audit report (course material) are submitted along with this report.

BRIEF DESCRIPTION

ABOUT Kumbalanghi GRAMA PANCHAYAT

Kumbalangi is an island village in the outskirts of Kochi city in the state of Kerala, India. Situated amidst backwaters, around 12 km (7.5 mi) from the city centre, Kumbalangi is a major tourist attraction and is famous for its Chinese fishing nets. Kumbalangi is the first eco-tourism village in India. The main occupation in Kumbalangi is fishing, and there are over 100 Chinese nets in the backwaters that face the village. Groves of mangroves separate the land from the water, providing a breeding ground for prawns, crabs, oysters and small fishes. It is home to fishermen, farmers, labourers, toddy tappers and coir spinners.

This Panchayat with 17 wards is and Palluruthy Block Panchayat, having population of nearly 30000 persons residing in 7000 households.

ENERGY AUDIT REPORT OF COMMUNITY HEALTH CENTER, KUMBALANGI PANCHAYAT

BASIC DATA

The general details of the Panchayath building are given below in table

TABLE 1: BASIC DATA SHEET

SL. NO	PARTICULARS	DETAILS
1	Name of Building	Community Health Centre
	Name of Grama Panchayat/ Block Panchayat/ Municipality office	Kumbalangi Grama Panchayat
3	Name of the Assembly Constituency	Kochi
4	District	Ernakulam
5	Address	Community Health Centre Kumbalangi Grama Panchayat
6	Building area (Sq. M)	47
7	Number of persons working	7

TABLE 2: BUILDING DETAILS

Sl No.	Items	2021 - 22
1	Name of Building	Community Health Centre
2	KSEBL Consumer No:	1155612002968
3	KSEBL Section Office:	Palluruthy
4	Connected Load (kW)	1
5	Annual electricity consumption of the office building (kWh)	1056
6	Total built up area of Office Building (Sq.m)	47
7	Specific Energy Consumption (kWh/ Sq.m/year)	22.5

ENERGY SAVING PROPOSALS

The following table shows the energy saving proposals

TABLE3: ENERGY SAVING PROPOSALS

Sl. no	Energy conservation measures	Annual Energy Savings	Annual Financial Savings	Investment	Simple payback period
		kWh	Rs	Rs	Months
1	Replacement of 04 ceiling fan (60W) with BEE star rated or above (28 W)	384	2688	17500	78
2	Replacement of 4 No:T8, T-12 Tube lights with LED tube (20 W)	346	2422	2000	10
	Total	730	5110	19500	47

The Bimonthly energy and fixed charges represented in Figure below.

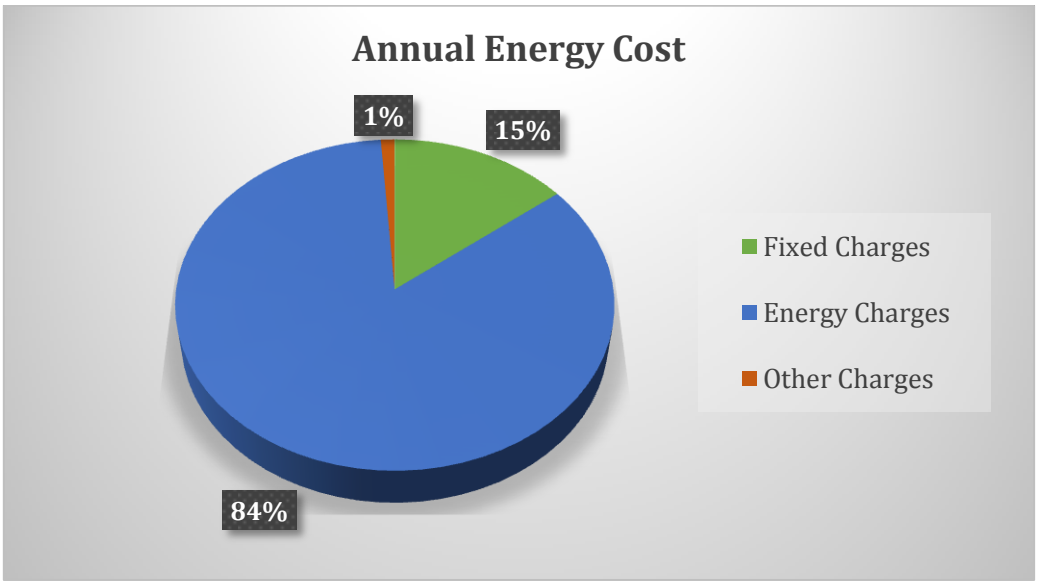


TABLE 4: BILL DETAILS

Month	Bi Monthly consumption (kWh)	Average consumption (kWh)	Fixed charges (Rs)	Energy charge (Rs)	Meter rent (Rs)	Duty (Rs)	GST(Rs)	Total amount to be paid (Rs)
Jann-22	133	176	195	1100	15	110	1	1422

ENERGY AND UTILITY DESCRIPTION

1. ELECTRIC CONSUMPTION DATA

TABLE 5: BASELINE DETAILS-ELECTRICITY

Sl. No.	Items	2021 - 22
1	Name of Building	Community Health Centre
2	KSEBL Consumer No:	1155612002968
3	KSEBL Section Office:	Palluruthy
4	Tariff	LT-6A/Single
5	Sanctioned Load (kW)	1
8	Annual electricity consumption of the office building (kWh)	1056
9	Annual Energy cost (Rs)	8532

ENERGY PERFORMANCE INDEX (EPI)

EPI is based on the energy consumption The futuristic energy consumption after the implementation of energy saving proposals is given in the tables below.

TABLE 6: ENERGY INDEX

Parameters	Values
Present Annual electricity consumption(kWh/year)	1056
Present annual specific electricity consumption (kWh/m2/year)	22.5
Present CO_2 emission (Kg/year)	834
After Energy Saving Implementation	
Expecting annual electricity consumption (kWh/year)	326
Expecting annual specific electricity consumption (kWh/m2)	6.9
Carbon Dioxide emission Kg/Year	258

CONNECTED LOAD DETAILS

LIGHT AND FAN LOADS

Effective lighting is essential for building area to carry out their work properly, yet it is possible to achieve significant savings in this area and improve the quality of the lit environment. Goodlighting design can reduce costs and have the added benefit of decreasing internal heat gains. The ceiling fan is the most commonly used ventilation equipment in the building. The connected load details of light and fan are given in the table below.

TABLE 7: LIGHT & FAN LOADS

Particulars	LED 9W	T5	T8	T12	LED TubeW	C FAN	Water Purifier
Watts	9	28	36	40	20	60	20
Total Nos	4	1	4	8	2	11	1
Total Power(W)	36	28	144	320	40	660	20
Grand Total in kW	**1.248**						

COMPUTER AND OTHER ELECTRONIC LOADS

This section gives the connected load details of computer and other miscellaneous office loads in the Panchayat building. The following table shows the load details of general appliances.

TABLE 8: COMPUTER AND OTHER ELECTRONIC LOADS

Particulars	PC	PRINTER	Fridge	Lab equipment's	Water PUMP motor
Watts	150	150	200	500	750
Nos	3	3	1	1	1
Total (W)	450	450	200	500	750
Grant Total in kW	**2.35**				

ANNEXURE-1

ENERGY SAVING PROPOSAL – 1

REPLACEMENT OF CEILING FANS ENERGY EFFICIENT BLDC/BEE STAR RATED FANS

Background

A BLDC fan takes in AC voltage and internally converts it into DC using SMPS. The main difference between BLDC and ordinary DC fans is the commutation method. A commutation is basically the technique of changing the direction of current in the motor for the rotational movement. In a BLDC motor, as there are no brushes, so the commutation is done by the driving algorithm in the Electronics. The 1200 mm size BLDC fan at dull speed consumes only around 22 to 27W instead of the present ceiling fan with induction motors that take 60 to 75W as per the manufactures.

BEE star rated fans consumes around 35W in full speed in 1200mm blade size.

Proposal

Replace the ceiling fans with BLDC/ BEE star rated fans in all the areas especially at the Dormitory and office. The calculation for the savings is given in the table below. The below table shows the replacement with BLDC and BEE star rated ceiling fans which will give the cost comparison between them. The Panchayat can opt for best option among them.

TABLE 9: ENERGY SAVING PROPOSAL-1

Particulars	Unit	With BEE star rated 4 or 5
Power of existing ceiling fans at full speed	Watts	60
Power of replacing fan	Watts	28
Difference in Wattage	Watts	32
Avg No: of working hours/day	Hrs	8
No: of working days per year (Average)	Nos	300
No: of working hours per annum	Hrs	2400
Number of Ceiling Fans operating	Nos	5
kWh Saving per Annum	**kWh**	384
Cost per kWh (Average)	Rs	7
Annual Financial Savings	**Rs**	2688
Cost of replacing Fan per piece	Rs	3500
Investment for replacing Fan	**Rs**	17500
Simple Payback period	**Months**	78

REPLACEMENT OF FLUORESCENT TUBES WITH LED

Background

T5 tube lights consume majority of light loads and shall be replaced with LED tubes

Proposal

By replacing the light fitting with LEDs of appropriate ratings the power consumption will reduce considerably by approximate 50% with the present operating hours. The calculation for the savings, approximate investment cost and payback period is given in the table below.

PARTICULARS	UNIT	T8 TUBE	T-12 TUBE
Power of T5 Fluorescent lights	Watts	36	40
Proposed LED tube	Watts	20	20
Difference in Wattage	Watts	16	20
Avg No: of working hours/tube/day	Hrs	8	8
No: of working days per year (Average)	Nos	300	300
No: of working hours per annum	Hrs	2400	2400
Number of Lights operating*	Nos	4	4
kWh Saving per Annum	kWh	154	192
Cost per kWH (Average)	Rs	7	7
Annual Financial Savings	Rs	1078	1344
Cost of LED tube	Rs	250	250
Investment for LED lights	Rs	1000	1000
Simple Payback period	Months	11	9

Summary

PARTICULARS	UNIT	Total
kWh Saving per Annum	kWh	**346**
Annual Financial Savings	Rs	**2422**
Investment for LED lights	Rs	**2000**
Simple Payback period	Months	**10**

ANNEXURE-3

1. LED specification

The Department of Electronics and information technology issued "Electronics and information Technology goods order 2012" on 3rd October 2012 the following standards for LED lamps are covered.

1. IS 15885 (Part -2/section 13)
2. IS 16102 (Part-1): 2012

As per this order LED manufactures to get their product tested from BIS recognised labs.

Thus, the following electrical parameters and standards should ensure while purchasing LED in future based on the BIS standards. These are the minimum technical requirements for the acceptance of LED. Also, the LED test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 10: LED SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Light source	SMD LED chip	LM 80/IS 16106
2	System Efficacy	>= 110 lumen /watt	IS 16106:2012
3	LED Driver Efficiency	Minimum 85%	
4	Harmonics	Maximum 10%	IS 16102-2-2012
5	Power factor	Minimum 0.95	IS 16102-2
6	Frequency	50 Hz ±3%	LM-79 report
7	Operating voltage	110V – 320V	LM 79 report
8	Surge voltage	>4 kV	LM 79 report
9	Ambient temp	-10 to 50 ° C	LM 79 report
10	Degree of protection	IP 66	IS 10322
11	CRI	Minimum 70	IS 16102 - 2

2. BLDC specification

Normal trend of one ceiling fan working hours with present cost while replacing with BLDC fan and the payback period is given in below table.

Number of working hours/day for a single ceiling fan	**Hours**	9	10	11	12	13	14	15	16	17	18	19	More than 20
Simple payback period after replacement with BLDC	**Years**	5	5	4	4	4	3	3	3	3	3	3	2

The BLDC fan test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 11: BLDC SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Air delivery	215 CMM	IS 374 - 2019
2	Harmonics	Maximum 10%	IS 374 - 2019
3	Power factor	Minimum 0.95	IS 374 - 2019
4	Frequency	50 Hz ±3%	IS 374 - 2019
5	Insulation resistance	>2 MΩ	IS 374 - 2019
6	Speed	350 rpm	IS 374 - 2019
7	Maximum temperature rise	70 ° C	IS 374 - 2019
8	Degree of protection	IP 65	IS 10322

ENERGY AUDIT REPORT OF GOVERNMENT VETERINARY HOSPITAL KUMBALANGI

BASIC DATA

The general details of the Panchayath building are given below in table

TABLE 12: BASIC DATA SHEET

SL. NO	PARTICULARS	DETAILS
1	Name of Building	Veterinary Hospital
	Name of Grama Panchayat/ Block Panchayat/ Municipality office	Kumbalangi Grama Panchayat
3	Name of the Assembly Constituency	Kochi
4	District	Ernakulam
5	Address	Veterinary Hospital Kumbalangi
6	Total building area in Sq. M	110
7	Number of persons working	4

TABLE 13: BUILDING DETAILS

Sl No.	Items	2021 - 22
1	Name of Building	Veterinary Hospital
2	KSEBL Consumer No:	1155613001230
3	KSEBL Section Office:	Palluruthy
4	Connected Load (kW)	3
5	Annual electricity consumption of the office building (kWh)	672
6	Total built up area of Office Building (Sq.m)	110
7	Specific Energy Consumption (kWh/ Sq.m)	6.11

EXECUTIVE SUMMARY

ENERGY SAVING PROPOSALS

The following table shows the energy saving proposals

TABLE14: ENERGY SAVING PROPOSALS

Sl. no	Energy conservation measures	Annual Energy Savings	Annual Financial Savings	Investment	Simple payback period
		kWh	Rs	Rs	Months
1	Replacement of 2 ceiling fan (60W) with BEE star rated or above (28W)	154	1075	7000	78
2	Replacement of 17, T5 Tube lights (28W) with LED tube (20 W)	38	269	250	11
	Total	192	1344	7250	65

The Bimonthly energy and fixed charges represented in Figure below.

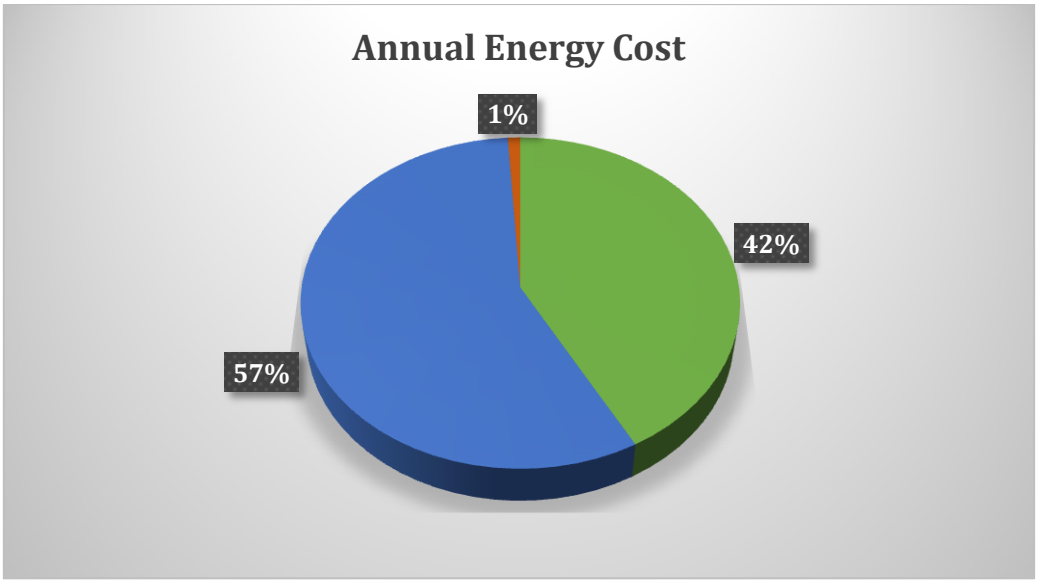


FIGURE 1: TARIFF RATE

TABLE 15: BILL DETAILS

Month	Bi Monthly consumption (kWh)	Average consumption (kWh)	Fixed charges (Rs)	Energy charge (Rs)	Meter rent (Rs)	Duty (Rs)	GST (Rs)	Total amount to be paid (Rs)
Jan-22	112	96	480	599	14	60	.15	1153

ENERGY AND UTILITY DESCRIPTION

3. ELECTRIC CONSUMPTION DATA

TABLE 16: BASELINE DETAILS-ELECTRICITY

Sl. No.	Items	2021 - 22
1	Name of Building	Veterinary Hospital
2	KSEBL Consumer No:	1155613001230
3	KSEBL Section Office:	Palluruthy
4	Tariff	LT-6B/Three
5	Sanctioned Load (kW)	3
8	Annual electricity consumption of the office building (kWh)	672
9	Annual Energy cost (Rs)	6918

ENERGY PERFORMANCE INDEX (EPI)

EPI is based on the energy consumption during Jan 2021- Nov 2021. The futuristic energy consumption after the implementation of energy saving proposals is given in the tables below.

TABLE 17: ENERGY INDEX

Parameters	Values
Present Annual electricity consumption(kWh/year)	672
Present annual specific electricity consumption (kWh/m2)	6.1
Present CO_2 emission (kg/year)	531
After Energy Saving Implementation	
Expecting annual electricity consumption (kWh/year)	480
Expecting annual specific electricity consumption (kWh/m2)	4.4
CO2 emission after implementation f proposals	379

CONNECTED LOAD DETAILS

LIGHT AND FAN LOADS

Effective lighting is essential for building area to carry out their work properly, yet it is possible to achieve significant savings in this area and improve the quality of the lit environment. Goodlighting design can reduce costs and have the added benefit of decreasing internal heat gains. The ceiling fan is the most commonly used ventilation equipment in the building. The connected load details of light and fan are given in the table below.

TABLE 18: LIGHT & FAN LOADS

Particulars	LED 9W	T8	LED tube	C FAN
Watts	9	36	20	60
Total Nos	2	1	2	4
Total Power(W)	18	36	40	240
Grand Total in kW	0.334			

COMPUTER AND OTHER ELECTRONIC LOADS

This section gives the connected load details of computer and other miscellaneous office loads in the Panchayat building. The following table shows the load details of general appliances.

TABLE 19: COMPUTER AND OTHER ELECTRONIC LOADS

Particulars	PC	PRINTER	IND COOK	Fridge	Motor formpump
Watts	150	150	1500	200	750
No's	1	1	1	1	1
Total (W)	150	150	1500	200	750
Grant Total	**2.75**				

ANNEXURE-1

ENERGY SAVING PROPOSAL – 1

REPLACEMENT OF CEILING FANS ENERGY EFFICIENT BLDC/BEE STAR RATED FANS

Background

A BLDC fan takes in AC voltage and internally converts it into DC using SMPS. The main difference between BLDC and ordinary DC fans is the commutation method. A commutation is basically the technique of changing the direction of current in the motor for the rotational movement. In a BLDC motor, as there are no brushes, so the commutation is done by the driving algorithm in the Electronics. The 1200 mm size BLDC fan at dull speed consumes only around 22 to 27W instead of the present ceiling fan with induction motors that take 60 to 75W as per the manufactures.

BEE star rated fans consumes around 35W in full speed in 1200mm blade size.

Proposal

Replace the ceiling fans with BLDC/ BEE star rated fans in all the areas especially at the Dormitory and office. The calculation for the savings is given in the table below. The below table shows the replacement with BLDC and BEE star rated ceiling fans which will give the cost comparison between them. The Panchayat can opt for best option among them.

TABLE 20: ENERGY SAVING PROPOSAL-1

Particulars	Unit	With BEE star rated 4 or 5
Power of existing ceiling fans at full speed	Watts	**60**
Power of replacing fan	Watts	**28**
Difference in Wattage	Watts	**32**
Avg No: of working hours/day	Hrs	**8**
No: of working days per year (Average)	Nos	**300**
No: of working hours per annum	Hrs	**2400**
Number of Ceiling Fans operating	Nos	**2**
kWh Saving per Annum	**kWh**	**153.6**
Cost per kWh (Average)	Rs	**7**
Annual Financial Savings	**Rs**	**1075.2**
Cost of replacing Fan per piece	Rs	**3500**
Investment for replacing Fan	**Rs**	**7000**
Simple Payback period	**Months**	**78**

REPLACEMENT OF FLUORESCENT TUBES WITH LED

Background

T5 tube lights consume majority of light loads and shall be replaced with LED tubes

Proposal

By replacing the light fitting with LEDs of appropriate ratings the power consumption will reduce considerably by approximate 50% with the present operating hours. The calculation for the savings, approximate investment cost and payback period is given in the table below.

PARTICULARS	UNIT	T8 TUBE
Power of T5 Fluorescent lights	Watts	36
Proposed LED tube	Watts	20
Difference in Wattage	Watts	16
Avg No: of working hours/tube/day	Hrs	8
No: of working days per year (Average)	Nos	300
No: of working hours per annum	Hrs	2400
Number of Lights operating*	Nos	1
kWh Saving per Annum	kWh	38.4
Cost per kWh (Average)	Rs	7
Annual Financial Savings	Rs	268.8
Cost of LED tube	Rs	250
Investment for LED lights	Rs	250
Simple Payback period	Months	11

ANNEXURE-3

4. LED specification

The Department of Electronics and information technology issued "Electronics and information Technology goods order 2012" on 3rd October 2012 the following standards for LED lamps are covered.

1. IS 15885 (Part -2/section 13)
2. IS 16102 (Part-1): 2012

As per this order LED manufactures to get their product tested from BIS recognised labs.

Thus, the following electrical parameters and standards should ensure while purchasing LED in future based on the BIS standards. These are the minimum technical requirements for the acceptance of LED. Also, the LED test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 21: LED SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Light source	SMD LED chip	LM 80/IS 16106
2	System Efficacy	>= 110 lumen /watt	IS 16106:2012
3	LED Driver Efficiency	Minimum 85%	
4	Harmonics	Maximum 10%	IS 16102-2-2012
5	Power factor	Minimum 0.95	IS 16102-2
6	Frequency	50 Hz ±3%	LM-79 report
7	Operating voltage	110V – 320V	LM 79 report
8	Surge voltage	>4 kV	LM 79 report
9	Ambient temp	-10 to 50 ° C	LM 79 report
10	Degree of protection	IP 66	IS 10322
11	CRI	Minimum 70	IS 16102 - 2

5. BLDC specification

Normal trend of one ceiling fan working hours with present cost while replacing with BLDC fan and the payback period is given in below table.

Number of working hours/day for a single ceiling fan	**Hours**	9	10	11	12	13	14	15	16	17	18	19	More than 20
Simple payback period after replacement with BLDC	**Years**	5	5	4	4	4	3	3	3	3	3	3	2

The BLDC fan test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 22: BLDC SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Air delivery	215 CMM	IS 374 - 2019
2	Harmonics	Maximum 10%	IS 374 - 2019
3	Power factor	Minimum 0.95	IS 374 - 2019
4	Frequency	50 Hz ±3%	IS 374 - 2019
5	Insulation resistance	>2 MΩ	IS 374 - 2019
6	Speed	350 rpm	IS 374 - 2019
7	Maximum temperature rise	70 ° C	IS 374 - 2019
8	Degree of protection	IP 65	IS 10322

ENERGY AUDIT REPORT OF GOVERNMENT AYURVEDA DISPENSARY,KUMBALANGI

BASIC DATA

The general details of the Panchayath building are given below in table

TABLE 23: BASIC DATA SHEET

SL. NO	PARTICULARS	DETAILS
1	Name of building	Ayurveda dispensary
2	Name of Panjayath	Kumbalangi
3	Name of the Assembly Constituency	Kochi
4	District	Ernakulam
5	Address	North Kumbalangi, Ernakulam - 682007
6	Total area of building	650 Sq feet
7	Number of staffs	02

TABLE 24: BUILDING DETAILS

Sl No.	Items	2021 - 22
1	Name of building	AyurvedaDispensary
	Name of Grama Panchayat/ Block Panchayat/ Municipality office	Kumbalangi Grama Panchayat
2	KSEBL Consuer No:	1155613008803
3	KSEBL Section Office:	Palluruthy
4	Connected Load (kW)	3kW
5	Annual electricity consumption of the office building (kWh)	180
6	Total built up area of Office Building (Sq.M)	60
7	Specific Energy Consumption (kWh/ SQ.M)	3

EXECUTIVE SUMMARY

ENERGY SAVING PROPOSALS

The following table shows the energy saving proposals

TABLE25: ENERGY SAVING PROPOSALS

Sl. no	Energy conservation measures	Annual Energy Savings	Annual Financial Savings	Investment	Simple payback period
		kWh	**Rs**	**Rs**	**Months**
1	Replacement of 01 ceiling fan (75W) with BEE star rated or above (35 W)	77	538	3500	78
2	Replacement of 1 no:(36W) with LED tube (20 W)	77	538	500	51
	Total	144	1076	4000	45

KSEB BILL ANALYSIS

The Bimonthly energy and fixed charges for the period Jan 2022-February 2022represented in Figure below.

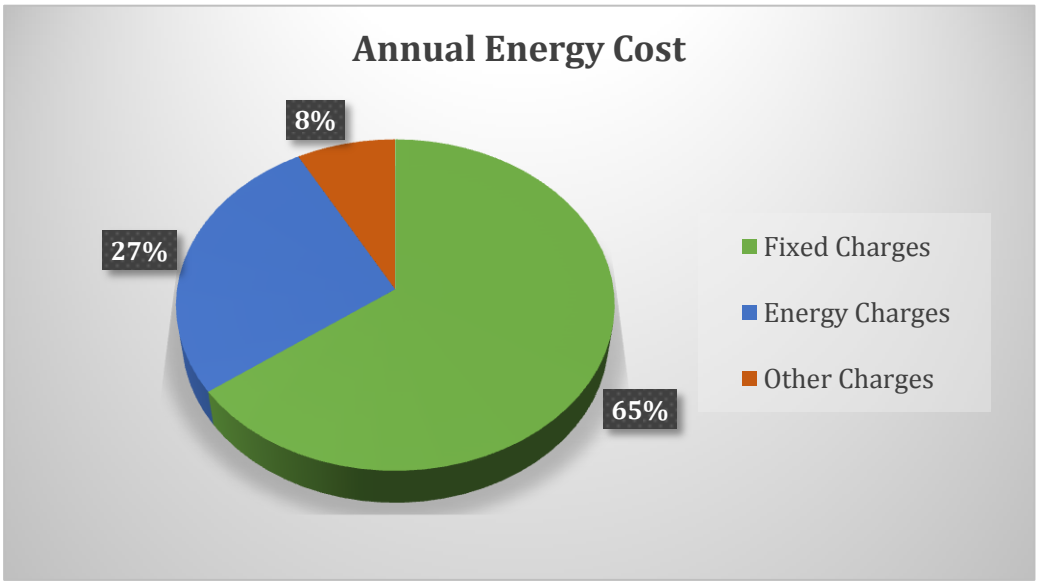


FIGURE 2: TARIFF RATE

Inference	**i.** Fixed charges in the past month is 390and energy charges were Rs171 **ii.** The fixed charges came about **64%** of the total bill.

TABLE 26: BILL DETAILS

Month	Bi Monthly consumption (kWh)	Average consumption (kWh)	Fixed charges (Rs)	Energy charge (Rs)	Meter rent (Rs)	Duty (Rs)	GST (Rs)	Total amount to be paid (Rs)
February	30	30	390	171	15	17	1	596

ENERGY AND UTILITY DESCRIPTION

6. ELECTRIC CONSUMPTION DATA

TABLE 27: BASELINE DETAILS-ELECTRICITY

Sl. No.	Items	2021 - 22
1	**Name of Building**	Ayurveda Dispensary
	Name of Grama Panchayat/ Block Panchayat/ Municipality office	KumbalangiGrama Panchayat
2	KSEBL Consumer No:	1155613008803
3	KSEBL Section Office:	Palluruthy
4	Tariff	LT-6B/Three
5	Sanctioned Load (kW)	3kW
6	Measured Connected Load (kW)	2.114
7	Maximum Demand	Nil
8	Annual electricity consumption of the office building (kWh)	180
9	Annual Energy cost (Rs)	3576

ENERGY PERFORMANCE INDEX (EPI)

EPI is based on the energy consumption. The futuristic energy consumption after the implementation of energy saving proposals is given in the tables below.

TABLE 28: ENERGY INDEX

Parameters	Values
Present Annual electricity consumption(kWh/year)	180
Present annual specific electricity consumption (kWh/m2)	1.5
Present CO_2 emission (Tons/year)	142
After Energy Saving Implementation	
Expecting annual electricity consumption (kWh/year)	
Expecting annual specific electricity consumption (kWh/m2)	30.10
Electricity reduction %	38.87

CONNECTED LOAD DETAILS

LIGHT AND FAN LOADS

Effective lighting is essential for building area to carry out their work properly, yet it is possible to achieve significant savings in this area and improve the quality of the lit environment. Goodlighting design can reduce costs and have the added benefit of decreasing internal heat gains. The ceiling fan is the most commonly used ventilation equipment in the building. The connected load details of light and fan are given in the table below.

TABLE 29: LIGHT & FAN LOADS

Particulars	LED 9W	T8	CFL	C FAN	Table FAN
Watts	9	36	36	60	60
Total Nos	02	02	4	1	1
Total Power(W)	18	72	144	60	60
Total KW	0.354				

ANNEXURE-1

ENERGY SAVING PROPOSAL – 1

REPLACEMENT OF CEILING FANS ENERGY EFFICIENT BLDC/BEE STAR RATED FANS

Background

A BLDC fan takes in AC voltage and internally converts it into DC using SMPS. The main difference between BLDC and ordinary DC fans is the commutation method. A commutation is basically the technique of changing the direction of current in the motor for the rotational movement. In a BLDC motor, as there are no brushes, so the commutation is done by the driving algorithm in the Electronics. The 1200 mm size BLDC fan at dull speed consumes only around 22 to 27W instead of the present ceiling fan with induction motors that takes 60 to 75W as per the manufactures.

BEE star rated fans consumes around 35W in full speed in 1200mm blade size.

Proposal

Replace the ceiling fans with BLDC/ BEE star rated fans in all the areas especially at the Dormitory and office. The calculation for the savings is given in the table below. The below table shows the replacement with BLDC and BEE star rated ceiling fans which will give the cost comparison between them. The Panchayat can opt for best option among them.

TABLE 30: ENERGY SAVING PROPOSAL-1

Particulars	Unit	With BEE star rated 4 or 5
Power of existing ceiling fans at full speed	Watts	60
Power of replacing fan	Watts	28
Difference in Wattage	Watts	32
Avg No: of working hours/day	Hrs	8
No: of working days per year (Average)	Nos	300
No: of working hours per annum	Hrs	2400
Number of Ceiling Fans operating	Nos	1
kWh Saving per Annum	**kWh**	77
Cost per kWh (Average)	Rs	7
Annual Financial Savings	**Rs**	539
Cost of replacing Fan per piece	Rs	3500
Investment for replacing Fan	**Rs**	**3500**
Simple Payback period	**Months**	**78**

REPLACEMENT OF FLUORESCENT TUBES WITH LED

Background

T5 tube lights consume majority of light loads and shall be replaced with LED tubes

Proposal

By replacing the light fitting with LEDs of appropriate ratings the power consumption will reduce considerably by approximate 50% with the present operating hours. The calculation for the savings, approximate investment cost and payback period is given in the table below.

PARTICULARS	UNIT	T8 TUBE
Power of T5 Fluorescent lights	Watts	36
Proposed LED tube	Watts	20
Difference in Wattage	Watts	16
Avg No: of working hours/tube/day	Hrs	8
No: of working days per year (Average)	Nos	300
No: of working hours per annum	Hrs	2400
Number of Lights operating*	Nos	2
kWh Saving per Annum	kWh	77
Cost per kWh(Average)	Rs	7
Annual Financial Savings	Rs	538
Cost of LED tube	Rs	250
Investment for LED lights	Rs	500
Simple Payback period	Months	**11**

ANNEXURE-3

7. LED specification

The Department of Electronics and information technology issued "Electronics and information Technology goods order 2012" on 3rd October 2012 the following standards for LED lamps are covered.

1. IS 15885 (Part -2/section 13)
2. IS 16102 (Part-1): 2012

As per this order LED manufactures to get their product tested from BIS recognised labs.

Thus, the following electrical parameters and standards should ensure while purchasing LED in future based on the BIS standards. These are the minimum technical requirements for the acceptance of LED. Also, the LED test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 31: LED SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Light source	SMD LED chip	LM 80/IS 16106
2	System Efficacy	>= 110 lumen /watt	IS 16106:2012
3	LED Driver Efficiency	Minimum 85%	
4	Harmonics	Maximum 10%	IS 16102-2-2012
5	Power factor	Minimum 0.95	IS 16102-2
6	Frequency	50 Hz ±3%	LM-79 report
7	Operating voltage	110V – 320V	LM 79 report
8	Surge voltage	>4 kV	LM 79 report
9	Ambient temp	-10 to 50 ° C	LM 79 report
10	Degree of protection	IP 66	IS 10322
11	CRI	Minimum 70	IS 16102 - 2

8. BLDC specification

Normal trend of one ceiling fan working hours with present cost while replacing with BLDC fan and the payback period is given in below table.

Number of working hours/day for a single ceiling fan	**Hours**	9	10	11	12	13	14	15	16	17	18	19	More than 20
Simple payback period after replacement with BLDC	**Years**	5	5	4	4	4	3	3	3	3	3	3	2

The BLDC fan test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 32: BLDC SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Air delivery	215 CMM	IS 374 - 2019
2	Harmonics	Maximum 10%	IS 374 - 2019
3	Power factor	Minimum 0.95	IS 374 - 2019
4	Frequency	50 Hz ±3%	IS 374 - 2019
5	Insulation resistance	>2 MΩ	IS 374 - 2019
6	Speed	350 rpm	IS 374 - 2019
7	Maximum temperature rise	70 ° C	IS 374 - 2019
8	Degree of protection	IP 65	IS 10322

ENERGY AUDIT REPORT OF GOVERNMENT HOMEO DISPENSARY,KUMBALANGI

BASIC DATA

The general details of the Panchayath building are given below in table

TABLE 33: BASIC DATA SHEET

SL. NO	PARTICULARS	DETAILS
1	Name of Building	Homeo Dispensary
	Name of Grama Panchayat/ Block Panchayat/ Municipality office	Kumbalangi Grama Panchayat
3	Name of the Assembly Constituency	Kochi
4	District	Ernakulam
5	Address	Homeo Dispensary Kumbalangi Grama Panchayat
6	Total land area (sq.m)	1 acre
7	Building area (Sq. M)	80
8	Number of persons working	05

TABLE 34: BUILDING DETAILS

Sl No.	Items	2021 - 22
1	Name of Building	Homeo Dispensary
2	KSEBL Consumer No:	1155613001229
3	KSEBL Section Office:	Palluruthy
4	Connected Load (kW)	3
5	Annual electricity consumption of the office building (kWh)	607
6	Total built up area of Office Building (Sq.m)	80
7	Specific Energy Consumption (kWh/ Sq.m/year)	7.97

ENERGY SAVING PROPOSALS

The following table shows the energy saving proposals

TABLE35: ENERGY SAVING PROPOSALS

Sl. no	Energy conservation measures	Annual Energy Savings	Annual Financial Savings	Investment	Simple payback period
		kWh	Rs	Rs	Months
1	Replacement of 03 ceiling fan (60W) with BEE star rated or above (28 W)	230	1612	10500	78
2	Replacement of 4 No:T8 Tube lights and 1No: T-1) with LED tube (20 W)	202	1412	1250	11
	Total	432	3024	11750	45

The Bimonthly energy and fixed charges for the period March 2021- January 2022represented in Figure below.

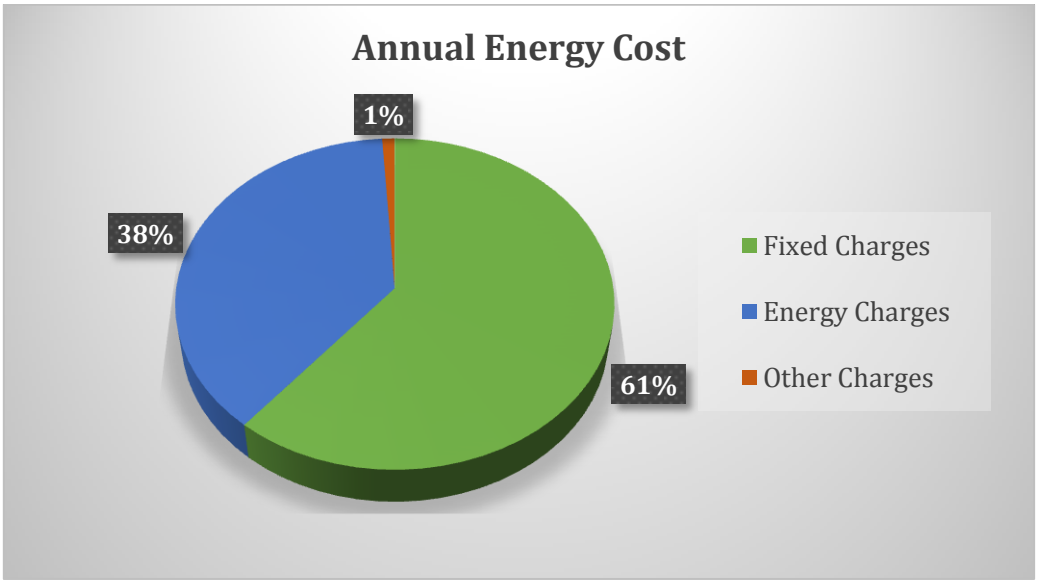


FIGURE 3: TARIFF RATE

Inference	**iii.** Annual fixed charges in the past one year were Rs2340and energy charges were Rs3460 **iv.** The energy charges came about **70%** of the total bill.

TABLE 36: BILL DETAILS

Month	Bi Monthly consumption (kWh)	Average consumption (kWh)	Fixed charges (Rs)	Energy charge (Rs)	Meter rent (Rs)	Duty (Rs)	GST(Rs)	Total amount to be paid (Rs)
Mar-21	123	42	390	701.61	12	70.16	2.16	1176
May-21	86	50	390	489.82	12	48.98	2.16	943
Jul-21	85	48	390	484.5	12	48.45	2.16	937
Sep-21	105	49	390	598.5	12	59.85	2.16	1063
Nov-21	100	46	390	570	12	57.00	2.16	1031
Jan-22	108	48	390	615.6	12	61.56	2.16	1081

ENERGY AND UTILITY DESCRIPTION

9. ELECTRIC CONSUMPTION DATA

TABLE 37: BASELINE DETAILS-ELECTRICITY

Sl. No.	Items	2021 - 22
1	Name of Grama Panchayat/ Block Panchayat/ Municipality office	KumbalangiGrama Panchayat
2	KSEBL Consumer No:	1155613001229
3	KSEBL Section Office:	Palluruthy
4	Tariff	LT-6A/Single
5	Sanctioned Load (kW)	3
8	Annual electricity consumption of the office building (kWh)	607
9	Annual Energy cost (Rs)	3460

ENERGY PERFORMANCE

In this energy performance section specific electricity consumption as area wise, connected load details lighting, fan, water pumps, office equipment's

SPECIFIC ELECTRICITY CONSUMPTION

SEC BASED ON AREA (KWH/M^2)

Specific electricity is calculated based on electricity consumed per building area. The details of specific electricity consumption for last few months are given below

TABLE 38: SPECIFIC ELECTRICITY CONSUMPTION – kWh/m^2

MONTH	ELECTRICITY CONSUMPTION (kWh)	BUILDING AREA (m^2)	SPECIFIC ELECTRICITY CONSUMPTION (kWh/m^2)
Mar-21	123	80	1.54
May-21	86	80	1.08
Jul-21	85	80	1.06
Sep-21	105	80	1.31
Nov-21	100	80	1.25
Jan-22	108	80	1.35
Yearly	607	80	Avg = 0.69(Bi-Monthly)
Annual SEC = 7.59			

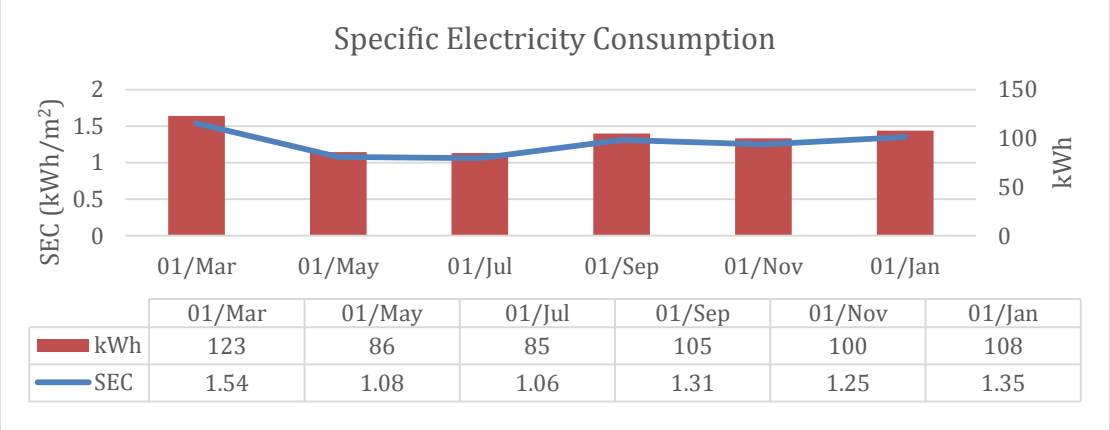


FIGURE 4: SPECIFIC ELECTRICITY CONSUMPTION

ENERGY PERFORMANCE INDEX (EPI)

EPI is based on the energy consumption The futuristic energy consumption after the implementation of energy saving proposals is given in the tables below.

TABLE 39: ENERGY INDEX

Parameters	Values
Present Annual electricity consumption(kWh/year)	607
Present annual specific electricity consumption (kWh/m2/year)	7.59
Present CO_2 emission (Kg/year)	480
After Energy Saving Implementation	
Expecting annual electricity consumption (kWh/year)	175
Expecting annual specific electricity consumption (kWh/m2)	2.18
Carbon Dioxide emission Kg/Year	138

CONNECTED LOAD DETAILS

LIGHT AND FAN LOADS

Effectivelightingisessentialforbuilding area tocarryouttheirworkproperly,yetitispossibletoachievesignificantsavingsinthisareaandimprovethequality ofthelitenvironment.Goodlightingdesigncanreducecostsandhavetheaddedbenefitofdecreasinginternal heatgains.

The ceiling fan is the most commonly used ventilation equipment in the building. The connected load details of light and fan are given in the table below.

TABLE 40: LIGHT & FAN LOADS

Particulars	LED 9W	T8	T12	LED TubeW	C FAN	P FAN	Water Purifier
Watts	9	36	40	20	60	60	20
Total Nos	3	4	1	1	7	1	1
Total Power(W)	18	144	40	20	420	60	20
Grand Total Kw	**0.722**						

COMPUTER AND OTHER ELECTRONIC LOADS

This section gives the connected load details of computer and other miscellaneous office loads in the Panchayat building. The following table shows the load details of general appliances.

TABLE 41: COMPUTER AND OTHER ELECTRONIC LOADS

Particulars	PC	PRINTER	X ray Reader	Water PUMP motor
Watts	150	150	60	750
Nos	1	1	1	1
Total (W)	150	150	60	750
Grad total in kW	**1.11**			

ANNEXURE-1

ENERGY SAVING PROPOSAL – 1

REPLACEMENT OF CEILING FANS ENERGY EFFICIENT BLDC/BEE STAR RATED FANS

Background

A BLDC fan takes in AC voltage and internally converts it into DC using SMPS. The main difference between BLDC and ordinary DC fans is the commutation method. A commutation is basically the technique of changing the direction of current in the motor for the rotational movement. In a BLDC motor, as there are no brushes, so the commutation is done by the driving algorithm in the Electronics. The 1200 mm size BLDC fan at dull speed consumes only around 22 to 27W instead of the present ceiling fan with induction motors that takes 60 to 75W as per the manufactures.

BEE star rated fans consumes around 35W in full speed in 1200mm blade size.

Proposal

Replace the ceiling fans with BLDC/ BEE star rated fans in all the areas especially at the Dormitory and office. The calculation for the savings is given in the table below. The below table shows the replacement with BLDC and BEE star rated ceiling fans which will give the cost comparison between them. The Panchayat can opt for best option among them.

TABLE 42: ENERGY SAVING PROPOSAL-1

Particulars	Unit	With BEE star rated 4 or 5
Power of existing ceiling fans at full speed	Watts	60
Power of replacing fan	Watts	28
Difference in Wattage	Watts	32
Avg No: of working hours/day	Hrs	8
No: of working days per year (Average)	Nos	300
No: of working hours per annum	Hrs	2400
Number of Ceiling Fans operating	Nos	3
kWh Saving per Annum	**kWh**	230.4
Cost per kWh (Average)	Rs	7
Annual Financial Savings	**Rs**	1612.8
Cost of replacing Fan per piece	Rs	3500
Investment for replacing Fan	**Rs**	10500
Simple Payback period	**Months**	78

REPLACEMENT OF FLUORESCENT TUBES WITH LED

Background

T5 tube lights consume majority of light loads and shall be replaced with LED tubes

Proposal

By replacing the light fitting with LEDs of appropriate ratings the power consumption will reduce considerably by approximate 50% with the present operating hours. The calculation for the savings, approximate investment cost and payback period is given in the table below.

PARTICULARS	UNIT	T8 TUBE	T-12 TUBE
Power of T5 Fluorescent lights	Watts	36	40
Proposed LED tube	Watts	20	20
Difference in Wattage	Watts	16	20
Avg No: of working hours/tube/day	Hrs	8	8
No: of working days per year (Average)	Nos	300	300
No: of working hours per annum	Hrs	2400	2400
Number of Lights operating*	Nos	4	1
kWh Saving per Annum	kWh	153.6	48
Cost per kWH (Average)	Rs	7	7
Annual Financial Savings	Rs	1075.2	336
Cost of LED tube	Rs	250	250
Investment for LED lights	Rs	1000	250
Simple Payback period	Months	11	9

Summary

PARTICULARS	UNIT	Total
kWh Saving per Annum	kWh	**202**
Annual Financial Savings	Rs	**1412**
Investment for LED lights	Rs	**1250**
Simple Payback period	Months	**11**

ANNEXURE-3

10. LED specification

The Department of Electronics and information technology issued “Electronics and information Technology goods order 2012” on 3rd October 2012 the following standards for LED lamps are covered.

1. IS 15885 (Part -2/section 13)
2. IS 16102 (Part-1): 2012

As per this order LED manufactures to get their product tested from BIS recognised labs.

Thus, the following electrical parameters and standards should ensure while purchasing LED in future based on the BIS standards. These are the minimum technical requirements for the acceptance of LED. Also, the LED test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 43: LED SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Light source	SMD LED chip	LM 80/IS 16106
2	System Efficacy	>= 110 lumen /watt	IS 16106:2012
3	LED Driver Efficiency	Minimum 85%	
4	Harmonics	Maximum 10%	IS 16102-2-2012
5	Power factor	Minimum 0.95	IS 16102-2
6	Frequency	50 Hz ±3%	LM-79 report
7	Operating voltage	110V – 320V	LM 79 report
8	Surge voltage	>4 kV	LM 79 report
9	Ambient temp	-10 to 50 ° C	LM 79 report
10	Degree of protection	IP 66	IS 10322
11	CRI	Minimum 70	IS 16102 - 2

11. BLDC specification

Normal trend of one ceiling fan working hours with present cost while replacing with BLDC fan and the payback period is given in below table.

Number of working hours/day for a single ceiling fan	**Hours**	9	10	11	12	13	14	15	16	17	18	19	More than 20
Simple payback period after replacement with BLDC	**Years**	5	5	4	4	4	3	3	3	3	3	3	2

The BLDC fan test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 44: BLDC SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Air delivery	215 CMM	IS 374 - 2019
2	Harmonics	Maximum 10%	IS 374 - 2019
3	Power factor	Minimum 0.95	IS 374 - 2019
4	Frequency	50 Hz ±3%	IS 374 - 2019
5	Insulation resistance	>2 MΩ	IS 374 - 2019
6	Speed	350 rpm	IS 374 - 2019
7	Maximum temperature rise	70 ° C	IS 374 - 2019
8	Degree of protection	IP 65	IS 10322

ENERGY AUDIT REPORT OF GOVERNMENT AGRICULTURE OFFICE, KUMBALANGI

BASIC DATA

The general details of the Agriculture building are given below in table

TABLE 45: BASIC DATA SHEET

SL. NO	PARTICULARS	DETAILS
1	Name of Building	Agriculture Office
2	Panjayath	Kumbalangi
3	Name of the Assembly Constituency	Kochi
4	District	Ernakulam
5	Phone number and e-mail ID	kbkmblngekm.agri@kerala.gov.in Mob no: 9383471161
6	Total geographical area (sq.m)	119.4
7	Number of persons Working In the offce	04

TABLE 46: BUILDING DETAILS

Sl No.	Items	2021 - 22
1	Name of Grama Panchayat/ Block Panchayat/ Municipality office	Kumbalangi Grama Panchayat
2	KSEBL Consumer No:	1155613006701
3	KSEBL Section Office:	Palluruthy
4	Sanctioned Connected Load (kW)	1.92kW
5	Annual electricity consumption of the office building (kWh)	495
6	Total built up area of Office Building (Sq.m)	119.4
7	Specific Energy Consumption (kWh/ Sq.m)	4.16

EXECUTIVE SUMMARY

ENERGY SAVING PROPOSALS

The following table shows the energy saving proposals

TABLE47: ENERGY SAVING PROPOSALS

Sl. no	Energy conservation measures	Annual Energy Savings	Annual Financial Savings	Investment	Simple payback period
		kWh	**Rs**	**Rs**	**Months**
1	Replacement of 2ceiling fan (60W) with BEE star rated or above (28W)	153	1075	7000	78
2	Replacement of T8 Tube lights (36W) with LED tube (20 W)	48	336	250	9
	Total	201	1411	7250	78

The Bimonthly energy and fixed charges for the period March 2021- February 2022represented in Figure below.

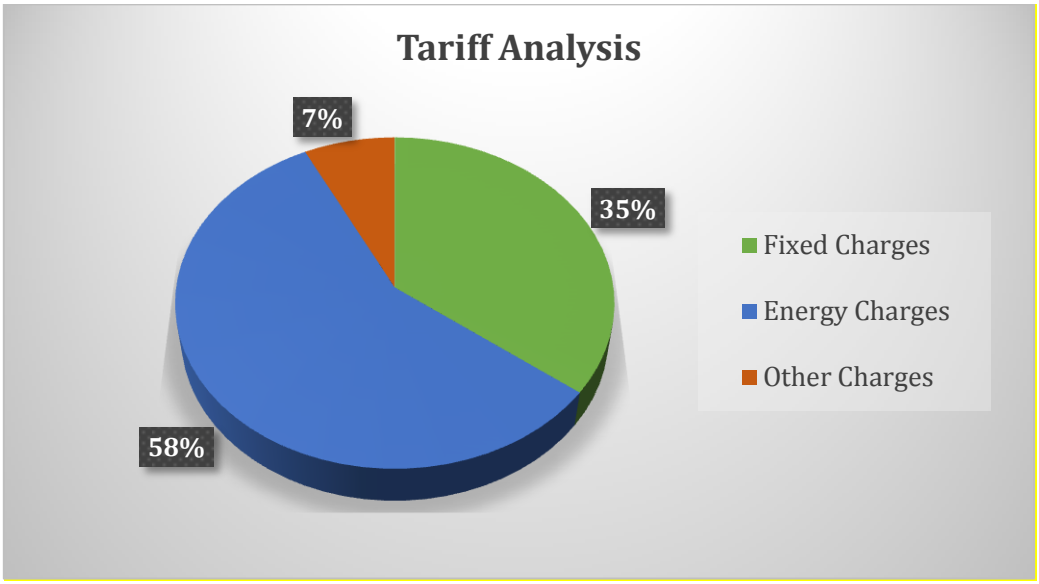


FIGURE 5: TARIFF RATE

Inference	**v.** Annual fixed charges in the past one year were Rs.1920and energy charges were Rs 3119.63 **vi.** The energy charges came about **83%** of the total bill.

TABLE 48: BILL DETAILS

Month	Bi Monthly consumption (kWh)	Average consumption (kWh)	Fixed charges (Rs)	Energy charge (Rs)	Meter rent (Rs)	Duty (Rs)	GST(Rs)	Total amount to be paid (Rs)
Mar-21	99	48	320	624.35	12	62.44	2.16	1021
May-21	52	49	320	328.08	12	32.81	2.16	695
Jul-21	80	43	320	504	12	50.40	2.16	889
Sep-21	80	39	320	504	12	50.40	2.16	889
Nov-21	93	35	320	585.9	12	58.59	2.16	979
Jan-22	91	42	320	573.3	12	57.33	2.16	965

ENERGY AND UTILITY DESCRIPTION

12. ELECTRIC CONSUMPTION DATA

TABLE 49: BASELINE DETAILS-ELECTRICITY

Sl. No.	Items	2021 – 22
1	Name of Building	Agriculture Office
2	KSEBL Consumer No:	1155613006701
3	KSEBL Section Office:	Palluruthy
4	Tariff	LT-6B/Single
5	Sanctioned Load (kW)	1.92 kW
6	Measured Connected Load (kW)	1.276
7	Maximum Demand	Nil
8	Annual electricity consumption of the office building (kWh)	495
9	Annual Energy cost (Rs)	3119.63

ENERGY PERFORMANCE

In this energy performance section specific electricity consumption as area wise, connected load details lighting, fan, office equipment's

SPECIFIC ELECTRICITY CONSUMPTION

SEC BASED ON AREA (KWH/M^2)

Specific electricity is calculated based on electricity consumed per building area. The details of specific electricity consumption for last few months are given below

TABLE 50: SPECIFIC ELECTRICITY CONSUMPTION – kWh/m^2

MONTH	ELECTRICITY CONSUMPTION (kWh)	BUILDING AREA (m^2)	SPECIFIC ELECTRICITY CONSUMPTION (kWh/m^2)
Mar-21	99	**119.4**	**0.83**
May-21	52	**119.4**	**0.44**
Jul-21	80	**119.4**	**0.67**
Sep-21	80	**119.4**	**0.67**
Nov-21	93	**119.4**	**0.78**
Jan-22	91	**119.4**	**0.76**
Yearly	**495**	**119.04**	**Avg = 0.69(Bi-Monthly)**
Annual SEC = 495/119.04 =4.16			

The energy performance index is plotted in the below chart which gives a pictorial representation of the specific electricity consumption and units consumed in various months during the period from March 2021- January 2021

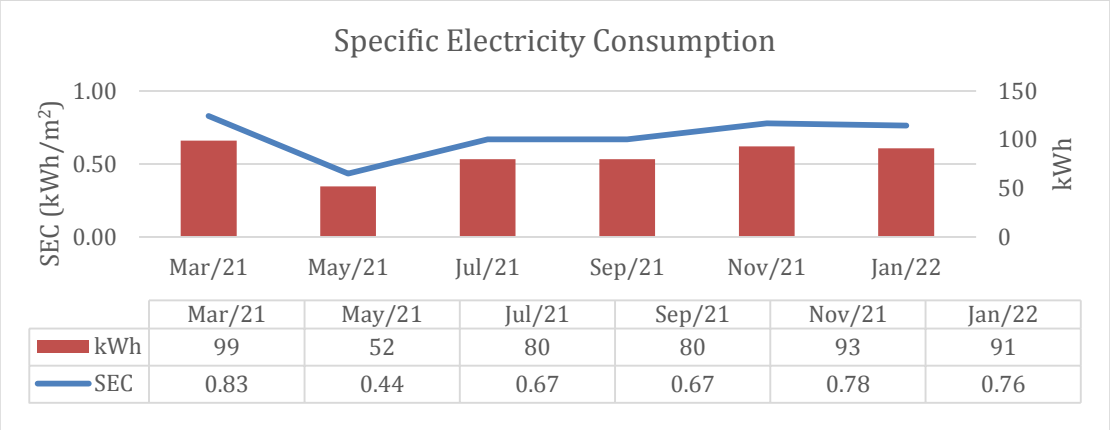


FIGURE 6: SPECIFIC ELECTRICITY CONSUMPTION

ENERGY PERFORMANCE INDEX (EPI)

EPI is based on the energy consumption during Jan 2021- Nov 2021. The futuristic energy consumption after the implementation of energy saving proposals is given in the tables below.

TABLE 51: ENERGY INDEX

Parameters	Values
Present Annual electricity consumption(kWh/year)	495
Present annual specific electricity consumption (kWh/m2)	4.16
Present CO_2 emission (kG/year)	406
After Energy Saving Implementation	
Expecting annual electricity consumption (kWh/year)	293
Expecting annual specific electricity consumption (kWh/m2)	2.46
Electricity reduction %	42
Reduction in CO2 emission (kG/Year)	241

CONNECTED LOAD DETAILS

LIGHT AND FAN LOADS

Effective lighting is essential for building area to carry out their work properly, yet it is possible to achieve significant savings in this area and improve the quality of the lit environment. Goodlighting design can reduce costs and have the added benefit of decreasing internal heat gains. The ceiling fan is the most commonly used ventilation equipment in the building. The connected load details of light and fan are given in the table below.

TABLE 52: LIGHT & FAN LOADS

Particulars	LED 9W	LED	T12	CFL 11W	BULB	Zero Bulb	C FAN	P FAN	E FAN
Watts	9	20	40	40	60	10	60	60	60
Front Office									
Nos			1				2		
Office									
Nos		1					3		
Laboratory, bath rooms, storage room									
Nos.	4							1	
Total Nos	4	1	1				5	1	
Total Power(W)	36	20	40				300	60	
Grand Total (Kw)	0.456								

COMPUTER AND OTHER ELECTRONIC LOADS

This section gives the connected load details of computer and other miscellaneous office loads in the Agriculture office building. The following table shows the load details of general appliances.

TABLE 53: COMPUTER AND OTHER ELECTRONIC LOADS

Particulars	**PC**	**PRINTER**
Watts	150	150
Nos	01	01
Total (W)	150	150
Total load	0.3	

The connected load details are given below in the table:

TABLE 54 CONNECTED LOAD

Particulars	**Data(kW)**	**% of total load**

Lighting and fan loads	0.456	49
Miscellaneous Loads	2.02	24
Total	**8.472**	100

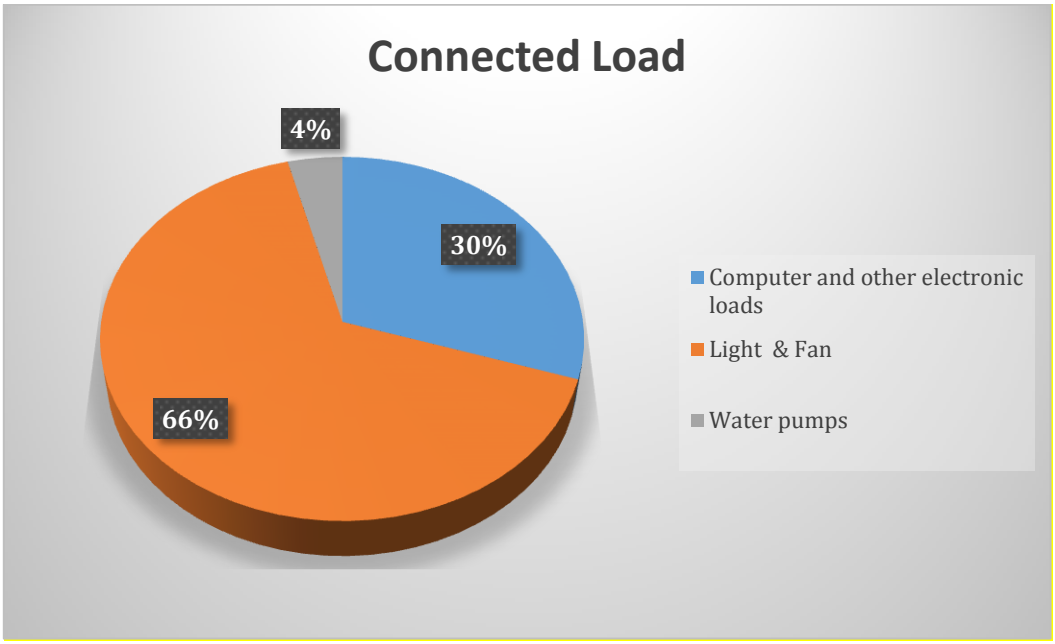


FIGURE 7 CONNECTED LOAD

ANNEXURE-1

ENERGY SAVING PROPOSAL – 1

REPLACEMENT OF CEILING FANS ENERGY EFFICIENT BLDC/BEE STAR RATED FANS

Background

A BLDC fan takes in AC voltage and internally converts it into DC using SMPS. The main difference between BLDC and ordinary DC fans is the commutation method. A commutation is basically the technique of changing the direction of current in the motor for the rotational movement. In a BLDC motor, as there are no brushes, so the commutation is done by the driving algorithm in the Electronics. The 1200 mm size BLDC fan at dull speed consumes only around 22 to 27W instead of the present ceiling fan with induction motors that takes 60 to 75W as per the manufactures.

BEE star rated fans consumes around 35W in full speed in 1200mm blade size.

Proposal

Replace the ceiling fans with BLDC/ BEE star rated fans in all the areas especially at the Dormitory and office. The calculation for the savings is given in the table below. The below table shows the replacement with BLDC and BEE star rated ceiling fans which will give the cost comparison between them. The Panchayat can opt for best option among them.

TABLE 55: ENERGY SAVING PROPOSAL-1

Particulars	Unit	With BEE star rated 4 or 5
Power of existing ceiling fans at full speed	Watts	60
Power of replacing fan	Watts	28
Difference in Wattage	Watts	32
Avg No: of working hours/day	Hrs	8
No: of working days per year (Average)	Nos	300
No: of working hours per annum	Hrs	2400
Number of Ceiling Fans operating	Nos	2
kWh Saving per Annum	**kWh**	153.6
Cost per kWh (Average)	Rs	7
Annual Financial Savings	**Rs**	1075.2
Cost of replacing Fan per piece	Rs	3500
Investment for replacing Fan	**Rs**	7000
Simple Payback period	**Months**	78

REPLACEMENT OF FLUORESCENT TUBES WITH LED

Background

T5 tube lights consume majority of light loads and shall be replaced with LED tubes

Proposal

By replacing the light fitting with LEDs of appropriate ratings the power consumption will reduce considerably by approximate 50% with the present operating hours. The calculation for the savings, approximate investment cost and payback period is given in the table below.

PARTICULARS	UNIT	T-12 TUBE
Power of T5 Fluorescent lights	Watts	40
Proposed LED tube	Watts	20
Difference in Wattage	Watts	20
Avg No: of working hours/tube/day	Hrs	8
No: of working days per year (Average)	Nos	300
No: of working hours per annum	Hrs	2400
Number of Lights operating*	Nos	1
kWh Saving per Annum	kWh	48
Cost per kWh (Average)	Rs	7
Annual Financial Savings	Rs	336
Cost of LED tube	Rs	250
Investment for LED lights	Rs	250
Simple pay back period	Months	9

ANNEXURE-3

13. LED specification

The Department of Electronics and information technology issued "Electronics and information Technology goods order 2012" on 3rd October 2012 the following standards for LED lamps are covered.

1. IS 15885 (Part -2/section 13)
2. IS 16102 (Part-1): 2012

As per this order LED manufactures to get their product tested from BIS recognised labs.

Thus, the following electrical parameters and standards should ensure while purchasing LED in future based on the BIS standards. These are the minimum technical requirements for the acceptance of LED. Also, the LED test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 56: LED SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Light source	SMD LED chip	LM 80/IS 16106
2	System Efficacy	>= 110 lumen /watt	IS 16106:2012
3	LED Driver Efficiency	Minimum 85%	
4	Harmonics	Maximum 10%	IS 16102-2-2012
5	Power factor	Minimum 0.95	IS 16102-2
6	Frequency	50 Hz ±3%	LM-79 report
7	Operating voltage	110V – 320V	LM 79 report
8	Surge voltage	>4 kV	LM 79 report
9	Ambient temp	-10 to 50 ° C	LM 79 report
10	Degree of protection	IP 66	IS 10322
11	CRI	Minimum 70	IS 16102 - 2

14. BLDC specification

Normal trend of one ceiling fan working hours with present cost while replacing with BLDC fan and the payback period is given in below table.

Number of working hours/day for a single ceiling fan	**Hours**	9	10	11	12	13	14	15	16	17	18	19	More than 20
Simple payback period after replacement with BLDC	**Years**	5	5	4	4	4	3	3	3	3	3	3	2

The BLDC fan test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 57: BLDC SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Air delivery	215 CMM	IS 374 - 2019
2	Harmonics	Maximum 10%	IS 374 - 2019
3	Power factor	Minimum 0.95	IS 374 - 2019
4	Frequency	50 Hz ±3%	IS 374 - 2019
5	Insulation resistance	>2 MΩ	IS 374 - 2019
6	Speed	350 rpm	IS 374 - 2019
7	Maximum temperature rise	70 ° C	IS 374 - 2019
8	Degree of protection	IP 65	IS 10322

BASIC DATA

The general details of the Panchayath building are given below in table

TABLE 58: BASIC DATA SHEET

SL. NO	PARTICULARS	DETAILS
1	Name of Building	IP block
	Name of Grama Panchayat/ Block Panchayat/ Municipality office	Kumbalangi Grama Panchayat
3	Name of the Assembly Constituency	Kochi
4	District	Ernakulam
5	Address	IP block CHC Annexe
6	Building area (Sq. M)	242
7	Number of persons working	23

TABLE 59: BUILDING DETAILS

Sl No.	Items	2021 - 22
1	Name of Building	Community Health Centre
2	KSEBL Consumer No:	1155611002976
3	KSEBL Section Office:	Palluruthy
4	Connected Load (kW)	1
5	Annual electricity consumption of the office building (kWh)	6744
6	Total built up area of Office Building (Sq.m)	242
7	Specific Energy Consumption (kWh/ Sq.m/year)	28

ENERGY AUDIT REPORT OF IP BLOCK, KUMBALANGI

EXECUTIVE SUMMARY

ENERGY SAVING PROPOSALS

The following table shows the energy saving proposals

TABLE60: ENERGY SAVING PROPOSALS

Sl. no	Energy conservation measures	Annual Energy Savings	Annual Financial Savings	Investment	Simple payback period
		kWh	Rs	Rs	Months
1	Replacement of 04 ceiling fan (60W) with BEE star rated or above (28 W)	384	2688	17500	78
2	Replacement of 4 No:T8, T-12 Tube lights with LED tube (20 W)	202	1414	1250	11
	Total	586	4102	18750	56

The Bimonthly energy and fixed charges represented in Figure below.

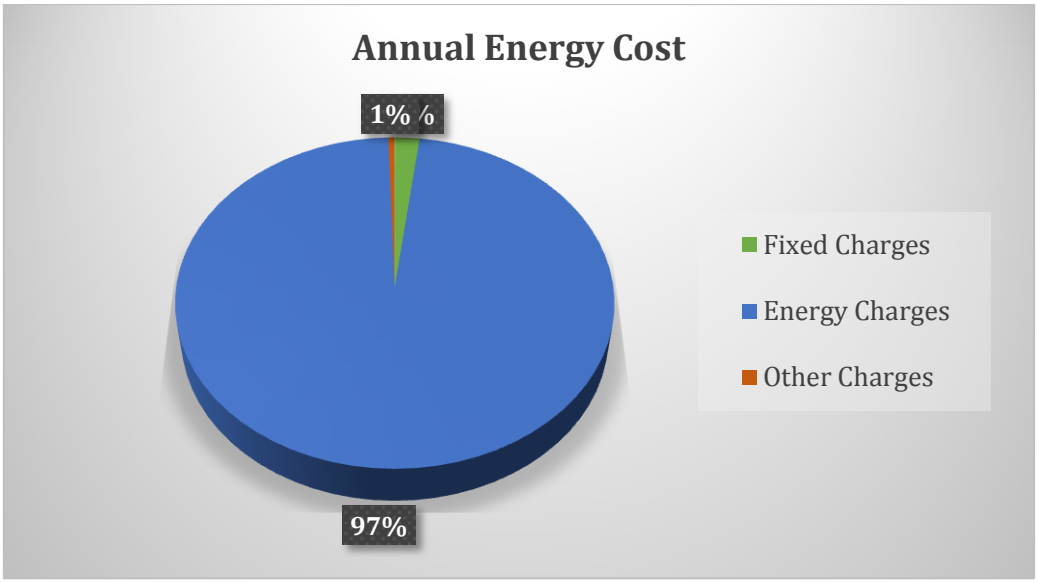


TABLE 61: BILL DETAILS

Month	Bi Monthly consumption (kWh)	Average consumption (kWh)	Fixed charges (Rs)	Energy charge (Rs)	Meter rent (Rs)	Duty (Rs)	GST(Rs)	Total amount to be paid (Rs)
Jann-22	1129	924	195	7396	15	740	2	10401

ENERGY AND UTILITY DESCRIPTION

15. ELECTRIC CONSUMPTION DATA

TABLE 62: BASELINE DETAILS-ELECTRICITY

Sl. No.	Items	2021 - 22
1	Name of Building	Community Health Centre
2	KSEBL Consumer No:	1155611002976
3	KSEBL Section Office:	Palluruthy
4	Tariff	LT-6A/Single
5	Sanctioned Load (kW)	3
8	Annual electricity consumption of the office building (kWh)	6744
9	Annual Energy cost (Rs)	62406

ENERGY PERFORMANCE INDEX (EPI)

EPI is based on the energy consumption The futuristic energy consumption after the implementation of energy saving proposals is given in the tables below.

TABLE 63: ENERGY INDEX

Parameters	Values
Present Annual electricity consumption(kWh/year)	6744
Present annual specific electricity consumption (kWh/m2/year)	28
Present CO_2 emission (Kg/year)	5352
After Energy Saving Implementation	
Expecting annual electricity consumption (kWh/year)	6156
Expecting annual specific electricity consumption (kWh/m2)	25.44
Carbon Dioxide emission Kg/Year	4864

CONNECTED LOAD DETAILS

LIGHT AND FAN LOADS

Effective lighting is essential for building area to carry out their work properly, yet it is possible to achieve significant savings in this area and improve the quality of the lit environment. Goodlighting design can reduce costs and have the added benefit of decreasing internal heat gains. The ceiling fan is the most commonly used ventilation equipment in the building. The connected load details of light and fan are given in the table below.

TABLE 64: LIGHT & FAN LOADS

Particulars	CFL	**T8**	Incandescent lamp	T12	LED TubeW	C FAN	P. Fan	TABLE FAN	Water Purifier
Watts	9	**36**	40	40	20	60	60	60	20
Total Nos	1	**4**	1	1	14	18	1	1	1
Total Power(W)	9	**144**	40	40	280	1080	60	60	20
Grand Total in kW	**1.733**								

COMPUTER AND OTHER ELECTRONIC LOADS

This section gives the connected load details of computer and other miscellaneous office loads in the Panchayat building. The following table shows the load details of general appliances.

TABLE 65: COMPUTER AND OTHER ELECTRONIC LOADS

Particulars	PC	PRINTER	Fridge	Auto Clave	Lab equipment's	Water PUMP motor
Watts	150	150	200	5000	2000	750
Nos	2	1	1	5000	1	1
Total (W)	300	150	200	5000	2000	750
Grant Total in kW	8.4					

ANNEXURE-1

ENERGY SAVING PROPOSAL – 1

REPLACEMENT OF CEILING FANS ENERGY EFFICIENT BLDC/BEE STAR RATED FANS

Background

A BLDC fan takes in AC voltage and internally converts it into DC using SMPS. The main difference between BLDC and ordinary DC fans is the commutation method. A commutation is basically the technique of changing the direction of current in the motor for the rotational movement. In a BLDC motor, as there are no brushes, so the commutation is done by the driving algorithm in the Electronics. The 1200 mm size BLDC fan at dull speed consumes only around 22 to 27W instead of the present ceiling fan with induction motors that takes 60 to 75W as per the manufactures.

BEE star rated fans consumes around 35W in full speed in 1200mm blade size.

Proposal

Replace the ceiling fans with BLDC/ BEE star rated fans in all the areas especially at the Dormitory and office. The calculation for the savings is given in the table below. The below table shows the replacement with BLDC and BEE star rated ceiling fans which will give the cost comparison between them. The Panchayat can opt for best option among them.

TABLE 66: ENERGY SAVING PROPOSAL-1

Particulars	Unit	With BEE star rated 4 or 5
Power of existing ceiling fans at full speed	Watts	60
Power of replacing fan	Watts	28
Difference in Wattage	Watts	32
Avg No: of working hours/day	Hrs	8
No: of working days per year (Average)	Nos	300
No: of working hours per annum	Hrs	2400
Number of Ceiling Fans operating	Nos	5
kWh Saving per Annum	**kWh**	384
Cost per kWh (Average)	Rs	7
Annual Financial Savings	**Rs**	2688
Cost of replacing Fan per piece	Rs	3500
Investment for replacing Fan	**Rs**	17500
Simple Payback period	**Months**	78

REPLACEMENT OF FLUORESCENT TUBES WITH LED

Background

T5 tube lights consume majority of light loads and shall be replaced with LED tubes

Proposal

By replacing the light fitting with LEDs of appropriate ratings the power consumption will reduce considerably by approximate 50% with the present operating hours. The calculation for the savings, approximate investment cost and payback period is given in the table below.

PARTICULARS	UNIT	T8 TUBE	T-12 TUBE
Power of T5 Fluorescent lights	Watts	36	40
Proposed LED tube	Watts	20	20
Difference in Wattage	Watts	16	20
Avg No: of working hours/tube/day	Hrs	8	8
No: of working days per year (Average)	Nos	300	300
No: of working hours per annum	Hrs	2400	2400
Number of Lights operating*	Nos	4	1
kWh Saving per Annum	kWh	154	48
Cost per kWh (Average)	Rs	7	7
Annual Financial Savings	Rs	1078	336
Cost of LED tube	Rs	250	250
Investment for LED lights	Rs	1000	250
Simple Payback period	Months	11	9

Summary

PARTICULARS	UNIT	Total
kWh Saving per Annum	kWh	**202**
Annual Financial Savings	Rs	**1414**
Investment for LED lights	Rs	**1250**
Simple Payback period	Months	**11**

ANNEXURE-3

16. LED specification

The Department of Electronics and information technology issued “Electronics and information Technology goods order 2012” on 3rd October 2012 the following standards for LED lamps are covered.

1. IS 15885 (Part -2/section 13)
2. IS 16102 (Part-1): 2012

As per this order LED manufactures to get their product tested from BIS recognised labs.

Thus, the following electrical parameters and standards should ensure while purchasing LED in future based on the BIS standards. These are the minimum technical requirements for the acceptance of LED. Also, the LED test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 67: LED SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Light source	SMD LED chip	LM 80/IS 16106
2	System Efficacy	>= 110 lumen /watt	IS 16106:2012
3	LED Driver Efficiency	Minimum 85%	
4	Harmonics	Maximum 10%	IS 16102-2-2012
5	Power factor	Minimum 0.95	IS 16102-2
6	Frequency	50 Hz ±3%	LM-79 report
7	Operating voltage	110V – 320V	LM 79 report
8	Surge voltage	>4 kV	LM 79 report
9	Ambient temp	-10 to 50 ° C	LM 79 report
10	Degree of protection	IP 66	IS 10322
11	CRI	Minimum 70	IS 16102 - 2

17. BLDC specification

Normal trend of one ceiling fan working hours with present cost while replacing with BLDC fan and the payback period is given in below table.

Number of working hours/day for a single ceiling fan	**Hours**	9	10	11	12	13	14	15	16	17	18	19	More than 20
Simple payback period after replacement with BLDC	**Years**	5	5	4	4	4	3	3	3	3	3	3	2

The BLDC fan test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 68: BLDC SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Air delivery	215 CMM	IS 374 - 2019
2	Harmonics	Maximum 10%	IS 374 - 2019
3	Power factor	Minimum 0.95	IS 374 - 2019
4	Frequency	50 Hz ±3%	IS 374 - 2019
5	Insulation resistance	>2 MΩ	IS 374 - 2019
6	Speed	350 rpm	IS 374 - 2019
7	Maximum temperature rise	70 ° C	IS 374 - 2019
8	Degree of protection	IP 65	IS 10322

ENERGY AUDIT REPORT OF PUBLIC HEALTH WING, PHYSIOTHERAPY CENTER AND PHARMACY BLOCK, KUMBALANGI

BASIC DATA

The general details of the Panchayath building are given below in table

TABLE 69: BASIC DATA SHEET

SL. NO	PARTICULARS	DETAILS
1	Name of Building	Public Health wing + Physiotherapy + Pharmacy store
	Name of Grama Panchayat/ Block Panchayat/ Municipality office	Kumbalangi Grama Panchayat
3	Name of the Assembly Constituency	Kochi
4	District	Ernakulam
5	Address	Public Health wing, Physiotherapy Building and Pharmacy store CHC Annexe
7	Number of persons working	23

TABLE 70: BUILDING DETAILS

Sl No.	Items	2021 - 22
1	Name of Building	Public Health wing + Physiotherapy + Pharmacy store
2	KSEBL Consumer No:	155612002969
3	KSEBL Section Office:	Palluruthy
4	Connected Load (kW)	7
5	Annual electricity consumption of the office building (kWh)	10320
6	Total built up area of Office Building (Sq.m)	251
7	Specific Energy Consumption (kWh/ Sq.m/year)	41

EXECUTIVE SUMMARY

ENERGY SAVING PROPOSALS

The following table shows the energy saving proposals

TABLE71: ENERGY SAVING PROPOSALS

Sl. no	Energy conservation measures	Annual Energy Savings	Annual Financial Savings	Investment	Simple payback period
		kWh	Rs	Rs	Months
1	Replacement of 04 ceiling fan (60W) with BEE star rated or above (28 W)	384	2688	17500	78
2	Replacement of 4 No:T8, T-12 Tube lights with LED tube (20 W)	230	1610	1250	9
	Total	614	4298	18750	53

KSEB BILL ANALYSIS

TABLE 72: BILL DETAILS

jAN-22	Bi Monthly consumption (kWh)	Average consumption (kWh)	Fixed charges (Rs)	Energy charge (Rs)	Meter rent (Rs)	Duty (Rs)	GST(Rs)	Total amount to be paid (Rs)
1155612002969	1720	1600	455	10320	30	1032	2	11839

ENERGY AND UTILITY DESCRIPTION

18. ELECTRIC CONSUMPTION DATA

TABLE 73: BASELINE DETAILS-ELECTRICITY

Sl. No.	Items	2021 - 22
1	Name of Building	Public Health wing + Physiotherapy + Pharmacy store
2	KSEBL Consumer No:	155612002969
3	KSEBL Section Office:	Palluruthy
4	Tariff	LT-6A/Single
5	Sanctioned Load (kW)	3
8	Annual electricity consumption of the office building (kWh)	10320
9	Annual Energy cost (Rs)	71034

ENERGY PERFORMANCE INDEX (EPI)

EPI is based on the energy consumption The futuristic energy consumption after the implementation of energy saving proposals is given in the tables below.

TABLE 74: ENERGY INDEX

Parameters	Values
Present Annual electricity consumption(kWh/year)	10320
Present annual specific electricity consumption (kWh/m2/year)	41
Present CO_2 emission (Kg/year)	8153
After Energy Saving Implementation	
Expecting annual electricity consumption (kWh/year)	9706
Expecting annual specific electricity consumption (kWh/m2)	39
Carbon Dioxide emission Kg/Year	7667

CONNECTED LOAD DETAILS

LIGHT AND FAN LOADS

Effective lighting is essential for building area to carry out their work properly, yet it is possible to achieve significant savings in this area and improve the quality of the lit environment. Goodlighting design can reduce costs and have the added benefit of decreasing internal heat gains. The ceiling fan is the most commonly used ventilation equipment in the building. The connected load details of light and fan are given in the table below.

TABLE 75: LIGHT & FAN LOADS

Particulars	LED Bulb	**T8**	T5	T12	LED TubeW	C FAN	P. Fan	TABLE FAN	Water Purifier
Watts	9	**36**	28	40	20	60	60	60	20
	Physiotherapy								
Total Nos	3	**0**			3	2	0	0	1
	Pharmacy store								
Total No:	3		1	4	2	1			
	Public Health wing								
		1	1	4		2	1	1	
Total In No:	7	**1**	2	8	5	5	1	1	1
	63	**36**	56	320	100	300	60	60	20
Grand Total in kW	**1.015**								

COMPUTER AND OTHER ELECTRONIC LOADS

This section gives the connected load details of computer and other miscellaneous office loads in the Panchayat building. The following table shows the load details of general appliances.

TABLE 76: COMPUTER AND OTHER ELECTRONIC LOADS

Particulars	**PC**	**PRINTER**	**Fridge**	**Miscellaneous**	**AC**	**Water PUMP motor**
Watts	150	150	200	1000	1200	750
Nos	2	1	1	1000	2	1
Total (W)	300	150	200	1000	2400	750
Grant Total in kW	4.8					

ANNEXURE-1

ENERGY SAVING PROPOSAL – 1

REPLACEMENT OF CEILING FANS ENERGY EFFICIENT BLDC/BEE STAR RATED FANS

Background

A BLDC fan takes in AC voltage and internally converts it into DC using SMPS. The main difference between BLDC and ordinary DC fans is the commutation method. A commutation is basically the technique of changing the direction of current in the motor for the rotational movement. In a BLDC motor, as there are no brushes, so the commutation is done by the driving algorithm in the Electronics. The 1200 mm size BLDC fan at dull speed consumes only around 22 to 27W instead of the present ceiling fan with induction motors that takes 60 to 75W as per the manufactures.

BEE star rated fans consumes around 35W in full speed in 1200mm blade size.

Proposal

Replace the ceiling fans with BLDC/ BEE star rated fans in all the areas especially at the Dormitory and office. The calculation for the savings is given in the table below. The below table shows the replacement with BLDC and BEE star rated ceiling fans which will give the cost comparison between them. The Panchayat can opt for best option among them.

TABLE 77: ENERGY SAVING PROPOSAL-1

Particulars	Unit	With BEE star rated 4 or 5
Power of existing ceiling fans at full speed	Watts	60
Power of replacing fan	Watts	28
Difference in Wattage	Watts	32
Avg No: of working hours/day	Hrs	8
No: of working days per year (Average)	Nos	300
No: of working hours per annum	Hrs	2400
Number of Ceiling Fans operating	Nos	5
kWh Saving per Annum	**kWh**	384
Cost per kWh (Average)	Rs	7
Annual Financial Savings	**Rs**	2688
Cost of replacing Fan per piece	Rs	3500
Investment for replacing Fan	**Rs**	17500
Simple Payback period	**Months**	78

REPLACEMENT OF FLUORESCENT TUBES WITH LED

Background

T5 tube lights consume majority of light loads and shall be replaced with LED tubes

Proposal

By replacing the light fitting with LEDs of appropriate ratings the power consumption will reduce considerably by approximate 50% with the present operating hours. The calculation for the savings, approximate investment cost and payback period is given in the table below.

PARTICULARS	UNIT	T8 TUBE	T-12 TUBE
Power of T5 Fluorescent lights	Watts	36	40
Proposed LED tube	Watts	20	20
Difference in Wattage	Watts	16	20
Avg No: of working hours/tube/day	Hrs	8	8
No: of working days per year (Average)	Nos	300	300
No: of working hours per annum	Hrs	2400	2400
Number of Lights operating*	Nos	1	4
kWh Saving per Annum	kWh	38	192
Cost per kWh(Average)	Rs	7	7
Annual Financial Savings	Rs	266	1344
Cost of LED tube	Rs	250	250
Investment for LED lights	Rs	250	250
Simple Payback period	Months	11	9

Summary

PARTICULARS	UNIT	Total
kWh Saving per Annum	kWh	**230**
Annual Financial Savings	Rs	**1610**
Investment for LED lights	Rs	**1250**
Simple Payback period	Months	**9**

ANNEXURE-3

19. LED specification

The Department of Electronics and information technology issued "Electronics and information Technology goods order 2012" on 3rd October 2012 the following standards for LED lamps are covered.

1. IS 15885 (Part -2/section 13)
2. IS 16102 (Part-1): 2012

As per this order LED manufactures to get their product tested from BIS recognised labs.

Thus, the following electrical parameters and standards should ensure while purchasing LED in future based on the BIS standards. These are the minimum technical requirements for the acceptance of LED. Also, the LED test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 78: LED SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Light source	SMD LED chip	LM 80/IS 16106
2	System Efficacy	>= 110 lumen /watt	IS 16106:2012
3	LED Driver Efficiency	Minimum 85%	
4	Harmonics	Maximum 10%	IS 16102-2-2012
5	Power factor	Minimum 0.95	IS 16102-2
6	Frequency	50 Hz ±3%	LM-79 report
7	Operating voltage	110V – 320V	LM 79 report
8	Surge voltage	>4 kV	LM 79 report
9	Ambient temp	-10 to 50 ° C	LM 79 report
10	Degree of protection	IP 66	IS 10322
11	CRI	Minimum 70	IS 16102 - 2

20. BLDC specification

Normal trend of one ceiling fan working hours with present cost while replacing with BLDC fan and the payback period is given in below table.

Number of working hours/day for a single ceiling fan	**Hours**	9	10	11	12	13	14	15	16	17	18	19	More than 20
Simple payback period after replacement with BLDC	**Years**	5	5	4	4	4	3	3	3	3	3	3	2

The BLDC fan test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 79: BLDC SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Air delivery	215 CMM	IS 374 - 2019
2	Harmonics	Maximum 10%	IS 374 - 2019
3	Power factor	Minimum 0.95	IS 374 - 2019
4	Frequency	50 Hz ±3%	IS 374 - 2019
5	Insulation resistance	>2 MΩ	IS 374 - 2019
6	Speed	350 rpm	IS 374 - 2019
7	Maximum temperature rise	70 ° C	IS 374 - 2019
8	Degree of protection	IP 65	IS 10322

ENERGY AUDIT REPORT OF SAHAKARANA SADANAM, KUMBALANGI

BASIC DATA

The general details of the Panchayath building are given below in table

TABLE 80: BASIC DATA SHEET

SL. NO	PARTICULARS	DETAILS
1	Name of Building	Sahakarana Sadanam
	Name of Grama Panchayat/ Block Panchayat/ Municipality office	Kumbalangi Grama Panchayat
3	Name of the Assembly Constituency	Kochi
4	District	Ernakulam
5	Address	Sahakarana Sadanam CHC Annexe
6	Building area (Sq. M)	139
7	Number of persons working	8

TABLE 81: BUILDING DETAILS

Sl No.	Items	2021 - 22
1	Name of Building	Community Health Centre
2	KSEBL Consumer No:	1155612002975
3	KSEBL Section Office:	Palluruthy
4	Connected Load (kW)	3
5	Annual electricity consumption of the office building (kWh)	972
6	Total built up area of Office Building (Sq.m)	139
7	Specific Energy Consumption (kWh/ Sq.m/year)	7

ENERGY SAVING PROPOSALS

The following table shows the energy saving proposals

TABLE82: ENERGY SAVING PROPOSALS

Sl. no	Energy conservation measures	Annual Energy Savings	Annual Financial Savings	Investment	Simple payback period
		kWh	Rs	Rs	Months
1	Replacement of 04 ceiling fan (60W) with BEE star rated or above (28 W)	384	2688	17500	78
2	Replacement of 4 No:T8, T-12 Tube lights with LED tube (20 W)	230	1613	2750	22
	Total	614	4301	20250	56

The Bimonthly energy and fixed charges represented in Figure below.

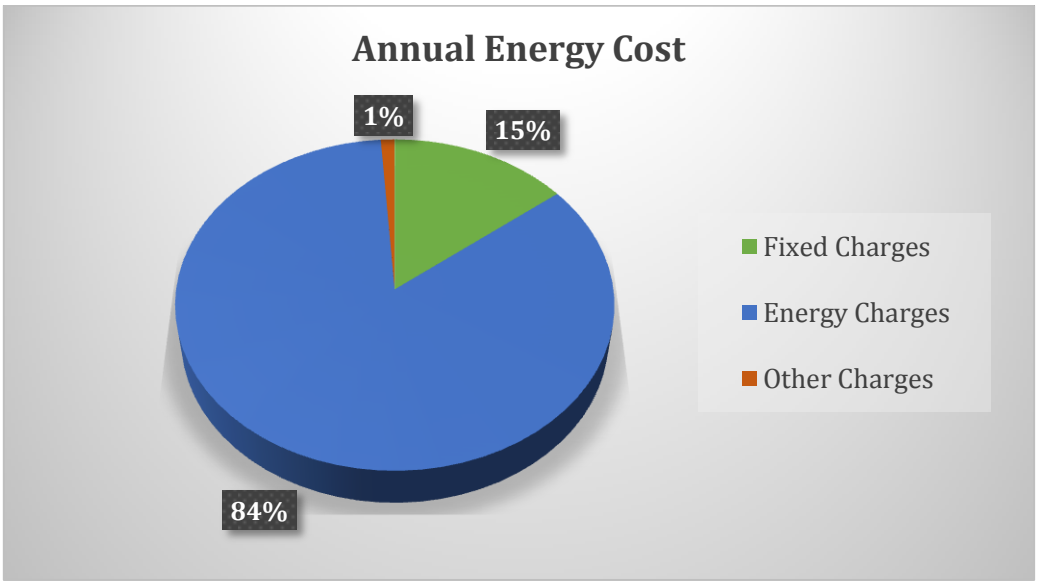


TABLE 83: BILL DETAILS

Month	Bi Monthly consumption (kWh)	Average consumption (kWh)	Fixed charges (Rs)	Energy charge (Rs)	Meter rent (Rs)	Duty (Rs)	GST(Rs)	Total amount to be paid (Rs)
Jann-22	161	160	195	1100	15	110	1	1422

OBJECTIVE

ENERGY AND UTILITY DESCRIPTION

21. ELECTRIC CONSUMPTION DATA

TABLE 84: BASELINE DETAILS-ELECTRICITY

Sl. No.	Items	2021 - 22
1	Name of Building	Sahakaransadanam
2	KSEBL Consumer No:	1155612002975
3	KSEBL Section Office:	Palluruthy
4	Tariff	LT-6A/Single
5	Sanctioned Load (kW)	3
8	Annual electricity consumption of the office building (kWh)	972
9	Annual Energy cost (Rs)	8532

ENERGY PERFORMANCE INDEX (EPI)

EPI is based on the energy consumption The futuristic energy consumption after the implementation of energy saving proposals is given in the tables below.

TABLE 85: ENERGY INDEX

Parameters	Values
Present Annual electricity consumption(kWh/year)	972
Present annual specific electricity consumption (kWh/m2/year)	7
Present CO_2 emission (Kg/year)	768
After Energy Saving Implementation	
Expecting annual electricity consumption (kWh/year)	358
Expecting annual specific electricity consumption (kWh/m2)	2.5
Carbon Dioxide emission Kg/Year	282

CONNECTED LOAD DETAILS

LIGHT AND FAN LOADS

Effective lighting is essential for building area to carry out their work properly, yet it is possible to achieve significant savings in this area and improve the quality of the lit environment. Goodlighting design can reduce costs and have the added benefit of decreasing internal heat gains. The ceiling fan is the most commonly used ventilation equipment in the building. The connected load details of light and fan are given in the table below.

TABLE 86: LIGHT & FAN LOADS

Particulars	LED 9W	T5	T8	T12	LED TubeW	C FAN	P. Fan	W fan	Water Purifier	AC
Watts	9	28	36	40	20	60	60	60	20	1200
Total Nos	15	16	1	8	3	15	1	1	1	2
Total Power(W)	135	448	36	320	60	900	60	60	20	2400
Grand Total	**4.439**									

ANNEXURE-1

REPLACEMENT OF CEILING FANS ENERGY EFFICIENT BLDC/BEE STAR RATED FANS

Background

A BLDC fan takes in AC voltage and internally converts it into DC using SMPS. The main difference between BLDC and ordinary DC fans is the commutation method. A commutation is basically the technique of changing the direction of current in the motor for the rotational movement. In a BLDC motor, as there are no brushes, so the commutation is done by the driving algorithm in the Electronics. The 1200 mm size BLDC fan at dull speed consumes only around 22 to 27W instead of the present ceiling fan with induction motors that takes 60 to 75W as per the manufactures.

BEE star rated fans consumes around 35W in full speed in 1200mm blade size.

Proposal

Replace the ceiling fans with BLDC/ BEE star rated fans in all the areas especially at the Dormitory and office. The calculation for the savings is given in the table below. The below table shows the replacement with BLDC and BEE star rated ceiling fans which will give the cost comparison between them. The Panchayat can opt for best option among them.

TABLE 87: ENERGY SAVING PROPOSAL-1

Particulars	Unit	With BEE star rated 4 or 5
Power of existing ceiling fans at full speed	Watts	60
Power of replacing fan	Watts	28
Difference in Wattage	Watts	32
Avg No: of working hours/day	Hrs	8
No: of working days per year (Average)	Nos	300
No: of working hours per annum	Hrs	2400
Number of Ceiling Fans operating	Nos	5
kWh Saving per Annum	**kWh**	384
Cost per kWh (Average)	Rs	7
Annual Financial Savings	**Rs**	2688
Cost of replacing Fan per piece	Rs	3500
Investment for replacing Fan	**Rs**	17500
Simple Payback period	**Months**	78

REPLACEMENT OF FLUORESCENT TUBES WITH LED

Background

T5 tube lights consume majority of light loads and shall be replaced with LED tubes

Proposal

By replacing the light fitting with LEDs of appropriate ratings the power consumption will reduce considerably by approximate 50% with the present operating hours. The calculation for the savings, approximate investment cost and payback period is given in the table below.

PARTICULARS	UNIT	T8 TUBE	T-12 TUBE
Power of T5 Fluorescent lights	Watts	36	28
Proposed LED tube	Watts	20	20
Difference in Wattage	Watts	16	8
Avg No: of working hours/tube/day	Hrs	8	8
No: of working days per year (Average)	Nos	300	300
No: of working hours per annum	Hrs	2400	2400
Number of Lights operating*	Nos	1	10
kWh Saving per Annum	kWh	38	192
Cost per kWh (Average)	Rs	7	7
Annual Financial Savings	Rs	268.8	1344
Cost of LED tube	Rs	250	250
Investment for LED lights	Rs	250	2500
Simple Payback period	Months	11	22

Summary

PARTICULARS	UNIT	Total
kWh Saving per Annum	kWh	**230**
Annual Financial Savings	Rs	**1613**
Investment for LED lights	Rs	**2750**
Simple Payback period	Months	**22**

ANNEXURE-3

22. LED specification

The Department of Electronics and information technology issued "Electronics and information Technology goods order 2012" on 3rd October 2012 the following standards for LED lamps are covered.

1. IS 15885 (Part -2/section 13)
2. IS 16102 (Part-1): 2012

As per this order LED manufactures to get their product tested from BIS recognised labs.

Thus, the following electrical parameters and standards should ensure while purchasing LED in future based on the BIS standards. These are the minimum technical requirements for the acceptance of LED. Also, the LED test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 88: LED SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Light source	SMD LED chip	LM 80/IS 16106
2	System Efficacy	>= 110 lumen /watt	IS 16106:2012
3	LED Driver Efficiency	Minimum 85%	
4	Harmonics	Maximum 10%	IS 16102-2-2012
5	Power factor	Minimum 0.95	IS 16102-2
6	Frequency	50 Hz ±3%	LM-79 report
7	Operating voltage	110V – 320V	LM 79 report
8	Surge voltage	>4 kV	LM 79 report
9	Ambient temp	-10 to 50 ° C	LM 79 report
10	Degree of protection	IP 66	IS 10322
11	CRI	Minimum 70	IS 16102 - 2

23. BLDC specification

Normal trend of one ceiling fan working hours with present cost while replacing with BLDC fan and the payback period is given in below table.

Number of working hours/day for a single ceiling fan	**Hours**	9	10	11	12	13	14	15	16	17	18	19	More than 20
Simple payback period after replacement with BLDC	**Years**	5	5	4	4	4	3	3	3	3	3	3	2

The BLDC fan test certificates as per the various standards mentioned below should be examined while purchasing.

TABLE 89: BLDC SPECIFICATION

Sl. no	Parameters	Requirements	Applicable IS
1	Air delivery	215 CMM	IS 374 - 2019
2	Harmonics	Maximum 10%	IS 374 - 2019
3	Power factor	Minimum 0.95	IS 374 - 2019
4	Frequency	50 Hz ±3%	IS 374 - 2019
5	Insulation resistance	>2 MΩ	IS 374 - 2019
6	Speed	350 rpm	IS 374 - 2019
7	Maximum temperature rise	70 ° C	IS 374 - 2019
8	Degree of protection	IP 65	IS 10322

24. ABBREVIATIONS

AVG	:	Average
BEE	:	Bureau of energy efficiency
CEA	:	Central electrical authority
CFL	:	Compact fluorescent lamp
CFM	:	Feet cube per minute
CRI	:	Colour rendering index
DB	:	Distribution Board
DG Set	:	Diesel Generator Set
EPI	:	Energy performance index
FD	:	Forced draft
IEEE	:	The Institute of electrical and electronics engineers
IS	:	Indian Standard
KCAL	:	Kilo calorie
KG	:	Kilogram
KSEBL	:	Kerala State Electricity board limited
KVA	:	Kilo Volt Ampere
KVAH	:	Kilo volt Ampere Hour
KVAR	:	Kilo volt-ampere
KW	:	Kilo Watts
KWH	:	Kilowatt-hour
LED	:	Light emitting diode
MAX	:	Maximum
MH	:	Metal halide
ONAN	:	Oil natural air natural
PCC	:	Point of common coupling
PV	:	Photo voltaic
SEC	:	Specific electricity consumption
SFU	:	Switch Fuse Unit
SLD	:	Single Line Diagram
T8	:	Fluorescent tube light with 1-inch diameter
TDD	:	Total demand distortion
THD	:	Total harmonics distortion
TOE	:	Tonne of oil equivalent
UPS	:	Uninterruptible power supply

25. REFERENCES

1. BEE energy audit books
2. CEA regulations of grid connectivity-2007

REPORT ON WORKSHOP BY MAHATA GANDHI NATION COUNCIL FOR RURAL EDUCATION 2022

Date- March 7, 2022
Guest Speaker: M r. Santhosh Thannikkat , District Sustainability Mentor, MGNCRE

Any other guest- Dr Lizzy Mathew, Principal of St.Teresas College, Ernakulam

Brief summary of what the program was-

Mahatma Gandhi National Council of Rural Education organised a workshop on Experiential learning, rural participation, and sustainability for the faculty members and students of St.Teresa's College, Ernakulam, The Mahatma Gandhi National Council of Rural Education has been appointed to a UNESCO chair in experiential learning, job education, and community participation. The program's main goal was to make students aware of and assist in the implementation of experiential learning activities, as well as to deal with rural communities, understand their concerns, encourage rural and social entrepreneurship, mentor and foster social responsibilities, and implement sustainable aspects on campus through water management, energy conservation, and greenery management.

AWARENESS SESSIONS ON GREEN PROTOCOL

Awareness sessions on green protocol to be followed within campus were taken on December 21th 2021 by volunteers, they went to each department for the session. The aim of this green protocol is to make our campus a zero plastic zone in the near future.

Information that was passed on during the awareness session:-

1. Avoid plastic/ spiral binding for projects
2. Avoid plastic covering on gifts / bouquets
3. Ban use of single use plastics.

4. If possible avoid plastic water bottles, tiffin boxes.
5. Encourage use of steel glasses and plates brought from homes, rather than disposible ones.
6. Avoid use of flex for events and programs
7. Avoid plastic decorationdecoration items
8. Encourage use of cloth bags for shopping and other purposes.
9. Encourage use of cloth college bags
10. Switch off lights and fan and close taps after use.
11. Instill a sense of cleanliness and segregation of waste while disposing.

Name of volunteers:-.

1.Ciya George
2.Megha A Menon
3.Anula Menon
4. Akhila T A
5.Anaghe Mary
6.Reshma R
7.Mary Sony K A
8. Bilxan Maria
9.Mary Andrea
10.Rascena K N
11.Rachel Reji
12.Anamika
13.Andrea Abu
14.Thareka Saji Kumar
15. Emifin
16.kathrena Jeni
17.Jayalakshmi
18.Suzeene Jacob
19.Aleena George
20.Angel Jyothi