



T. K. MADHAVA MEMORIAL COLLEGE, NANGIARKULANGARA

Founded 1964

Affiliated to University of Kerala

NAAC Accredited with B Grade



BEST PRACTICES

Green Initiatives: Harithamadhavam

Situated in the lush green and fertile lands of Upper Kuttannadu region, T. K. Madhava Memorial College has a long and enduring relationship with nature. Around 20 % of the 25-acre campus is occupied by buildings, the rest of the campus are categorized as playgrounds, quadrangles, lawns and gardens. A huge area is left in its natural form and acts as a natural habitat for biodiversity and a large variety of species of grasses, herbs, shrubs and trees. TKMMC places a combined impetus on education and environmental-friendly practices to promote sustainable and eco-friendly practices in the campus. The college adheres to the GREEN PROTOCOL executed by the Government of Kerala to collaborate with Swatch Bharath Abhiyan.

The green campus initiatives of our college, fondly called **Harithamadhavam**, are monitored by a Green Protocol Cell, which is headed by Dr. Vinod Haridas, HoD, Department of Botany. Harithamadhavam aims at redefining our environmental culture and developing new paradigms by creating sustainable solutions to environmental, social and economic needs of the students and staff. It is all about sweeping away wasteful inefficiencies and using conventional sources of energies for its daily power needs, correct disposal handling, purchase of eco-friendly supplies and effective recycling program. The workings of the green initiatives can be abridged in the slogan – **“Join the green drive”**.

Harithamadhavam-Objectives

- Striving to develop the institution on a self-sustainable basis in the areas of power, water and cleanliness.
- The faculty, staff and students have to contribute collectively to develop an eco-friendly sustainable campus and disseminate the concept of eco-friendly culture to the nearby community and wherever possible.
- Awareness creations about environmental issues among students and employees including climate change.
- Measure and reduce environmental emissions/footprints

Composition of Green Protocol Cell:

Members	Designation	Department
Dr. Vinod Haridas	Associate Professor	Botany
Dr. Jasmine Anand	Assistant Professor	Zoology
Sri. Saneeshkumar N.	Assistant Professor	Chemistry
Smt. Sinumol S.	Assistant Professor	Mathematics

Smt. Sarsha T. S.	Assistant Professor	English
Dr. Induja I. J.	Assistant Professor	Physics
Dr. V. Sreeja	Assistant Professor	Chemistry

Green Ethics:

Harithamadhavam ensures a set of green ethics to be followed by staff and students, which will result in significant reduction of waste with primary focus on prevention of use of disposables and using reusable alternatives like glass/stainless/porcelain cutleries.

- Avoid the use of all types of disposables (including plastics, paper) in daily life.
- Always use steel cups and containers that can be washed and reused instead of those made of plastic or paper.
- Avoid banned plastic materials; follow government rules in this regard.
- Segregate bio and non-bio degradable in separate colour bins; compost biodegradable at source using simple and appropriate composting devices.
- Keep the non-biodegradable clean and dry and store separately based the type; hand it over to local body systems or scrap dealer for recycling.
- Avoid 'use and throw' carry bags. Always use bags made of eco-friendly materials.
- Always use cloth banners instead of flex.
- Use bamboo baskets or ones made of eco-friendly materials instead of plastic waste baskets.
- Always use eco-friendly materials like leaves, flowers etc for decoration and while making bouquets for felicitating guests.

Green Audit

A green audit of the college campus was initiated to assess the life style, action and its impact on the environment for the first time in 2017. The audit mainly focused on green indicators like consumption of energy in terms of electricity and fossil fuel, quality of soil and water, flora and fauna, waste management practices and carbon foot print of the campus etc. Initially a questionnaire survey was conducted to know about the existing resources of the campus and resource consumption pattern of the students and staff in the college. In order to assess the quality of water and soil, samples were collected from different locations of the college campus and analyzed for its parameters. Collected data was grouped, tabulated and analyzed. Finally, a report pertaining environmental management plan with strength, weakness and suggestion on the environmental issue of campus are documented. Along with the green

audit, soil and water audit was also conducted. Soil and water audit projects the best environmental practices and initiatives taken in the organization at the prescribed site of audit that brings added value to the organization in maintaining the eco-friendly campus to the stakeholders. A second green audit was commissioned in 2022.

Green Practices in Harithamadhavam

Green practices include the efforts and initiatives taken by the institution towards fulfilling the green protocol (ethics) as a part of Harithamadhavam is enlisted below:

- **Haritham: Organic Farming**
- **Vasantha Madhavam: Plastic Neutral Drive**
- **Madhava Vanam: Biodiversity Park**
- **Ardra Madhavam: Alternative Energy & Waste Minimization Initiatives**



FLIPHTML book: The faculty and the students of our college has created a FLIPHTML book for fauna and flora existing in the college campus. The entire bio-rich campus was scanned to collect the biodiversity data. Interestingly more than 150 plant species of trees, shrubs and some wild herbs along with some fauna were identified using relevant scientific literature and subsequently the data was evaluated in the present page. The links are given below:

<https://fliphtml5.com/lwrxi/ilbc>

<https://online.fliphtml5.com/lwrxi/nity/>

Organic farming: Haritham

Organic farming has a great impact on the health of a nation like India by ensuring sustainable development. The increasing toxic food and the non-feasibility of the erstwhile farmlands for cultivation in Kerala was creating a generation whose lifestyle and information base was far removed from nature. We re-introduced the rich farming culture and practices to the younger generations, as a way to retain and propagate our heritage and indigenous knowledge of Onattukara. As a social institution, to have a stronger impact beyond the confines of theory and academics, we stepped out into the nature and give the students and teachers a first-hand experience of the intricacies and the modalities of farming.

About 0.5 acres of college premises was used for vegetable cultivation which was in the front area behind the volleyball court up to the boundary wall at west. About 0.25 acres were used for paddy in two split areas. One was in front of the Chemistry department and another area was to the east of College Auditorium. Vegetable cultivation was maintained by NSS volunteers and Paddy cultivation by Students of Zoology department, with the technical support from the Department of Agriculture. Actual work began with land preparation on 22.11.2017 with the assistance of 'Agro service center', Muthukulam. Official inauguration was held on 19.12.2017. Hon'ble Minister for Agriculture Sri. V.S. Sunil Kumar was supposed to be the Chief Guest but he could not attend due to unexpected official engagements.

Many vegetables including Snake gourd, Bitter gourd, Cow pea, Ladies finger, Chilly, Brinjal, Cabbage, Cauliflower, Cucumber and Tomato were successfully cultivated during December 2017 and harvested during March, April 2018. The sincere physical work contributed by the NSS student leader Mr. Vignesh and the supervision assistance rendered by Ms. Anagha; another student leader played a vital role in the success of organic farming.

Inauguration of Haritham

Haritham, the Jaiva Krishi initiative of TKMMC, under the auspicious of NSS, was formally inaugurated by Mr. V. S. Sunilkumar, Honourable Minister for Agriculture, Government of Kerala on December 19, 2017. Projects such as 'Haritha Keralam' initiated by the government and 'Haritham' launched by the college would become meaningful only when the youth took such programmes forward, he said. Organic farming is the only way to challenge the issues prevailing in the agriculture sector. Major challenges could be taken up only if individuals, organisations and movements join hands and work together to achieve the goal, he added. Pictures from the inaugural ceremony given below:





Although Paddy cultivation was monitored under the able hands of Prof. P. Sreemon, HoD, department of zoology, on an experimental basis. It could not reach the harvesting stage due to unprecedented draught. Since the Department of Agriculture has assured their whole hearted support , we plan to restart the paddy cultivation, along with sesame.

Since organic vegetable farming made use of the drip irrigation and fertigation facilities, good growth could be obtained as evident from the photographs. A profit amounting to Rs. 18000/- could be yielded from the fresh harvest within a short duration of one month.

Being organic, promotion groups in the field like ‘Samabhavana’, Haripad and teachers as well as non-teaching staff of the college purchased almost all the harvest with enthusiasm.

Financial assistance was sought for Vegetable as well as Paddy cultivation. Two schemes were made use for the organic farming. Vegetable garden came under the government scheme for ‘Institutional cultivation under Vegetable Development Scheme- 2017-18’. While

Paddy cultivation was under the scheme 'Project based support for Rice development assistance to educational institution'. The district level committee of Agriculture department held on 21.10.2017, sanctioned Rs. 95775/- which was 75 % of the proposal. The institute was asked to contribute rest 25 % which amounted to Rs. 31,925/- . Including Drip irrigation and Fertigation facility, a total of Rs. 1,30,000/- was funded by the Agriculture Department Haripad. Some pictures of organic farming are shared here.









Workshop On Mushroom Cultivation

An initiative by women empowerment in association with the Department of zoology organized a workshop on mushroom cultivation on 15th December 2021.



Harvesting Of Mushroom

The students of the women's cell in association with the Zoology department have stepped out into mushroom cultivation by utilising the workshop/ training conducted on 15th December 2021. They succeeded in harvesting mushrooms of around 3kg/week and is inaugurated by Dr Sharmila P.P., Principal of the college. The programme was a great success

and getting the ideas from this programme we are to inoculate entrepreneurship values among our students.

<http://blogtkmmc.blogspot.com/2021/12/workshop-on-mushroom-cultivation.html>



T. K. MADHAVA MEMORIAL COLLEGE
Nangiarkulangara
Haripad, Alappuzha Dist,
Kerala State, India, Pin: 690513.



WOMEN
EMPOWERMENT CELL
in association with **Department of Zoology**

Cordially invites you

Two Day Workshop on
MUSHROOM CULTIVATION

Time	: 10.00 AM
Date	: 15 th to 16 th December 2021
Venue	: Seminar Hall (College Hostel)



INAUGURATION
Dr. P. P. Sharmila
Principal
TKMM College Nangiarkulangara

Organising Committee
Dr. S. Sheela (Coordinator & Asst. Prof. of Zoology) Smt. V. Seena (Asst. Prof. of Economics) Dr. T. Sreeja (Asst. Prof. of Chemistry), Smt. Savitha E V (Asst. Prof. of Chemistry), Smt. Renjini S. (Asst. Prof. of Mathematics), Smt. Preetha M V (Asst. Prof. of History), Dr. Jasmine Anand (Asst. Prof. of Zoology), Smt. T. S. Sarsha (Asst. Prof. of English), Dr. V. Sreeja (Asst. Prof. of Chemistry), Smt. Athira M. Raj (Asst. Prof. of English)







Zoology Department engaged in planting plantain samplings



Plantain Cultivation (now)



Agricultural activities of the Department of Chemistry
CAMPUS GARDENING



“Campus Gardening” promoted by the Department of Economics

Apiculture: Job oriented training

Two apiaries are there in the department for providing first hand training in honey -bee culture and honey extraction. Lectures are conducted on the taxonomy and biology of honey bees. The students were then given laboratory exposure using live and preserved specimens of honey bees and the various accessories associated with a typical hive. The apiaries employ rock bees (*Apis dorsata*) for honey production.

These are useful in imparting the attitude and skill for the concept of "earn while you learn" and inculcating the values and virtues of dignity of labor. this activity is being done in association with Women Empowerment Cell.

The Department of Zoology has signed an MoU with the Horticornp beekeeping centre, Mavelikara to undergo comprehensive training on apiculture.



Aparium maintained in the campus



Students and faculty at HortiCorp Beekeeping centre, Mavelikara



Students and faculty attended training at HortiCorp Beekeeping centre, Mavelikara



Students and faculty attended training at Horticornp Beekeeping centre, Mavelikara

FRUIT ORCHARD

It is an ongoing project jointly organized and maintained by the Department of Zoology and Social Forestry Division of the District Forests & Wild life Department. In addition to the existing fruit plants, more than 500 different indigenous fruit tree saplings were planted at a demarcated area with a measurement of 25 cents located around the college auditorium.

Alternative Energy & Waste Minimization Initiatives: Ardra Madhavam

“There are few things certain in life – one is death, second is change and the other is waste.” No one can stop these things to take place in our lives. But with better life management we can prepare ourselves to minimize waste and maximize resources. We practice the philosophy of compassion towards mother earth through the efforts to minimize waste and the maximize the use of alternative sources of energy and other resources.

As we face an expanding population, climate change, and polluted air, water and food, there is growing demand for consensus in society. So that we need to change the way we do things in all sectors, if we are to provide for today’s needs without sacrificing the well-being of future generations. This creates enormous opportunities among the students to make difference and create a sustainable lifestyle. The college appreciates and warrants innovative solutions for sustainable future, and we call our efforts in this direction ‘**Ardra Madhavam-Compassion towards Mother Earth.**

Our slogan is **4Rs: Refuse, Reduce, Reuse & Recycle**

- **Refuse:** Buy only what we life demands.
- **Reduce:** Reduce the amount of garbage generated.
- **Reuse:** Reuse everything to its maximum after properly cleaning it.
- **Recycle:** Convert the recyclable garbage into other useful products.

Solar Power plant

- Photovoltaic (PV) solar energy conversion is currently blooming and it has been harnessed, for it is free and does not harm the environment. Apart from the conventional energy sources, our college utilizes solar energy.
- It is used in various pieces of electrical equipment in the College office and inside the principal’s chamber.
- To add on, we have street lights in various spots inside the campus.



Solar Power Plant

Biogas plant

A biogas plant is a system that provides an oxygen-free environment where bacteria transform biomass into biogas. It can come in different sizes and forms, and it serves to create carbon-neutral energy. Our college produces biogas using well-established technology in a systematic manner, out of food waste and other biodegradable substances and the gas is efficiently used in the college canteen and in Chemistry Lab. The slurry is used as manure for gardening activities



Biogas Plant I



Biogas Plant II

Vermicompost

- Vermicomposting is a natural process whereby earthworms convert waste material with rigid structures into compost. Over the past few years our institution has given priority for the proper disposal of solid waste, especially food waste. We have a small vermicompost unit, right beside Chemistry laboratories to ensure management of food waste in our campus.
- The dry leaves litter in the campus is used in composting rather than burning.
- The compost produced in this green process is used as a natural fertilizer for enhancing plant growth in the vegetable gardens maintained by the students.



Vermicompost

Incinerator

To cater to the needs of more than 75% girls students, we installed two sanitary napkins disposable machine/incinerator to promote menstrual hygiene and save environment. The initiative has been taken to endorse save disposal of used sanitary napkins and to encourage adolescents', girls, women to adopt healthy lifestyle. As the sanitary napkins are non-biodegradable, it has several hazardous impacts on environment. This simple addition to the toilets is highly appreciated by girls and lady staff. The use of incinerator has removed the inhibitions among girls on attending college during menstruation and has made them comfortable attending the class during those days. There are also no blockages of toilets due to sanitary waste disposal into the toilets.

Rain water harvesting

Water scarcity is serious problem throughout the world for both urban & rural community. Urbanization, industrial development & increase in agricultural field & production

has resulted in overexploitation of groundwater & surface water resources and resultant deterioration in water quality. The conventional water sources namely well, river and reservoirs, etc. are inadequate to fulfil water demand due to unbalanced rainfall, while the rainwater harvesting system investigate a new water source.

Our campus is located in a locality where drinking water scarce especially during summer season. In order to tackle the situation, we have two well planned rain water harvesting tanks.



Maintenance of water bodies and sacred grove in the campus

- The College is blessed with three ponds in the campus. The ponds serve as the main source of water to plants particularly in the summer season. The College **preserves the pond** through well maintenance and timely cleaning.
- The ponds serve as natural habitats for indigenous fishes, culture fishes and aquatic flora.
- The institution also takes very enthusiastic efforts to maintain a sacred grove near this pond to further eco-consciousness among students. The **sacred grove** plays an important role in ecosystem services such as clean environment i.e., air, soil and water conservation, flora and fauna conservation, carbon sequestration, temperature control and conservation of traditional knowledge. They are therefore, the epicenter of ecological conservation research and policy regarding conservation and management of forest at state and national levels. The sacred grove on the campus is a rich abode of biodiversity. It is home to a variety of local fauna and flora. It presents a luxuriant

canopy of trees with climbing plants, underlying shrubs and herbs. The floor is laden with rich layers of humus.



Scenic picture of one of the ponds in the campus



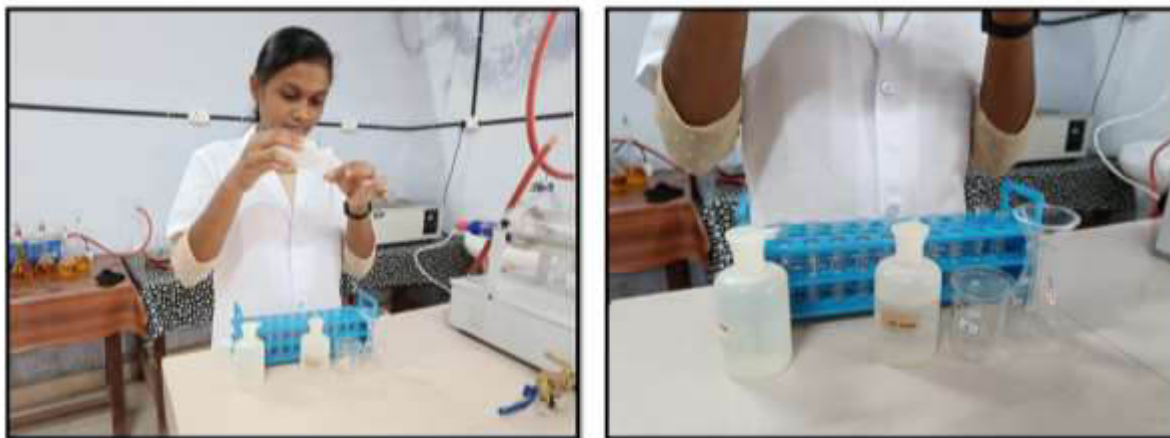
Sacred Grove maintained in the campus

Laboratory Waste Disposal

- As per the guidelines of University of Kerala, the department of chemistry conducts all the practical in micro analytical manner; In micro scale analysis, the practicals are carried out using minimum quantity of chemicals, reagents, solvents etc. (generally use 5 mg/ml) or very small surfaces of material, called spot plates (generally less than 1cm²). Hence by adopting this mode of laboratory practice, we are able to minimize the

use of chemicals and there by minimize the danger of hazardous chemicals to our environments.

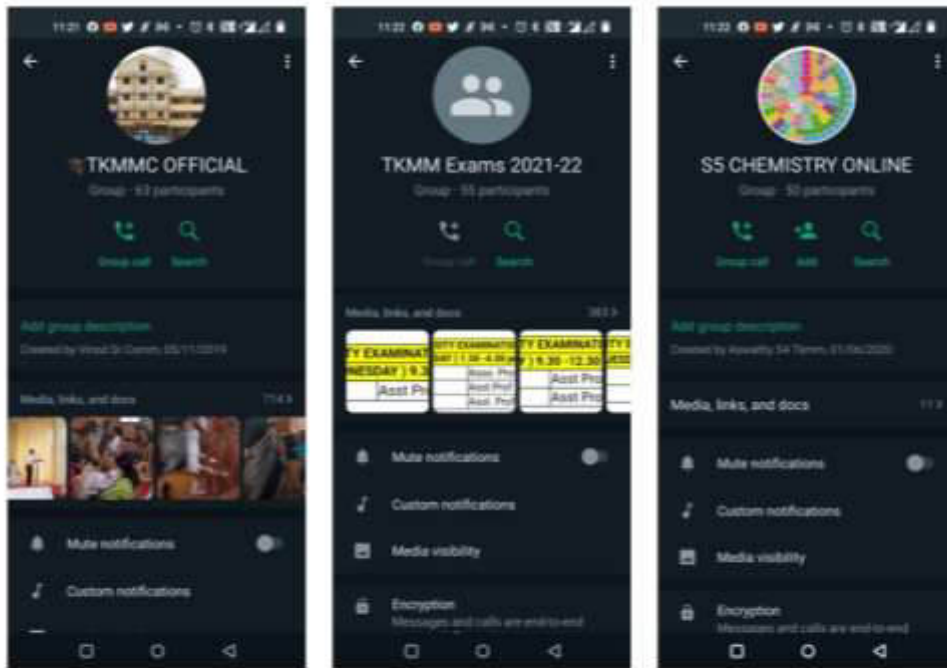
- The aqueous waste generated is collected in a tank and processed using traditional methods. The water so obtained is used for irrigating the agricultural activities conducted by the Department of Chemistry.



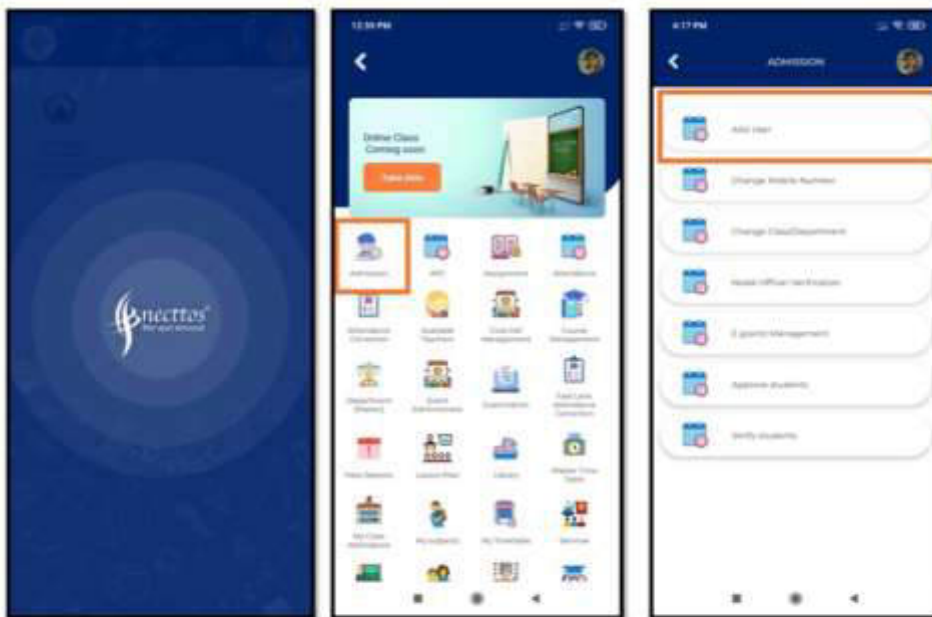
Students performing Chemistry lab using microanalytical techniques

Paperless Office

- The use of paper is minimized by using digital communication methods. All office work on paperless concept by digital notices and information through mail, Google groups, WhatsApp Groups, etc. as much as possible. High speed Wi-Fi facility is also provided for this.
- Other practices like, re-use of one-sided paper for notes, sketches, rough work, rough printouts, etc.; cashless transactions, and utilizing multi user printer at central administrative locations of the Institute office also aims at reducing the use of papers.
- The PTA meetings, students' notices, staff notices are given through WhatsApp messages.
- The college has installed an all-in-one educational institution management software designed software named- NECTTOS, which enhance the communication between students, faculty and parents.



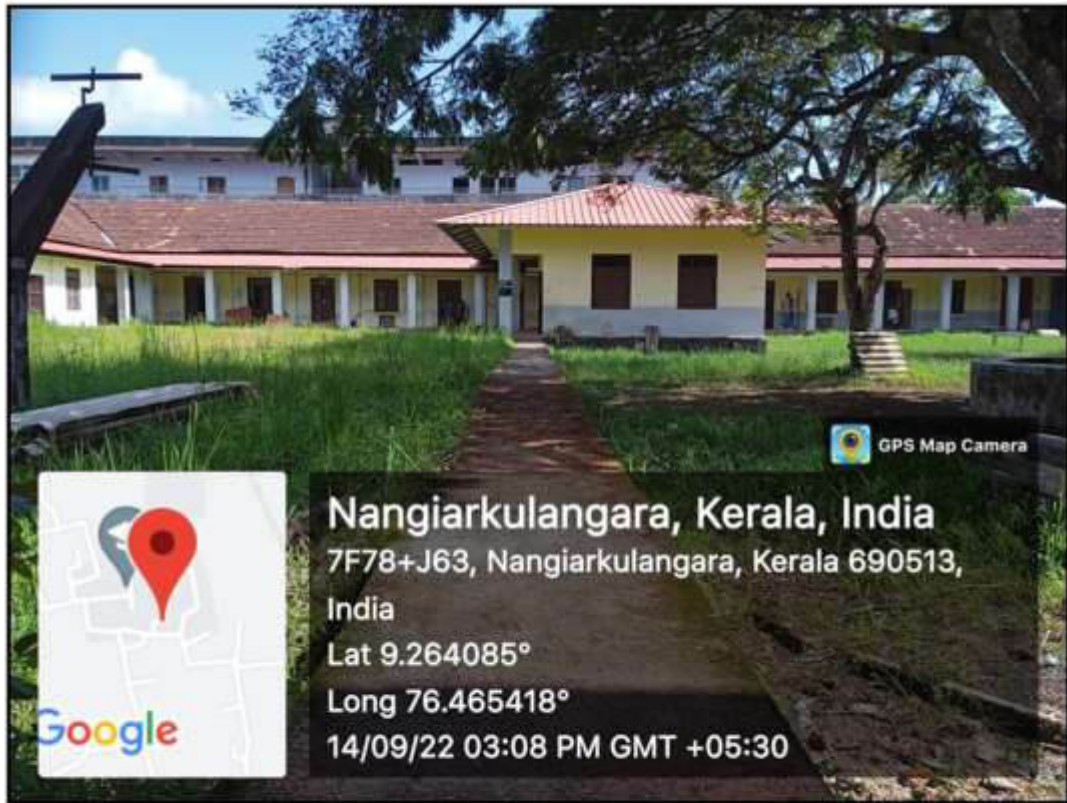
Sample pictures of WhatsApp groups used for communication



NECTOS: All-in-one educational institution management software

Pedestrian-friendly pathways

- TKMMC campus follows the pedestrian-friendly pathways in all the buildings. The pedestrian ways are interlocked for better water holding capacity to promote draining of water in an eco-friendly manner, thereby helping in replenishing underground water.
- Pedestrian-friendly pathways are properly marked with suitable logo/sign.



Pedastrian friendly pathways

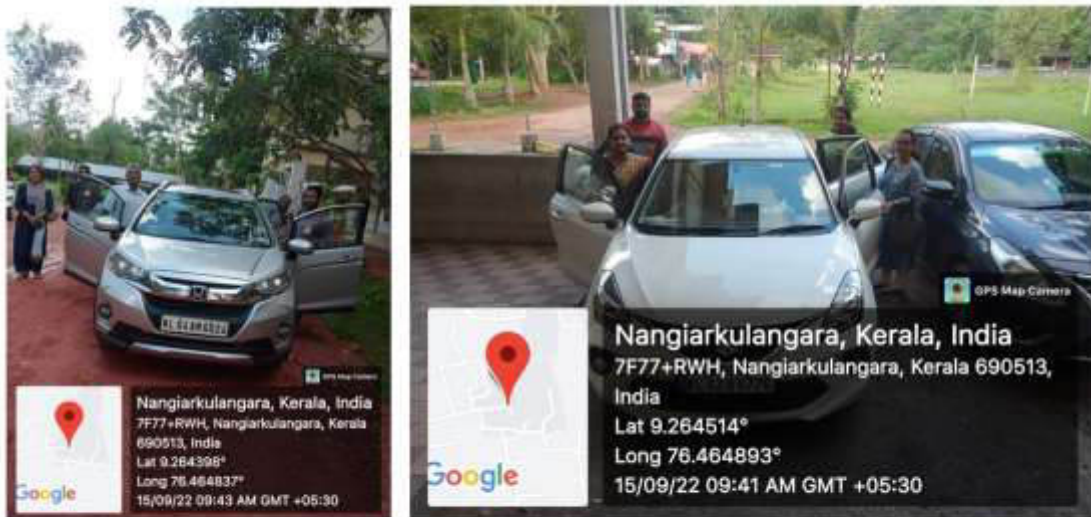
Initiatives to limit emissions

- The college encourages the staff and students to frequently use **public transport**, **bicycles**, etc. to limit the emissions.





- As an eco-friendly, economical and socializing initiative, the college encourages **carpooling** as the most sensible option for staff commuting from the similar distant locality to their common destination, the college.



Carpooling initiatives by staff

Plastic Neutral Drive: Vasantha Madhavam

Plastic is everywhere in our daily lives; despite an increasing awareness of the threat, it poses to the environment. It's in our food, in hygiene products, in the packaging of most of what we buy and, unfortunately, also in our oceans. We can't live without it, or at least drastically reduce its consumption. In the last 10 years, we have manufactured more plastics than in all human history.

Colleges generate enormous amounts of plastic waste, which is toxic to people and the environment, and never goes away. The plastic responsibility awareness led us to think about the concept of plastic neutrality. In this context, the college started a Plastic Neutral Drive (Vasantha Madhavam) which aims to a spring by measurably reducing plastic waste and pollution in college campus and its toxic impacts on people and the environment.

- The college is continuously committed to work towards minimizing plastic-usage. In the campus, there is complete **ban on single-use plastic** like plastic bags, plastic water bottles, disposable cups, plates and plastic straws in class room, labs, canteens and in the institution's premises.
- The college encourage students as well as staff to **use steel lunch boxes** and carry a water bottle with them rather than drink from packaged bottles. The college canteen has also started using steel plates and cups.
- The **use of flex made out of Polyvinyl chloride (PVC)**, commonly used as publicity materials for various programmes that can cause immense health and environmental issues has been completely **banned** in the college. The college encourage the use of alternatives like **cloth banner**, flex made of **Pandanus and coconut palm leaves**. Also, the **use of electronic banners and brochures** are supported.
- The students who **received training** from our college for **wealth from waste** concept have received first prize for their worthy products in an exhibition competition from ICAR-CPCRI (Central Plantation Crop Research Institute), Kayamkulam.



Cloth banner making



Banner making from coconut leaves



Banner made of coconut leaves



Vegetable bouquet for welcoming guests



Bouquet made of vegetables grown by students



First prize from CPCRI

Waste to wealth (Preparation of eco-friendly material using waste material)

TKMMC play an important role in creating environmental awareness amongst the future generation. Women Empowerment Cell along several departments spearheads many programmes and projects so that students can be empowered to participate and take up

meaningful environmental activities and projects. Preparation of eco-friendly products out of waste material forms an important activity which enables us to make the useless things more useful.

Recycling and reusing the valuable waste material can result in development of fantastic and usable products. Rather than putting these waste materials into the landfills, various innovative and creative ideas can be put together to being something new and useful.

Various waste material used for making useful products

- Plastic bottles, tyres
- Pens and refills
- Old CDs and DVDs
- Old Newspaper, old Notebooks, Cardboard and book cover, Paper plates, spoons and disposable glass
- Dry stem of plants and trees
- Mango seeds and Seeds of various fruits
- Old curtains, table covers and used clothes
- Used foil paper
- Glass bottles, Strings, beads and sequences from used clothes & jewellery etc.

Along with these a large number of products are also being used which are somehow felt to be useless.

List of items that can be made using waste

A large number of products can be made using waste products. Some of such products and items are listed below.

- Paper & cloth bags
- Paper pen
- Puppets
- Puzzles and games
- Mat from cloth
- Mat from paper
- Paper Jewelry - Toys - Puppets - Wall decorations - Decorative items, etc.
- Foil paper art
- Wall decoration using - Matchsticks - Toothpicks, string & sequences - Paper and charts, etc
- Jewelry using - Paper - Paper mache - old beads and string, etc.
- Flower vase using – used pen, paper, old plastic bottles etc.
- Animals using - Mango seeds - Chikoo seeds - Walnut shells - Pistachio shells etc
- Face masks using –Charts, Paper plates etc
- Folders and files using - old cloth, Card boards, etc.
- Pen stands using - CDs & DVDs, pens, paper etc.
- Mobile holder- plaic bottles, paper cups
- Flowers using – Cloth, Toffee wrappers, etc.
- Stuff toys using Cloth, Cotton, Sponge, etc



Bottle art (Materials used: old glass bottles, used plastic bottles)



Bags, file cover (Materials used: used clothes, curtains etc)



Toys & jewellery (Materials used: discarded wood)



Traditional home appliances from leaves, barks etc



Wall decoration using used CDs & DVDs



Paper and bottle art

Some additional artifacts made by students out of waste





Outcome of the activities taken up

- Maximum use of waste material and Minimum harm to atmosphere.
- Reduction in cutting of trees for paper.
- Development of innovation & creativity.
- Development of aesthetic appreciation.
- Clean & beautified surroundings.
- Development of ability to create, develop and present in form of an object.

MADHAVA VANAM - BIODIVERSITY PARK

Conservation and sustainable use of biodiversity are fundamental to ecologically sustainable development. Biodiversity is part of our daily lives and livelihood, and constitutes resources upon which families, communities, nations and future generations depend. Biological diversity is fundamental to the fulfillment of human needs. Loss of biodiversity has serious economic and social costs for any country. Biodiversity has been destroyed substantially in India, during recent times due to anthropogenic activities. Biodiversity Park is nothing but the effort to make balance between the nature and the mankind. As it is clear that the most important factor behind extinction and disappearance of any flora and fauna is human population and such kind of unbalance has disturbed the whole ecological and biological world.

The TKMMC campus is uniquely situated in the biologically diverse and fertile upper Kuttannadu region, in the coastal area of Arabian Sea, which is known for its verdant surroundings and a salubrious climate. With the focus of preserving and nurturing the biodiversity in the campus, a Biodiversity Park Project, fondly called as '**Madhava Vanam**' was initiated as a green initiative (Harithamadhavam) under auspicious of Department of Zoology. The project is in tune with the conservation ethos of the Indian society. In the years to come this park will be an island of biodiversity conservation within local community.

Aims and Objectives

The Biodiversity Park has been established keeping in view so many points regarding conservation of flora and fauna.

- To establish an area for awareness and environmental education for students with special emphasis to biodiversity of the region.
- To compile the relevant data to prepare and publish "Green Book" for the species which have been conserved and multiplied successfully in the park.
- To provide a suitable research/education ground for the local public, students and researchers in order to understand the biodiversity of the local ecosystem.

The northern part of the campus, comprising an area of about one acre is demarcated as a green zone consisting of a novel concept of following features:

- Sacred grove
- Perennial natural ponds
- Butterfly Park
- Fruit Orchard

- Medicinal herbal garden.
- Nakshathra Vanam





SACRED GROVE

The sacred grove on the campus is a rich abode of biodiversity. It is home to a variety of local fauna and flora. It presents a luxuriant canopy of trees with climbing plants, underlying shrubs and herbs. The floor is laden with rich layers of humus. The animals found in the sacred grove include those that live there permanently, such as snakes, frogs, and lizards, as well as higher groups of fauna including birds, which nest and make dens there and lower groups of animals who visit the grove occasionally in search of food, shelter, etc. Many rare, endemic, and endangered species as well as economically significant plants with fruit-bearing and medicinal characteristics can be found in sacred groves. Sacred groves located in the midst of populated areas are in charge of preserving soil and water in addition to ecological importance. Ponds and wells nearby the sacred groves are perennial, which makes this obvious.

Trees of TKMMC

Sl. No	Botanical name	Family	Malayalam name	Malayalam ലിപി	English com. Name	Uses
1	Artocarpus hirsutus	Moraceae	Anjili	ആഞ്ഞിലി	Wild Jack	Timber
2	Olea dioica	Oleaceae	Edana	എടന	Indian Olive	Febrifuge
3	Millettia pinnata	Fabaceae	Ungu	ഉങ്ങ്	Indian Beach tree	Skin disorders, fuel wood
4	Alstonia scholaris	Apocyanaceae	Ezhilam Pala	എഴിലം പാല	Indian Witch tree	Skin disorders, pencil
5	Adenantha pavonina	Fabaceae	Manjadi		Red Lucky Seed	Nitrogen fixation
6	Terminalia arjuna	Combretaceae	Neeramaruthu	നീർ മരുത്	Arjun tree	Cardio-protective
7	Terminalia catappa	Combretaceae	Thallithenga	തല്ലിതേങ്ങ	Indian almond	Diaphoretic
8	Tectona grandis	Lamiaceae	Thekku	തേക്ക്	Teak	Timber & Lumbar
9	Vitex negundo	Lamiaceae	karinochi	കരിനൊച്ചി	chinese chaste tree	Analgesic, pesticidal
10	Saraca asoca	Caesalpiniaceae	Asokam	അശോകം	Asoka tree	Uterine bleeding
11	Cinnamomum malabratrum	Lauraceae	Vazhana	വഴന	Malabar leaf	Stomach pain
12	Diospyros buxifolia	Ebenaceae	Elichevi	എലിചെവി	East Indian Ebony	Anti-microbial
13	Delonix regia	Fabaceae	Madagascar Vaka	വാക്	Flame tree	Wood for agri tools
14	Peltophorum pterocarpum	Fabaceae	Srilankan Konna	ശ്രീലങ്കൻ കോണ	Yellow flame	Dysentery
15	Spathodea campanulata	Bignoniaceae	Fountain maram	ഫൗണ്ടിൻ മരം	African tulip tree	Paper manufacture
16	Lagerstroemia speciosa	Lythraceae	Ven- thekku	വെന്തേക്ക്	Crape-myrtle	Diabetes
17	Putranjeeva roxburghii	Putranjeevaceae	Putranjeeva	പുത്രൻജീവ	Lucky bean tree	Female Rejuvenative
18	Roystonea regia	Arecaceae	kuppi pana	കുപ്പിപ്പന	Cuban royal palm	Thatch, horticultural
19	Calophyllum inophyllum	Guttiferae	Cheru punna	ചെറുപുണ്ണ	Beach laurel	shade tree, crude oil
20	Mangifera indica	Anacardiaceae	Maavu	മാവ്	Mango tree	Fruit, fuel wood
21	Nephelium lappaceum	Sapindaceae	Rambutan	രംബൂട്ടാൻ	Rambutan	Fruit
22	Grewia asiatica	Tiliaceae	Kottanga	കൊട്ടങ്ങ	Falsa fruit	Summer fruit
23	Polyalthia longifolia	Annonaceae	Arana maram	അരണ മരം	False asoka	antipyretic
24	Strychnos nuxvomica	Loganiaceae	Kaanjiram	കാഞ്ചിരം	Poison-nut	Erectile dysfunction
25	Lanea coromandelica	Anacardiaceae	Udi	ഉദി	Indian Ash tree	astringent
26	Couropita guianensis	Lecythidaceae	Nagalingam		Cannonball Tree	Hypertension, tumours, pain
27	Barringtonia racemosa	Lecythidaceae	samudrakkaya		Powder-puff tree	skin diseases
28	Manilkara Zapota	Sapotaceae	Sapota		Sapodilla	Edible fruit

HERBS

Sl.No	Item	Common Name	Scientific name
1		<i>Basil</i>	<i>Ocimum tenuiflorum</i>
2		<i>white orchid-tree</i>	<i>Bauhinia acuminata</i>
3		<i>Areli, Karaveera,</i>	<i>Nerium oleander</i>
4		<i>Golden-trumpet</i>	<i>Allamanda cathartica</i>

PERENNIAL NATURAL PONDS

Our campus has five natural ponds, two of which perennial in nature supporting rich fauna and flora. Among the five ponds, two of them are maintained as “**Conservative Ponds**” for native fishes. Majority of the vegetation belongs to marshy hydrophytes found along the shallow marginal water. Algae and the floating plants dominate at the deeper part.

FLORA

- **Free Floating Plants** like *Eichornia crassipes*, *Lemna perpusilla*, *Azolla pinnata*, *Pistia stratiotes*
- **Rooted Plants with Floating leaves** like *Nymphaea nouchali*, *Numphoides hydrophylla*
- **Rooted Submerged Plants** like *Utricularia aurea*, *Cabomba caroliniana*, *Ottelia alismoides*, *Hydrilla verticillate*, *Ceratophyllum demersum*
- **Marginal Plants** like *Najas gramineae*, *Cyperus pilosus*, *Pandanus amaryllifolius*

HERBAL MEDICINAL GARDEN

The Departments of Zoology and Botany are being engaged in a joint venture with the “**State Medicinal Plants Board**” to conserve the precious medicinal herbs of the region in a garden. Here terracotta or mud pots and organic potting mixture were used for planting. The garden is comprised of 27 varieties of medicinal plants.

LIST OF MEDICINAL PLANTS IDENTIFIED FROM THE CAMPUS

Scientific name	Local name	Family
<i>Syzigium jambolans</i>	ഞാവൽ	Myrtaceae
<i>Psidium guajava</i> ,	പേര	Myrtaceae
<i>Persea macrantha</i> ,	കുളമാവ്	Lauraceae
<i>Vetiver zizynoides</i> ,	രാമച്ചം	Poaceae
<i>Vitex negundo</i>	കരിനൊച്ചി	Verbenaceae
<i>Desmodium gangeticum</i> ,	ഒരില	Fabaceae
<i>Aegle marmelos</i> ,	കൂവളം	Rutaceae
<i>Stereospermum chelenoides</i> ,	പാതിരി	Bignoniaceae
<i>Gmelina arborea</i> ,	കുമ്പിൾ	Fabaceae
<i>Ficus racemosa</i> ,	അത്തി	Moraceae

<i>Premna serratifolia,</i>	മുഞ്ഞ	Lamiaceae
<i>Cardiospermum helicacabum,</i>	ഉഴിഞ്ഞ	Sapindaceae
<i>Piper longum,</i>	തിപ്പലി	Piperaceae
<i>Terminalia arjuna,</i>	നീർമരുത്	Combretaceae
<i>Bauhinea purpurea/ acuminata</i>	മന്ദാരം	Caesalpiniaceae
<i>-Emblica officinalis,</i>	നെല്ലി	Phyllanthaceae
<i>Oroxylem indicum,</i>	പലകപയ്യാനി	Bignoniaceae
<i>- Curcuma longa ,</i>	മഞ്ഞൾ	Zingiberaceae
<i>Curculigo orchioides,</i>	നിലപ്പന	Hypoxidaceae
<i>Zingiber officinale,</i>	ഇഞ്ചി	Zingiberaceae
<i>Hemigraphis colorata,</i>	മുറികൂടി	Acanthaceae
<i>Garcinia indica,</i>	കുടംപുളി	Cluciaceae
<i>Adathoda vasica,</i>	ആടലോടകം	Acanthaceae
<i>Cassia fistula,</i>	കണിക്കൊന്ന	Caesalpiniaceae
<i>Citrus limoni,</i>	ചെറുനാരകം	Rutaceae
<i>Clitoria ternata,</i>	ശംഖുപുഷ്പം	Fabaceae
<i>Ocimum tenuiflorum,</i>	തൂളസി	Lamiaceae

FRUIT ORCHARD

It is an ongoing project jointly organized and maintained by the Department of Zoology and **Social Forestry Division of the District Forests & Wild life Department.** In addition to the existing fruit plants more than 500 different indigenous fruit tree saplings were planted at a demarcated area with a measurement of 25 cents located around the college auditorium. They are:

Common name	Scientific name
Indian blackberry	<i>Syzigium jambolans</i>
Guava	<i>Psidium guajava</i>
Indian gooseberry	<i>Emblica officinalis</i>
Lemon	<i>Citrus limoni</i>
Mango	<i>Mangifera indica</i>
Sapodilla	<i>Achras zapota</i>
Malabar plum	<i>Syzygium cumini</i>
Bananas	<i>Musa paradisiaca</i>
Malabar Tamarind	<i>Garcinia cambogia</i>
Custard Apple	<i>Annona squamosa</i>
Breadfruit	<i>Artocarpus altilis</i>

white mulberry

Morus alba



Herbal Garden





BUTTERFLY PARK

The campus harbours rich diversity of butterflies and their food plants. Zoology and Botany departments in association with Alappuzha Natural History Society (an NGO) maintain a part of the campus on the northern part and adjacent to the sacred grove as a haven for the butterflies - the butterfly park. Special food plants preferred by the caterpillars and imago are planted there.

The frequently observed Butterfly species from our campus are noted in the below list.

Family: Papilionidae

Common name	Scientific name
Common rose	<i>Pachliopta aristolochiae</i>
Common Jay	<i>Graphium doson</i>
Tailed Jay	<i>Graphium agamemnon</i>
Lime Butterfly	<i>Papilio demoleus</i>
Blue Mormon	<i>Papilio polymnestor</i>
Common Mormon	<i>papilio polytes</i>
Citrus swallowtail	<i>Papilio demodocus</i>

Family : Pieridae

Common name	Scientific name
Common Emigrant	<i>Catopsilia Pomona</i>
Mottled Emigrant	<i>Catopsilia pyranthe</i>
Common Grass Yellow	<i>Eurema hecabe</i>
Common Jezebel	<i>Delias eucharis</i>
Common Bushbrown	<i>Mycalesis perseus</i>
Common Palmfly	<i>Elymnias hypermnestra</i>
Common Fourring	<i>Ypthima huebneri</i>
Common Fivering	<i>Ypthima baldus</i>
Tawny Coster	<i>Acraea terpsicore</i>
Three Spot Grass Yellow	<i>Eurema blanda</i> \

Family :Nymphalidae

Common name	Scientific name
Southern Rustic	<i>Cupha erymanthis</i>
Common Sailor	<i>Naptis hylas</i>
Grey Pansy	<i>Junonia atlites</i>
Chocolate Pansy	<i>Junonia iphita</i>
Blue Tiger	<i>Tirumala limniace</i>
Plain Tiger	<i>Danaus chrysippus</i>
Common Indian Crow	<i>Euploea core</i> `
SmoothEyed Bushbrown	<i>Orsotriaena medus</i>
Blue Moon Butterfly	<i>Hypolimnas bolina</i>

Family:Lycaenidae

Common name	Scientific name
Red Pierrot	<i>Talicauda nyseus</i>
Common Cerulean	<i>Jamides celeno</i>
Gram Blue	<i>Euchrysops cnejus</i>

Family: Hesperidae

Common name	Scientific name
Common Banded Demon	<i>Notochrypta paralysos</i>

Family: Geomitridae.

Common name	Scientific name
Blue Tiger Moth	<i>Dysphania percota</i>

OTHER IMPORTANT FAUNA

FISHES

Common name	Scientific name
Striped Panchax	<i>Aplocheilus lineatus</i>
Snakehead Murrel	<i>Channa striatus</i>
Climbing perch	<i>Anabas testudineus</i>
Brown Spike-Tailed Paradise Fish	<i>Pseudosphromenus dayi</i>
Walking Catfish	<i>Clarias batrachus</i>

AMPHIBIANS

Common name	Scientific name
Common Indian toad	<i>Duttaphrynus melanisticus</i>
Indian skittering frog	<i>Euphlyetis cyanophlyeti</i>
Indian bull frog	<i>Hoptobatrachus tigerinus</i>

REPTILES

Common name	Scientific name
Indian black turtle	<i>Melanochelys trijuga</i>
Indian flap shell turtle	<i>Lissemys punctata</i>
Indian garden lizard	<i>Calotes versicolor</i>
Common green forest lizard	<i>Calotes Calotes</i>
Coastal day gecko	<i>Cnemapsis littoralis</i>
Spotted house gecko	<i>Hemidactylus parvimaclulatus</i>
Four clawed gecko	<i>Gehyra mutilate</i>
Keeled grass skink	<i>Dasia carinata</i>
Monitor lizard	<i>Varanus bengalensis</i>
Bridled mabuya	<i>Heremites vittatus</i>
Common house gecko	<i>Hemidactylus frenatus</i>
Bearded dragons	<i>Pogona</i>

SNAKES

Common name	Scientific name
Thurstons worm snake	<i>Gerrhopilus thurstoni</i>
Common wolf snake	<i>Lycodon auticus</i>
Buff stripped keel back	<i>Amphiesma stolatum</i>
Checkered keel back	<i>Fowlea piscotor</i>
Common krait	<i>Bungarus caeruleus</i>
Daboia siamensis	<i>Daboia siamensis</i>
Russell's viper	<i>Daboia russelli</i>
Indian rat snake	<i>Ptyas mucosa</i>

AVES

RESIDENTS BIRDS

Sl no	Common name	Scientific name
1	Indian pond heron	<i>Ardeola grayii</i> (Sykes, 1832)
2	Cattle egret	<i>Bubulcus ibis</i> (Linnaeus, 1758)
3	Little egret	<i>Egretta garzetta</i> (Linnaeus, 1766)
4	Intermediate egret	<i>Ardea intermedia</i> Wagler, 1829
5	Gray heron	<i>Ardea cinerea</i> Linnaeus, 1758
6	Purple heron	<i>Ardea purpurea</i> Linnaeus, 1766
7	Black-headed ibis	<i>Threskiornis melanocephalus</i> (Latham, 1790)
8	Asian openbill stork	<i>Anastomus oscitans</i> (Boddaert, 1783)
9	Indian cormorant	<i>Phalacrocorax fuscicollis</i> Stephens, 1826
10	Red wattled lapwing	<i>Vanellus indicus</i> (Boddaert, 1783)
11	Pheasant -tailed jacana	<i>Hydrophasianus chirurgus</i> (Scopoli, 1786)
12	Bronze-winged jacana	<i>Metopidius indicus</i> (Latham, 1790)
13	White-breasted Waterhen	<i>Amaurornis phoenicurus</i> (Pennant, 1769)
14	Black bittern	<i>Ixobrychus flavicollis</i> (Latham, 1790)
15	Common redshank	<i>Tringa totanus</i> (Linnaeus, 1758)
16	Common greenshank	<i>Tringa nebularia</i> (Gunnerus, 1767)
17	Brahminy Kite	<i>Haliastur indus</i> (Boddaert, 1783)
18	Shikra	<i>Accipiter badius</i> (Gmelin, JF, 1788)
19	Spotted owlet	<i>Athene brama</i> (Temminck, 1821)
20	Rock pigeon	<i>Columba livia</i> Gmelin, JF, 1789
21	Eurasian collared dove	<i>Streptopelia decaocto</i> (Fridvaldszky, 1838)
22	Spotted dove	<i>Streptopelia chinensis</i> (Scopoli, 1786)
23	Southern coucal	<i>Centropus sinensis</i> (Stephens, 1815)
24	Asian koel	<i>Eudynamis scolopaceus</i> (Linnaeus, 1758)
25	White- naped woodpecker	<i>Chrysocolaptes festivus</i> (Boddaert, 1783)
26	Brown headed barbet	<i>Psilopogon zeylanicus</i> (Gmelin, JF, 1788)
27	Blue-cheeked bee -eater	<i>Merops persicus</i> Pallas, 1773
28	Common kingfisher	<i>Alcedo atthis</i> (Linnaeus, 1758)
29	White-throated kingfisher	<i>Halcyon smyrnensis</i> (Linnaeus, 1758)
30	Indian roller	<i>Coracias benghalensis</i> (Linnaeus, 1758)
31	Rose-ringed parakeet	<i>Psittacula krameri</i> (Scopoli, 1769)
32	Rufous treepie	<i>Dendrocitta vagabunda</i> (Latham, 1790)
33	House crow	<i>Corvus splendens</i> Vieillot, 1817
34	Large-billed crow	<i>Corvus macrorhynchos</i> Wagler, 1827
35	Black drongo	<i>Dicrurus macrocercus</i> Vieillot, 1817
36	Greater racket-tailed drongo	<i>Dicrurus paradiseus</i> (Linnaeus, 1766)
37	Black-hooded oriole	<i>Oriolus xanthornus</i> (Linnaeus, 1758)
38	Common barbbler	<i>Argya caudata</i> (Dumont, 1823)
39	Purple sunbird	<i>Cinnyris asiaticus</i> (Latham, 1790)
40	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i> (Linnaeus, 1766)
41	White- rumped munia	<i>Lonchura striata</i> (Linnaeus, 1766)
42	White -browed wagtail	<i>Motacilla maderaspatensis</i> Gmelin, JF, 1789
43	Ashy prinia	<i>Prinia socialis</i> (Sykes, 1832)
44	Indian robin	<i>Copsychus fulicatus</i> (Linnaeus, 1766)
45	Oriental magpie robin	<i>Copsychus saularis</i> (Linnaeus, 1758)
46	Red-vented bulbul	<i>Pycnonotus cafer</i> (Linnaeus, 1766)
47	Common myna	<i>Acridotheres tristis</i> (Linnaeus, 1766)

48	Common Hill Myna	<i>Gracula religiosa</i> Linnaeus, 1758
49	Ashy drongo	<i>Dicrurus leucophaeus</i> (Vieillot,1817)
50	White cheeked barbet	<i>Psilopogon viridis</i> (Boddaert ,1783)
51	Purple swamphen	<i>Porphyrio porphyrio</i> (Linnaeus,1758)
52	Great egret ardea	<i>Ardea alba</i> (Linnaeus,1758)
53	Little cormorant	<i>Microcarbo niger</i> (Vieillot,1817)
54	Rock dove	<i>Columba livia</i> (Gmelin,1789)
55	Greater coucal	<i>Centropus sinensis</i> (Stephens,1815)
56	Black -rumped flameback	<i>Dinopium benghalense</i> (Linnaeus,1758)
57	Jungle babbler	<i>Turdoides striata</i> (Dumont,1823)
58	Jungle crow	<i>Corvus macrorhynchos</i> (Wagler,1827)
59	African fish eagle	<i>Haliaeetus vocifer</i> (Daudil,1800)
60	Malabar grey hornbill	<i>Ocyrceros griseus</i> (Latham,1790)
61	Anhinga	<i>Anhinga anhinga</i> (Linnaeus,1766)
62	Greater flameback	<i>Chrysocolaptes guttacrastatus</i> (Tickell,1833)
63	Black sunbird	<i>Chalcomitra amethystine</i> (Shaw,1812)
64	Common emerald dove	<i>Chalcophaps indica</i> (Linnaeus,1758)
65	Mottled wood owl	<i>Strix ocellata</i> (Lesson,1839)
66	Long-eared owl	<i>Asio otus</i> (Linnaeus,1758)
67	Greater flameback	<i>Chrysocolaptes guttacrastatus</i> (Tickell,1833)
68	Eurasian hoopoe	<i>Upupa epops</i> (Linnaeus,1758)
MIGRANT SPECIES		
69	Lesser whistling duck	<i>Dendrocygna javanica</i> (Horsfield, 1821)
70	Common hoopoe	<i>Upupa epops</i> (Linnaeus, 1758)
71	Ruddy-breasted crake	<i>Zapornia fusca</i> (Linnaeus, 1766)
72	Common sandpiper	<i>Actitis hypoleucos</i> (Linnaeus, 1758)
73	Wood sandpiper	<i>Tringa glareola</i> Linnaeus, 1758
74	Booted eagle	<i>Hieraaetus pennatus</i> (Gmelin, JF, 1788)
75	Western yellow wagtail	<i>Motacilla flava</i> Linnaeus, 1758
76	Indian paradise flycatcher	<i>Terpsiphone paradisi</i> (Linnaeus, 1758)
77	Rosy starling	<i>Pastor roseus</i> (Linnaeus, 1758)
78	Orange-headed thrush	<i>Geokichla citrina</i> (Latham, 1790)

MAMMALS

Common name	Scientific name
Common palm Civet	<i>Paradoxurus hermapphroc</i>
Indian grey mangoose	<i>Herpestes edwardsi</i>
Jungle striped squirrel	<i>Funsmbulus triatus</i>
Bandicoot rat	<i>Bandicota Bengalensis</i>
Indian gerbit	<i>Tatera indica</i>
Roof rat	<i>Rattus rattus</i>
Field rat	<i>Millardia meltada</i>
Short nosed fruit bat	<i>Cynopterus brachyotis</i>
Yellow hose bat	<i>Siolophilus kuhli</i>

A conservation project is on the anvil with the wetland ecosystem of the campus including the ponds and associated marsh lands. One project proposes to conserve the faunal diversity of native fish species and the other one target on the biodiversity of local hydrophytes.

Nakshathra Vanam

Another testimony for the deep commitment of TKMMC towards the ideal of environment protection, is a new initiative wherein a small part of the Madhava vanam has been set apart for growing a variety of plants and the plants chosen in such a way that they are associated with the various stellar constellations in the path of the moon in the sky. These constellations are referred to in ancient Indian astronomy as *Nakshathras* which may be literally translated as “stars”. As per Indian traditions, there are as many as 27 *Nakshathras* and these are associated with certain trees in some mythical way. Hence this part has been designated as *Nakshthra Vanam*. The students are encouraged to plant a divine tree matching their star on their birthdays, instead of distributing sweets or cutting a cake. This endeavour has helped in increasing the commitment of students towards planting of and taking care of these plants. In future, benches would be placed in the Nakshathra Vanam which would allow students to relax and study in the garden during their free time.

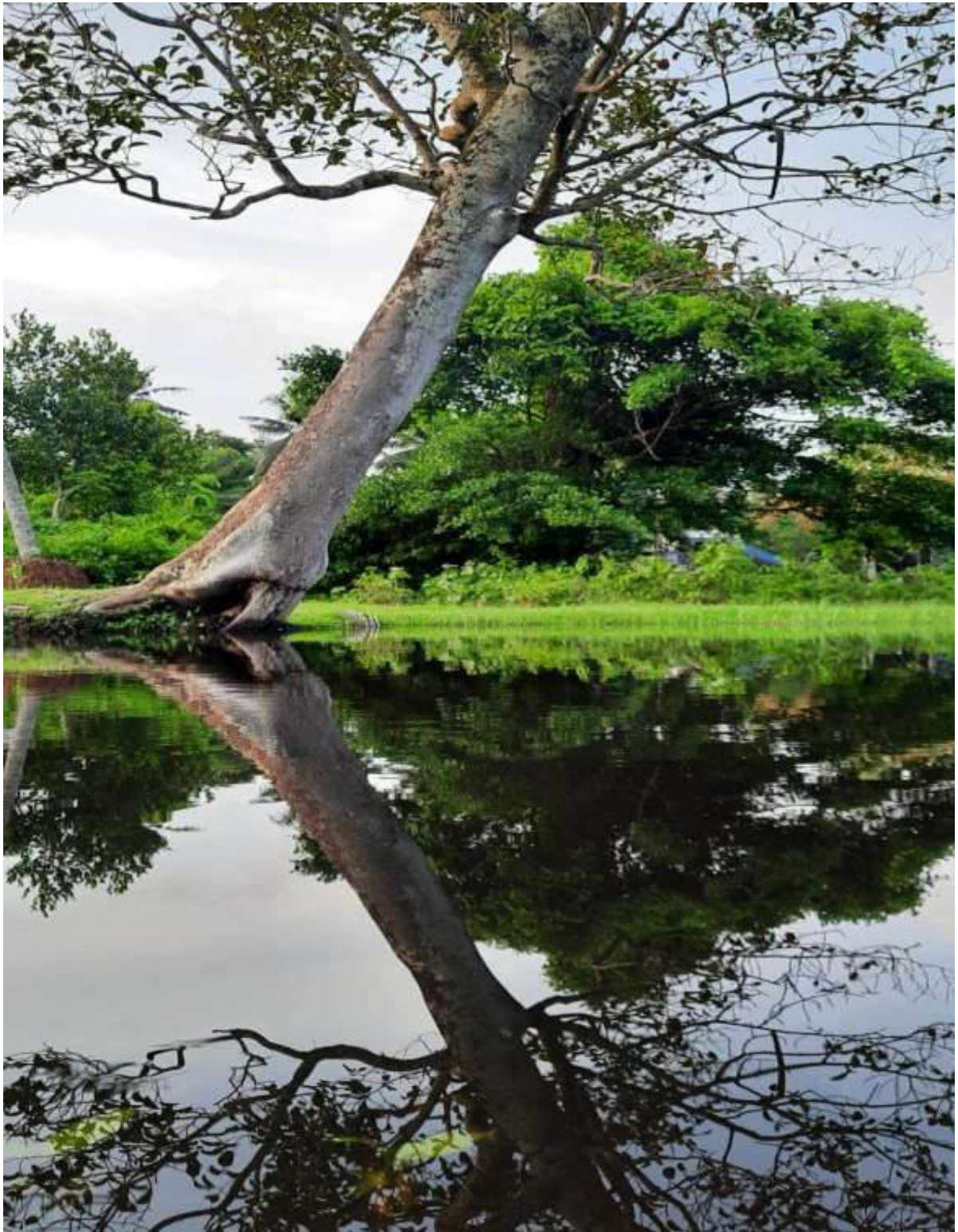
The Nakshatra Garden has various rare species of trees such as Karingali, Karimaram, Naakam, Ithi, Ambazham, Koovalam, Neermaruthe, Vayyankatha, Vellapan, Vanni, Karimpana, Kadambu, Ilippa etc. The names of all star plants compiled are listed below:

STAR Plants				
	STAR	Malayalam Name	Botanical Name	Family
1	Aswathy	Kanjiram	<i>Strychnos nux-vomica</i>	Loganiaceae
2	Bharani	Nelli	<i>Phyllanthus emblica</i>	Phyllanthaceae
3	Karthika	Athi	<i>Ficus racemosa</i>	Moraceae
4	Rohini	Njaval	<i>Syzygium cumini</i>	Myrtaceae
5	Makayiram	Karingali	<i>Acacia catechu</i>	Fabaceae
6	Thiruvathira	Karimaram	<i>Diospyros ebenum</i>	Ebenaceae
7	Punartham	Mula	<i>Bambusa bambos</i>	Poaceae
8	Pooyyam	Arayal	<i>Ficus religiosa</i>	Moraceae
9	Ayyillyam	Naaga maram	<i>Mesua ferrea</i>	Calophyllaceae
10	Makam	Peral	<i>Ficus benghalensis</i>	Moraceae
11	Pooram	Plash	<i>Butea monosperma</i>	Fabaceae
12	Uthram	Ithi	<i>Ficus microcarpa</i>	Moraceae
13	Atham	Ambazham	<i>Spondias pinnata</i>	Anacardeaceae
14	Chithira	Koovalam	<i>Aegle marmelos</i>	Rutaceae
15	Chothi	Neermaruthu	<i>Terminalia cuneata</i>	Combretaceae
16	Visakham	Vayyamkatha	<i>Flacourtia Montana</i>	Salicaceae
17	Anizham	Elanji	<i>Mimusops elengi</i>	Sapotaceae
18	Thrikketta	Vetti	<i>Aporosa lindleyana</i>	Phyllanthaceae
19	Moolam	Pine	<i>Vateria indica</i>	Dipterocarpaceae
20	Pooradam	Vanchi	<i>Salix tetrasperma</i>	Salicaceae
21	Utharadam	Plavu	<i>Artocarpus heterophyllus</i>	Moraceae
22	Thiruvonum	Erukku	<i>Calotropis gigantean</i>	Apocyanaceae
23	Avittam	Vahnni	<i>Prosopis juliflora</i>	Fabaceae
24	Chathayam	Kadambu	<i>Neolamarckia cadamba</i>	Rubiaceae
25	Poororuttathi	Thenmavu	<i>Mangifera indica</i>	Anacardiaceae
26	Uthrattathi	Karimpana	<i>Borassus flabellifer</i>	Arecaceae
27	Revathi	Ilippa	<i>Madhuca longifolia</i>	Sapotaceae

SCARED GROVE IN THE CAMPUS



PERENNIAL NATURAL POND IN THE CAMPUS



BUTTERFLY DIVERSITY



BLUE MOON BUTTERFLY (*Hypolimnas bolina*)



BLUE MORMON (*Papilio polymnestor*)



BLUE TIGER MOTH (*Dysphania percota*)



TAILED JAY (*Graphium agamemnon*)



BLUE TIGER (*Tirumala limniace*)



LIME BUTTERFLY (*Papilio demoleus*)



ASCIA (*Ascia monuste*)



THREE SPOT GRASS YELLOW (*Eurema blanda*)



SMOOTH EYED BUSHBROWN (*Orsotriaena medus*)



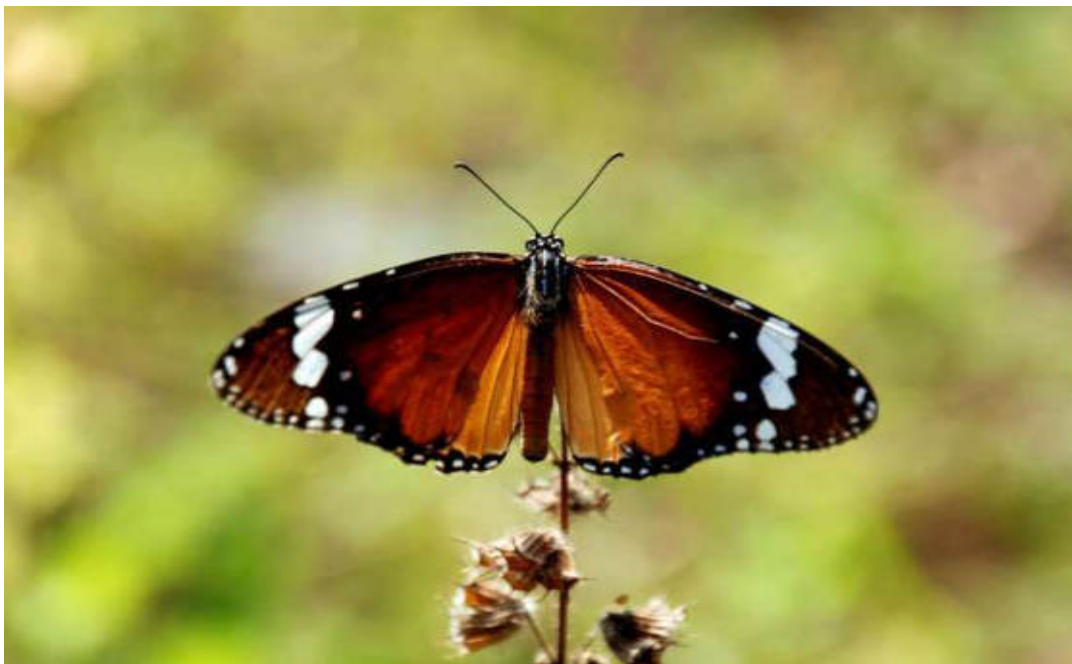
TAWNY COSTER (*Acraea terpsicore*)



SOUTHERN RUSTIC (*Cupha erymanthis*)



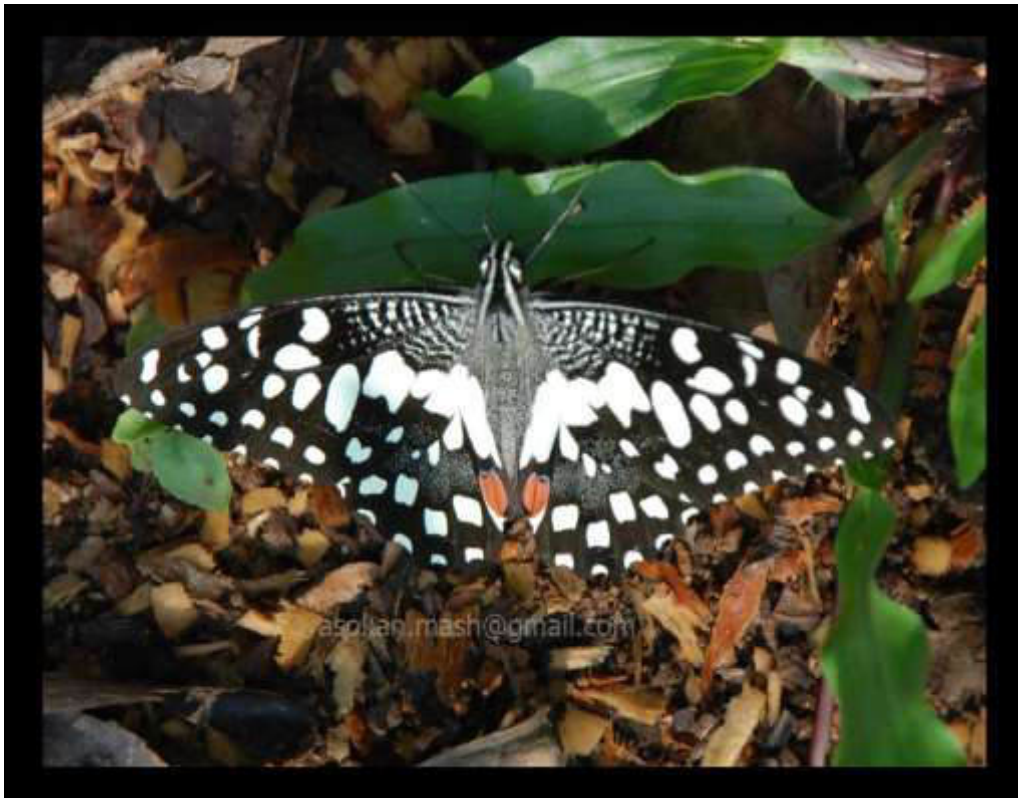
PLAIN TIGER (*Danaus chrysippus*)



RED PIERRROT (*Talicada nyseus*,)



CITRUS SWALLOWTAIL



CERULEAN BLUE



COMMON MORMON



GREY PANSY



COMMON JEZEBEL (*Delias eucharis*)



COMMON-FOURING



COMMON MORMON



COMMON EMIGRANT



AVIAN DIVERSITY

ASHY DRONGO (*Dicrurus leucophaeus*)



COMMON MYNA (*Acridotheres tristis*)



RED VENTED BULBUL(*Pycnonotus cafer*)



WHITE-CHEEKED BARBET (*Megalaima viridis*)



ASIAN PARADISE FLYCATCHER (*Terpsiphone paradisi*)



PURPLE SWAMP HEN (*Porphyrio porphyro*)



BRONZE - WINGED JACANA (*Metropidius indicus*)



GREAT EGRET(*Ardea modestea*)



INDIAN CORMORANT(*Phalacrocorax fuscicollis*)



LITTLE CORMORANT(*Microcarbo niger*)



LITTLE EGRET(*Egretta garzetta*)



WHITE- BREASTED WATERHEN(*Amaurorni sphenicurus*)



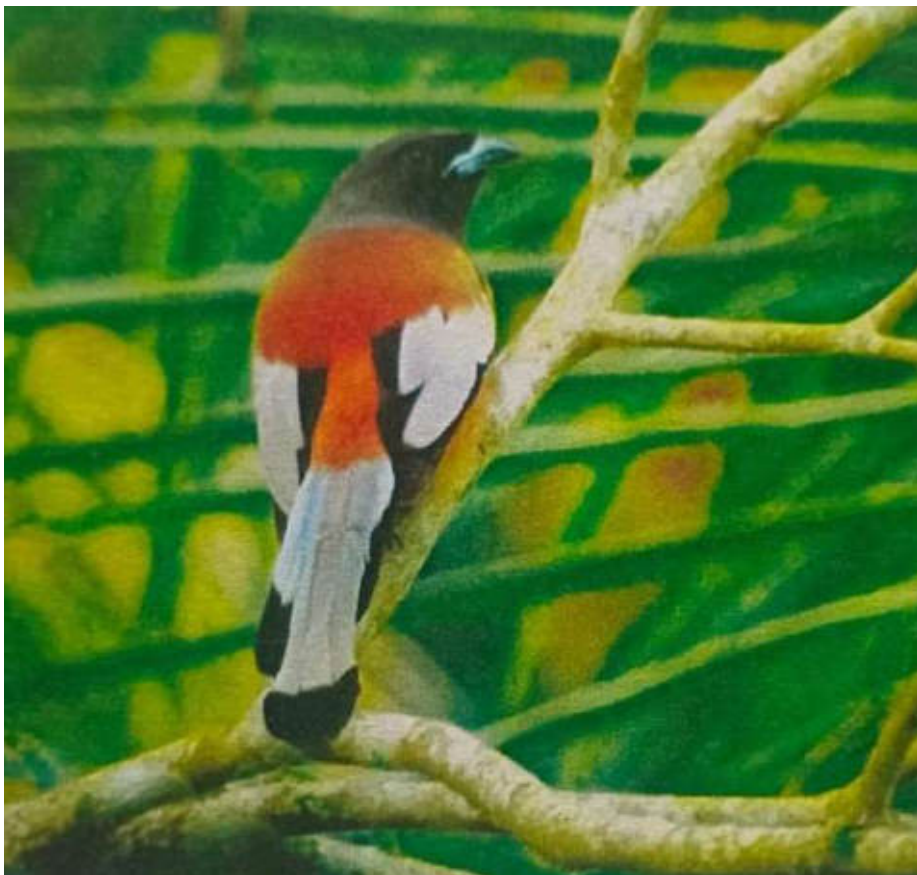
ROCK DOVE (*Columba livia*)



BLACK – HOODED ORIOLE(*Oriolus xanthornus*)



RUFOUS TREEPIE (*Dendrocitta vagabunda*)



GREATER COUCAL (*Centropus sinensis*)



GRATEE RACKET-TAILED DRONGO (*Dicrurus paradiseus*)



BLACK DRONGO(*Dicrurus macrocercus*)



BLACK – RUMPED FAMEBAK (*Dinopium benghalens*)



ORIENTAL MAGPIE - ROBIN (*Copsychus saularis*)



BRAHMINY KITE(*Haliastur indus*)



RED – WATTLED LAPWING(*Vanellus indicus*)



ASIAN KOEL

(Eudynamys scolopaceus)



JUNGLE BABBLER*(Turdoides striata)*



JUNGLE CROW(*Corvus macrorhynchos*)



LITTLE EGRET(*Egretta garzetta*)



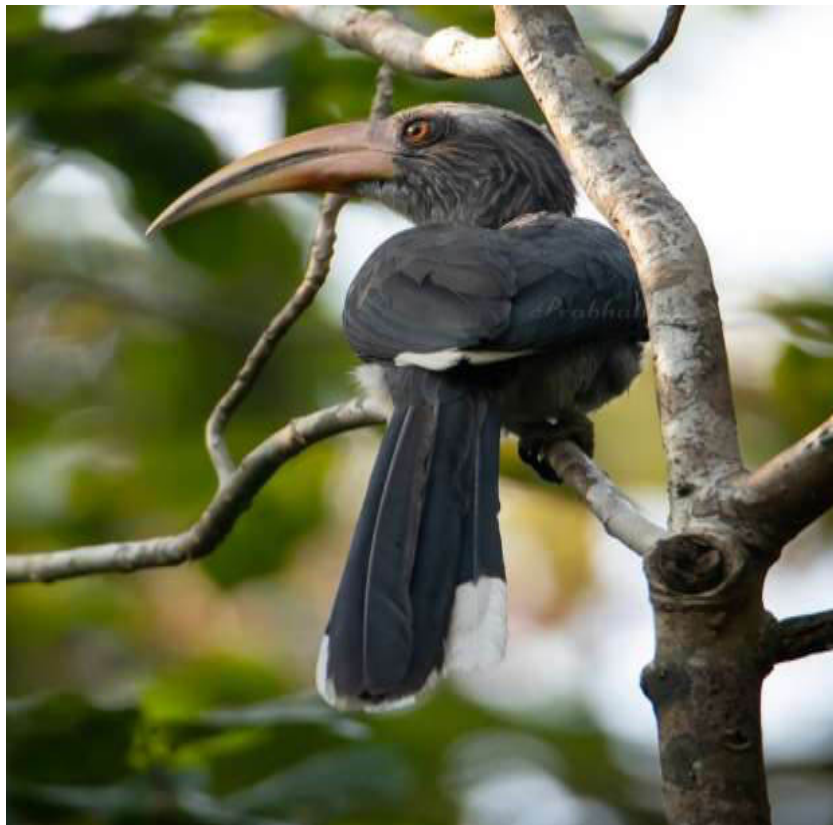
AFRICAN FISH EAGLE(*Haliaeetus vocifer*)



SWAMPHEN(*Porphyrio poliocephalus*)



MALABAR GREY HORNBILL(*Ocyceros griseus*)



INDIAN POND HERON(*Ardeola grayii*)



ANHINGA(*Anhinga anhinga*)



GREATER FLAMEBACK(*Chrysocolaptes guttacrystatus*)



INTERMEDIATE EGRET(*Ardea intermedia*)



BLACK SUNBIRD(*Leptocoma sericea*)



COMMON EMERALD DOVE(*Chalcophaps indica*)



MOTTLED WOOD OWL(*Strix ocellata*)



LONG-EARED OWL(*Asio otus*)



GREATER FLAMEBACK(*Chrysocolaptes guttacrastatus*)



HOUSE CROW(*Corvus splendens*)



KINGFISHER



EURASIAN HOOPOE (*Upupa epops*)



PURPLE HERON (*Ardea purpurea*)



BLACK HEADED IBIS(*Threskiornis melanocephalus*)



EGRETS FROM OUR CAMPUS



REPTILIAN DIVERSITY

MONITOR LIZARD(*Varanus bengalensis*)



BRIDLED MABUYA(*Trachylepis vittata*)



COMMON KRAIT(*Bungarus caeruleus*)



DABOIA SIAMENSIS (*Daboia siamensis*)



COMMON HOUSE GECKO (*Hemidactylus frenatus*)



BEARDED DRAGONS(*Pogona*)



PALLIATIVE REPORT



T K Madhava Memorial College, Nangiarkulangara

NSS UNIT NO: 39A&B



“Not Me but You “

UNIVERSITY OF KERALA



SUBMITTED BY: -

PREETHA M V

**NSS PROGRAMME OFFICER
TK MADHAVA MEMORIAL COLLEGE,
NANGIARKULANGARA**

“*Sparsam*: a pain & palliative care unit”

Sparsam, the pain and palliative care unit of TK Madhava Memorial College, is a role model enterprise of its kind to be set up in an arts and science colleges in the state. It started functioning with an objective of spreading the importance of palliative care among the students of the college, and has been able to conquer greater heights than expected within a short period of time. Ever since its inception. *Sparsam* has been able to extend its reach to all classes of people irrespective of their age, culture and gender. The forum works on the sole principle of moulding up a group of socially committed, enthusiastic young people and indulging them in numerous services for the betterment of mankind. Having flagged-off with a small number in its workforce, the unit has successfully been able to multiply its intake to around hundreds of students from every batch of the college.

Sparsam, the palliative enterprise, by the NSS volunteers of TK Madhava Memorial College aims to extend relief to those patients who are beyond the level of cure but demand long-term care and attention. We aim to offer relief from pain through constant care and support physically and emotionally. Extending the support to the family to cope with the situation we have moved a long way in palliative care. It works on the sole principle of moulding up a group of socially committed, enthusiastic young people and indulging them in numerous services for the betterment of mankind. Having flagged-off with a small number in its workforce, the unit has successfully been able to multiply its intake to around hundreds of students from every batch of the college. The unit started functioning in the year 2019 with a small group of students under the leadership of Ms. Preetha . The unparalleled far-sightedness and immeasurable level of selfless dedication of our leader has always inspired the team on all grounds.

Volunteers follows a regular pattern of visiting people with serious illness or bedridden, give them care and console in order to mitigate their pain and sufferings. The volunteers were given proper guidance and training by the experts. Palliative days have been observed every year. Volunteers in general and a group of twenty-five volunteers are specially allotted for palliative activities. Volunteers attended palliative training programmes at university and district levels and also give trainings to others. *Sparsam* is always been very keen in inciting commitment towards the society.

Associates

Sparsam is actively undertaking palliative care initiatives in association with Pallium India, a national registered charitable trust (No. 693/IV/2003) that strives to alleviate health related suffering. Pallium India is a national registered charitable trust formed in 2003 aimed at providing quality palliative care and effective pain relief for patients in India. Dr. M. R. Rajagopal is the founder and chairman of Pallium India. Dr. M. R. Rajagopal is an Indian palliative care physician referred to as the ‘father of palliative care in India’ in honour of his significant contribution to the palliative care scene in India. Pallium India works in collaboration with several national and international organisations to improve the accessibility and affordability of pain relief drugs (opioids) and other low-cost medicines, to

ensure the availability of palliative care services in India and to improve the quality of palliative care services provided by the healthcare and allied health care professionals. In February 2016, Pallium India was accredited by Social Justice Department of Government of Kerala.

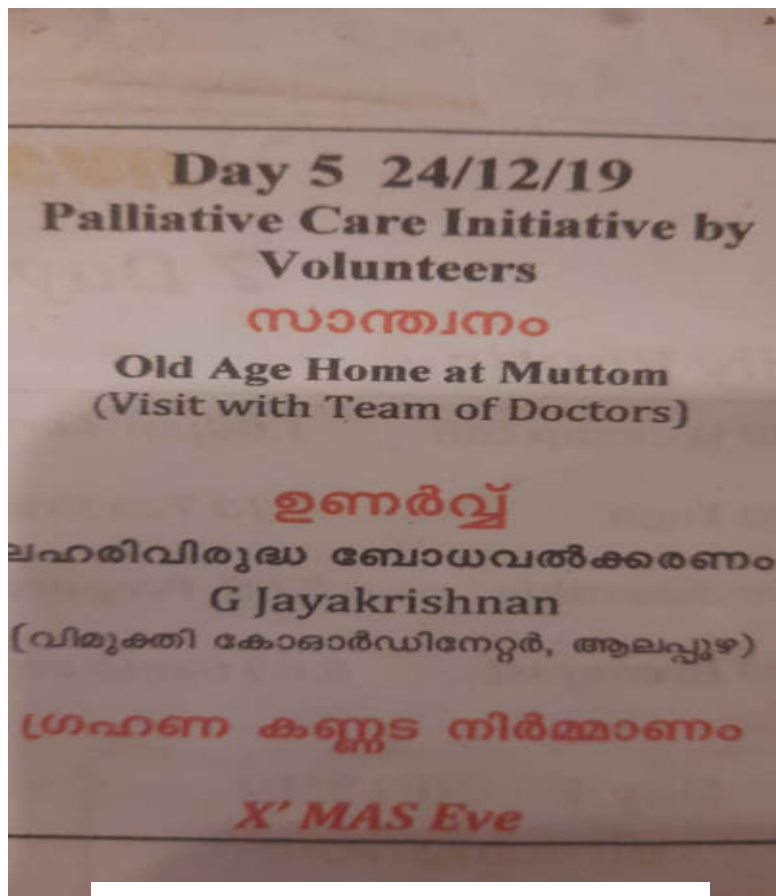
1. Inauguration

Old age is a golden age. Fulfilling it as our duty, the state government and different NGOs have built old age homes across the lengths and breadths of Kerala to house nearly tens or hundreds of old people and dependents from various cross-sections of the society. At Muttom Old Age Home, the toll of inmates comes to around 80 and they are given special care and aids by an efficient panel of staff and servants. Collaborating all its celebrations and activities with *Sparsam*, the authorities have always received our volunteers with warmth.



Sparsam: Inaugural Ceremony





Brochure for the Old Age Home Visit

The formal inauguration of *Sparsam* was at Santwanam Old Age Home, Muttom by Mr. Shafeeq M, President, Alappuzha District Initiative in Palliative Care on 25th Dec 2019. Volunteers have expressed their filial piety to the senior inmates and shared pieces of cakes among the Santwanam members as a token of love. NSS Programme Officers Ms. Preetha M V and Dr Sreeja V spoke over palliative need. The Unit has donated an amount of charity.

The involvement of members of *Sparsam* in all the activities of Old Age Home was remarkable especially in caring and cheering the inmates. The authorities have appreciated each and every student for their responsible behavior, moral values, love and respect towards the elderly people and also their readiness to do whatever is needed for the institution. They have showered their immense gratitude to the NSS Programme Officers and the volunteers who have visited the Old Age Home.

2. Observation of Palliative Day

Kerala Palliative Care Day is observed on 15th of January every year. NSS volunteers, under the *Sparsam* Project, have observed the day in 2020 at Assisi hospital Punnapra Alappuzha. Fifteen NSS volunteers from TK Madhava Memorial College were present in the function and they have also attended a one-day palliative training programme at the hospital on the same day. The training programme began at 10 am in the hospital conference hall. Doctors and other experts from the hospital have handled the classes and it was end at 4 pm in the evening.

[Click here for the link](#)



Inauguration of the Training Programme



Team Sparsam At the Training Camp



Unit Members Visiting the Patients in the Hospital



The Whole Team Attended the Training

3. Fund raising programmes

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logtkmmc.blogspot.com

official

Wednesday, 3 March 2021

Fund raising Programme by NSS for undertaking Palliative initiatives

Paper pen making & preparing ground for flower cultivation.

Lending support to the project proposed by the college principal Dr P P Sharmila, the unit has conducted a fund-raising programme, paper-pen making workshop, in the college. The unit has also conducted small-scale farming activities for the purpose.

[Click here for the link](#)

4. World Cancer Day observation

a. World Cancer Day observation 2022

World cancer day was observed on 04th February 2022 *Sparsam*, an initiative by the NSS Unit of TK Madhava Memorial College to empower cancer fighters to tap into the experience, knowledge and inspiration of cancer patients and caregivers especially people with a lower economic background. The humble attempt has also tried to raise a fund, to support the fighters, which the students have collected from their various lock down activities. *Sparsam* has built a camaraderie, among the fighters, their families and the volunteers, by sharing the cancer experience that also helped in making more informed treatment decisions or getting answers to questions on a number of cancer-related topics and emotional solace to their families.

On the day, NSS program officers Smt. MV Preetha and Dr. Sreejith Krishnan, Assistant Professor in Physics, along with volunteers visited cancer patients, and gave emotional support. The volunteers also donated colostomy bag, Leuko band, necessary provisions for food, dress materials and toiletries.

The NSS unit in collaboration with Haripad *Karuthal Kootayma* initiated *Parasparam* a project, to help palliative and Cancer fighting persons. As part of this, the unit gave charity boxes to volunteer leaders to raise fund for palliative activities. The volunteers expressed their willingness to donate a small amount of money on their special occasions like birthday and other celebrations. The college principal Dr. P P Sharmila inaugurated *Parasparam* project by distributing charity boxes among volunteer leaders.

NSS Unit has collaborated a webinar session on “**Breast cancer awareness**” in association with Snehitha Women Health Foundation. Snehitha Women’s Health Foundation is a not-for-profit, voluntary organization registered as a public charitable trust under section 12A of Income tax Act 1961 established in 2016 with a mission to work towards improving women’s health and wellbeing through preventive, promotive, curative and rehabilitative services.



Brochures on *Sparsam* and Breast Cancer Awareness Seminar [Link for the seminar](#)



Donation of necessary provisions



Donation of necessary provisions [Click here for the link](#)

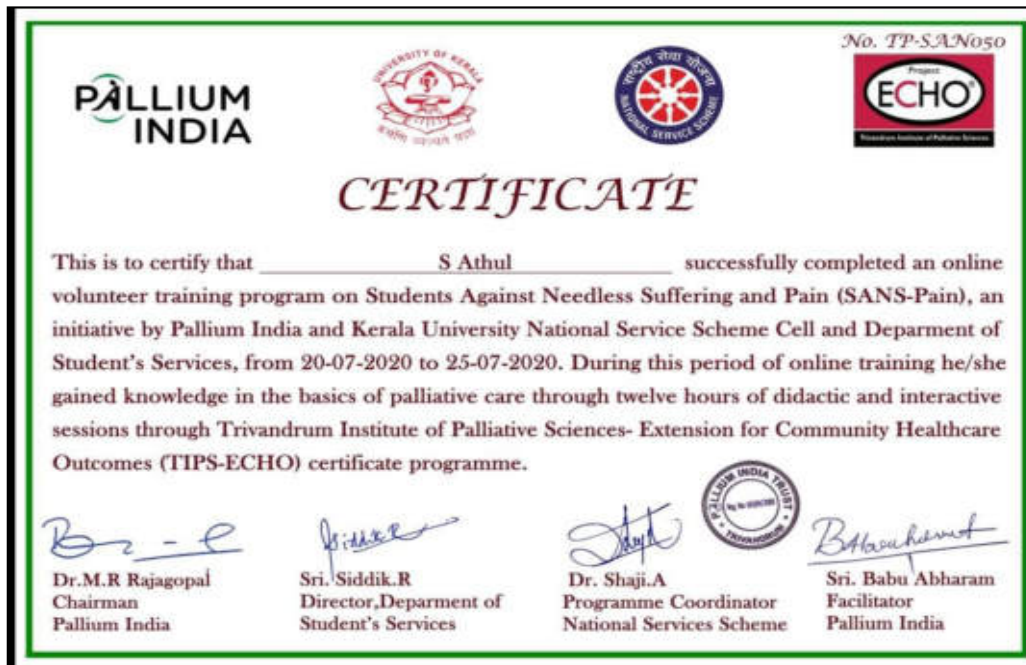
[Link for the cancer day observation in 2021](#)

5. University Level Palliative Training

a. 20th July to 25th July 2020

NSS volunteer Athul.S has attended a five-day residential training session at the University of Kerala student cell on Palliative care from 20th July to 25th July 2020.

- The main events were:
- Session Why Palliative care and its need for the society
- Students' initiative on Palliative care and how it is taken out
- What are the Activities done on?
- Training on physiotherapy and other first aid.
- Training on how to cope with a disastrous situation
- The training session was a great success and speeches has inspired and motivated the students in taking the leadership of such an initiative at the college level.



b. 27th July to 29th July 2022

Unit volunteer Charukesh K Priyesh, IV Semester B A Economics has attended a three-day residential training session at the University of Kerala student cell on Palliative care from 27th July to 29th July 2022. [Click here for the link](#)



Inauguration of the Training Camp



Experts Handling Sessions



Charukesh with the other Candidates

c. 22th November to 27th November 2021

Unit volunteer Bhagyasree S has attended a three-day residential training session at the University of Kerala student cell on Palliative care from 22th November to 27th November 2021.



d. 10th August to 15th August 2020

Unit volunteer Namitha.R. Raghav, R Rajkumar. NeethuKunjumon. N, Lavanya P have attended a five-day District level palliative training programme from 10th August to 15th August 2020.



6. District Level Palliative Training

- a. Unit volunteer Megha Raju has one day palliative training camp at Baby John Memorial Government College, Chavara 13th August 2022.

[Click here for the link](#)

Certificate of Palliative Training Camp: Megha Raju





**Megha Raju At
the Training
Camp**

b. Lending a hand: Help for medicines

a. Extending help for Medicines to Mr. Akhil Das

The most common reason people require financial support is because of the cost of the medication. However, money should not stop an individual from getting the treatment they need. T K Madhava Memorial College teaching faculty has contributed financial aid towards the expenses for the surgery of our ailing student Akhil Das, Semester III, B Com Travel and Tourism. He is residing at Pavithralayam, Muttam Post, Valiyakuzhi, Cheppad. He has been suffering from severe kidney related health issues. [Click here for the link](#)





**T.K.M.M.COLLEGE , NANGIARKULANGARA
NATIONAL SERVICE SCHEME
UNIT NO: 39 A&B**



ചികിത്സാ സഹായം തേടുന്നു...

സ്വപുത്തുകളെ

Tkmm കോളേജിലെ രണ്ടാം വർഷ Bcom TT ലെ അവിൽ ദാസ് എന്ന വിദ്യാർത്ഥിയെ അത്യാസന്ന നിലയിൽ ബിലിവേഴ്സ് ഹോസ്പിറ്റലിലെ തീവ്ര പരിചരണ വിഭാഗത്തിൽ പ്രവേശിപ്പിച്ചിരിക്കുകയാണ്. അഖിലിന്റെ ചികിത്സയ്ക്കായി ണീമമായ ഒരു തുക ആവശ്യമാണ്. ആയതിനാൽ ഈ മെസേജും താഴെ പറയുന്ന വിവരങ്ങളും പരമാവധി ആളുകളിലേക്കു എത്തിക്കുക അതോടൊപ്പം നിങ്ങളാൽ ആവുന്ന സഹായവും ചെയ്യുക

PATIENT DETAILS

**AKHIL DAS
83 BCOM TT , TKMM COLLEGE
ADDRESS: PAVITHRALAYAM ,MUTTAM P.O,VALIYAKUZZHI ,CHEPPAD
PHONE:9633778314**

**ACCOUNT DETAILS
NAME: SHIVAKUMARI CHANDRA DAS
BRANCH: KAREELAKULANGARA**

A/C NO: 67398547414

IF&C CODE: SBIN0670874

OR

Any affordable amount is accepted as payment through Google pay

Archana Nalinan : 9400273609

b. Extending help for Medicines to Mr. Sumesh Kumar

Sapsam team of T K Madhava Memorial College, including NSS volunteers Mr. N Nihal Muhammed, Ms. Parvathy R and Mr. Manesh Manoj, Programme Officer Ms. Preetha M V and Ms. Soumya V S, Head, Department of English have visited cancer fighter Sumesh Kumar's house and contributed an amount of Rs. 5000/- on 12th February 2021.

c. Extending help for Medicines to Ms. Geetha Rani

Cerebral palsy is a group of disorders that affect a person’s ability to move and maintain balance and posture. It is the most common motor disability in childhood. It is caused by abnormal brain development or damage to the developing brain that affects a person’s ability to control his or her muscles. Ms. Geetha Rani is a person suffering from cerebral palsy. The unit has donated Rs 4000/- to Geetha Rani and given full-hearted support to her family.

കൈകോർക്കാം നമുക്ക് ഗാമയ്ക്കായി

20 രൂപ ചലഞ്ചിലൂടെ



സെറിബ്രൽ പാൾസി ബാധിച്ച ചലനശേഷിയില്ലാത്ത ഈ പൊന്നുംകുടത്തിനായി സഹായം തേടുന്നു. ചികിത്സയ്ക്കായി 20 രൂപ നൽകി സഹായിക്കാം.



ശ്രീചിത്രയിൽ ചികിത്സയിൽ കഴിയുന്ന ഈ കുറുമ്മിനായി നമുക്ക് കൈകോർക്കാം. അച്ഛനും അമ്മയും കരൾ രോഗത്തിനും ന്യൂറോ സംബന്ധമായ അസുഖത്തിനും ചികിത്സയിലാണ്. വാടകവിട്ടിലാണ് താമസം

ഈ കുറുമ്മുജീവൻ നമ്മുടെ കൈകളിൽ

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TC 50/1184, Thaliyal Karamana P.O, Thiruvananthapuram Sreechitra No. NM/D/403699

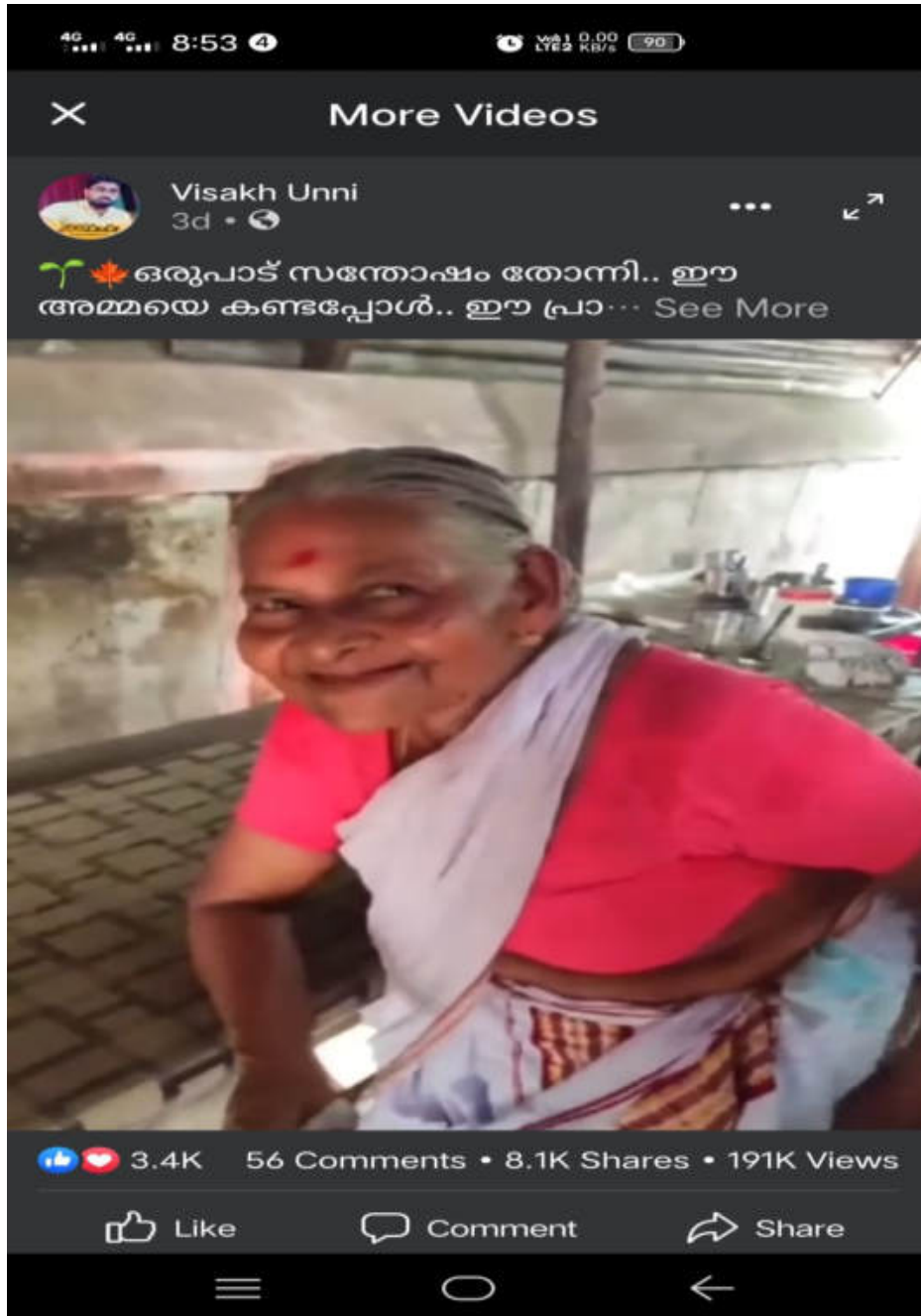
State Bank of India Kalady Branch Gadha G. Giri/Geetha Rani O.K. A/c No. 67337848804 IFSC Code : SBIN0071192



d. Extending help for Medicines to Parvathy Amma

Our vision for the older persons is to empower them to lead a life of dignity and respect. We believe, sustained efforts would not only create an older person's

friendly environment but also it would also awaken a sense of responsibility amongst us all, to make this possible. The *Sparsam* Unit has visited Parvathy Amma and supported her full-heartedly with lovable visits donating food and other necessities and also given Rs. 1500/-.



c. Karunam

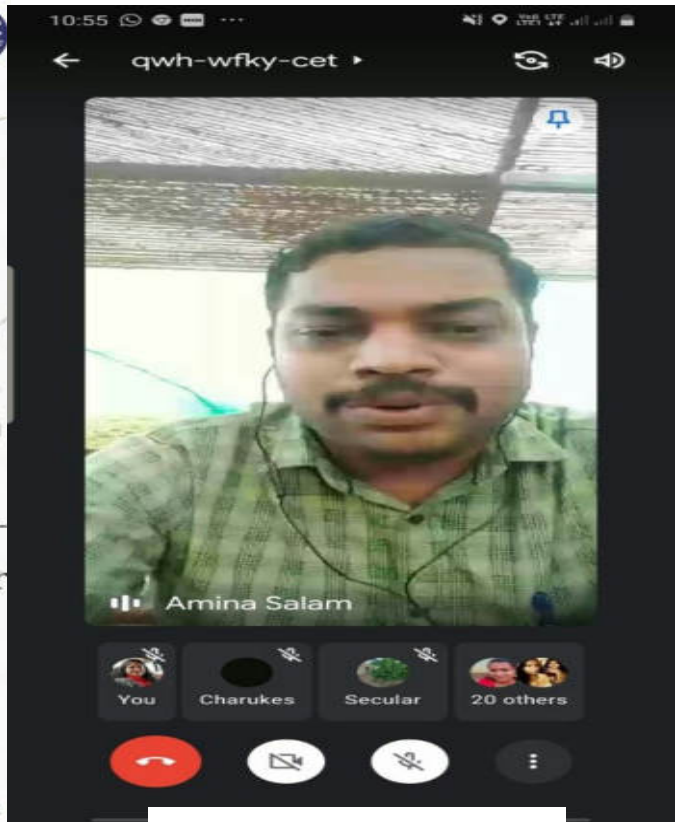
A webinar on palliative care has been conducted through Google Meet at 10.15 am on 27th February 2021. The session was handled by Sri Shameer Muhammed, the

Director of Gandhibhavan Snehaveed, Haripad. NSS PO Preetha MV delivered the key note address. volunteer leader N Nihal Muhammed, Charukesh K Priyesh, Lekshmi MS also shared their views in the webinar.

[Click here for the link](#)



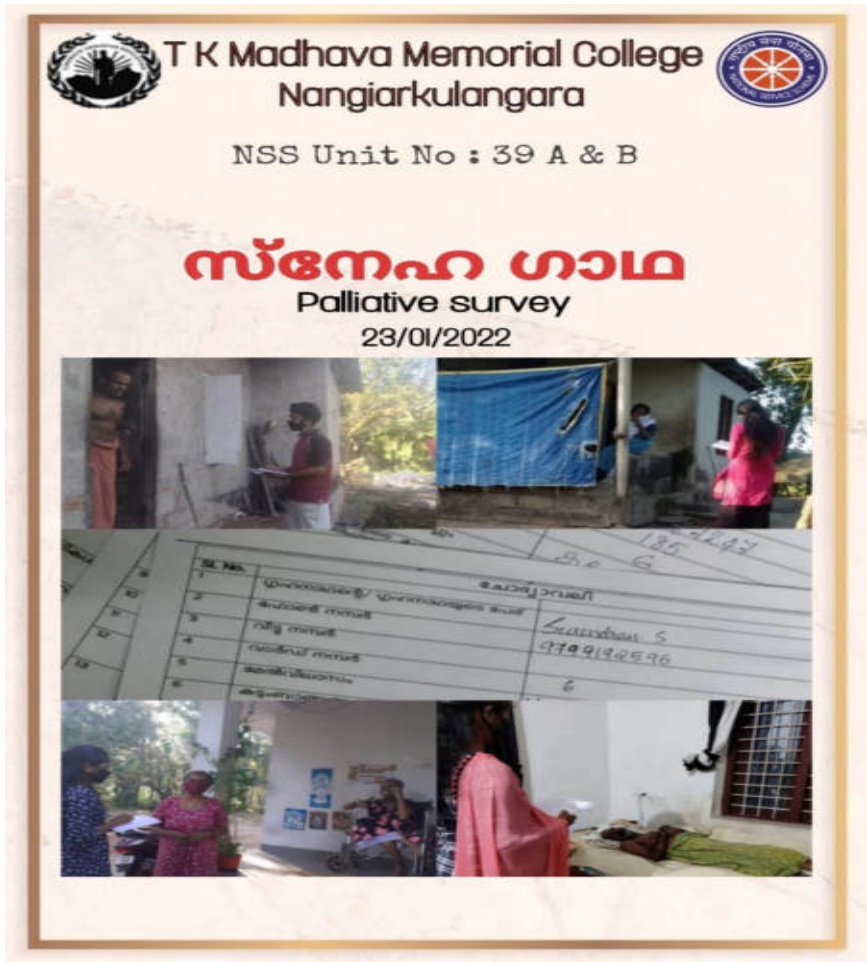
Brochure for Karunam



Expert handling the Session

12. *Snehagadha*: Palliative Survey

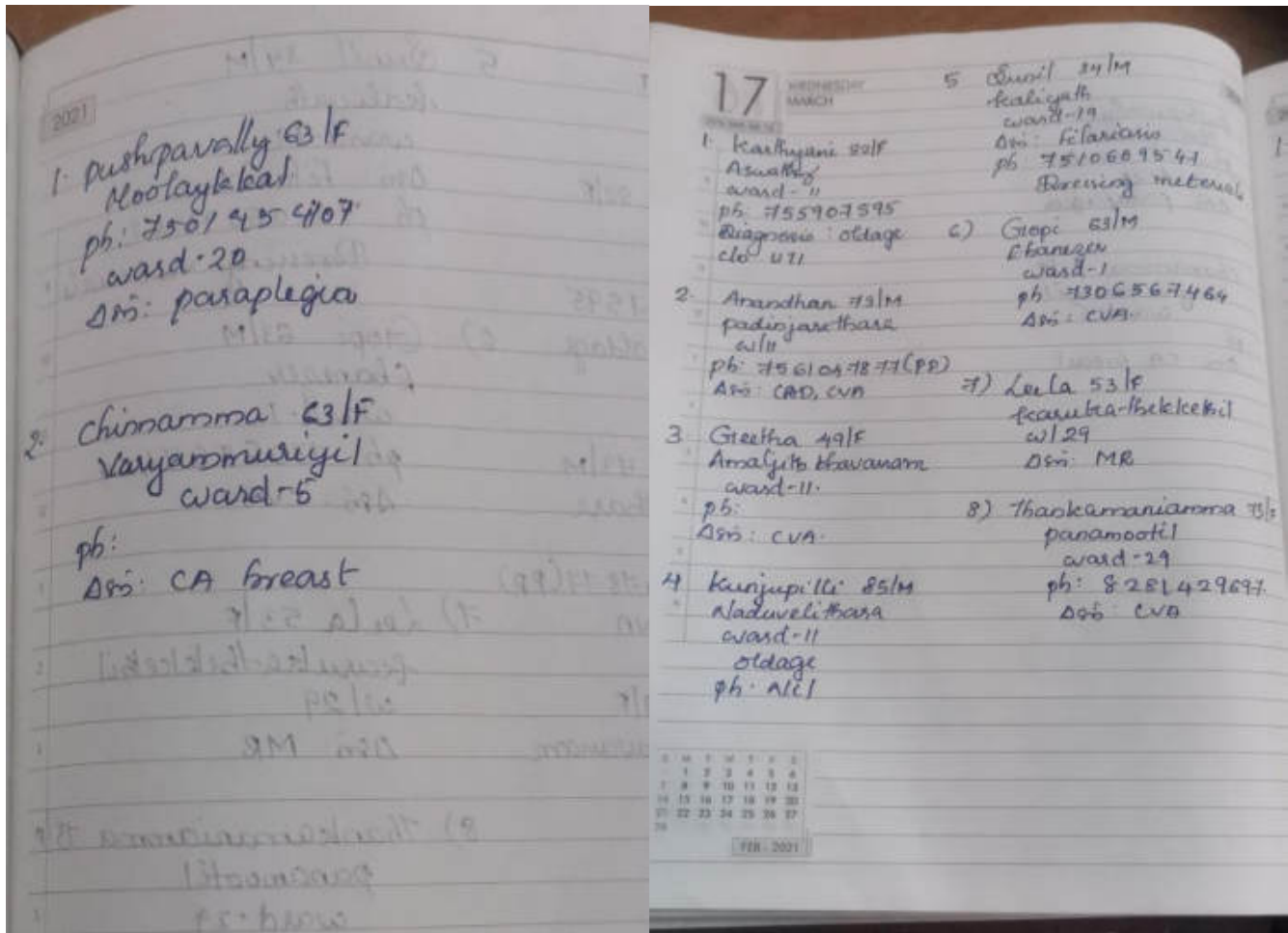
A team of NSS volunteers conducted a palliative survey named *Snehagadha* in the college neighborhood and donated provisions, medicines, hand sanitizer and mask to destitute in college surroundings. [Click here for the link](#)



15. Palliative Register

Sparsam Unit is maintaining a proper register for palliative activities. It has included the details of the patients whom the unit is lending help.

Sl.no	Name & age	Address	Diagnosis	Ration card	B.P	Financially Stable/Not
1	keelamma, 77yr	Sagarinika, TP Norek, Mannarsala [ward 1]	CVA w/ hemiplegia	APL card	130/80	Stable
2	Narasayan, 85yr	Thongayil Mekattil [ward 1]	old age diseases + BPH.	A.V card	110/70	not stable
3	Janki, 83 yrs	Thongayil Mekattil [ward 1]	Pressure variations, old age diseases, Spondylitis	A.V card		Not stable
4	Rethamani, 88yr	Pavanpukken veddu (ward 1)	Riza, wear and tear of bones.	A.V card		not stable
5	Thulasi, 65 yrs.	Koipalleth [ward 2A]	Parkinson's disease.	A.V card		not stable



16. Regular planned and emergency Home Care Visits

Palliative care is most often given to the patient in the home as an outpatient, or during short-term hospital admission. At home, the patient may take medicines and use other methods prescribed by the home care team. The team *Sparsam* conducts regular home visits under the home care programme as a follow-up action to check the condition of patients and provide them solace. The team provides support to the patient as well as to the home caregivers. We look after their families and ensure that members do not suffer due to lack of money; as such provide rice and provisions every month as needed by them. For those patients who cannot be brought to the clinic, home care visits are arranged where a team of nurses and volunteers visit their homes on a regular basis. During the period of pandemic, we had two home care units, one attending to regular planned home care visits and the other attending to emergency calls.



**Regular Home
Care Visits by
the *Sparsam*
Team**

Regular Home Care Visits by the *Sparsam* Team



17. Hospital Visit

In association District Hospital Palliative Care Unit, Haippad, the selected NSS Volunteers of T K Madhava Memorial College Nangiarkulangara visited and assisted the Hospital Palliative teams in nursing various patients, donating provisions and medicines.



18. Sabarmati Special School visit



In connection with the observance of NSS Day celebration, on 24 September 2019, NSS volunteers of T K Madhava Memorial College Nangiarkulanagara visited 'Sabarmati Special School', a Charity Institute for Physically & Mentally Challenged. The volunteers spent a whole day with the children and entertained them by singing, playing, dancing as well as taught some basic skills. To be the part and parcel of social service projects like 'Sahajeevanam Project' by Social Justice Department for differently abled and bed ridden patients is yet another golden feather on NSS palliative care initiatives.

Awards and Recognitions

The power of healing does not lie in just prescribing drugs and medical treatment. What it essentially requires is caring for the patients. Palliative care is a specialized area of healthcare that focuses on relieving and preventing the suffering of patients. It includes care of the patient and family, pain and symptom management, disease-modifying treatments, psychological, social, spiritual support and bereavement support. Ms. Preetha M V, Programme Officer, NSS Unit TK Madhava Memorial College and Mr. Charukesh K. Priyesh, IV Semester B A Economics, have received award for outstanding performance in palliative initiatives from Ms. Veena George, Minister for Health and Family Welfare in the

Government of Kerala on 18th March 2022 at a grand function held at Senete Chamber, University of Kerala Senate Hall, Palayam, Thiruvananthapuram.



Future Plans

- Scholarships to the children of the palliative patients
- Constituting a centre for counselling
- Service of a part-time doctor for home-visits
- Center to Advance Palliative Care: a resource for palliative care innovation, development and growth
- Workshops on value added products for the dependents of palliative patients

Conclusion

Critical engagement with the idea of youth involvement in palliative care is timely given its scope and the expanding palliative care needs of the society. Engaging students in palliative care has a dual advantage. One is that their energy can be utilised for the benefit of patients with chronic disease. Another is that, inculcating the spirit of care can have a positive effect on the attitude of students. With this idea, the team *Sparsam* has started its Palliative Care Programmes. The sustained involvement of young people in community-based programmes for hospice and palliative care delivery could have enormous potential in meeting global needs, both now and in the future.