APPLICATION FOR THE BIODIVERSITY AWARD 2017

1. INTRODUCTION

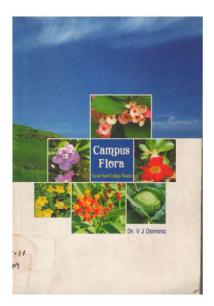
1.1. Sacred Heart College - a biodiversity profile

Sacred Heart College (established in 1944) a college with potential for excellence (CPE) under UGC since 2004 and re accredited at A level till 2020 is located on scenic banks of the backwaters of Vempanadu. It has been following a green agenda for more than a decade now. Its earlier efforts in this regard fetched the 'pala thulli puraskaram' way back in 2009. The institute's green motto has been: 'go green, grow green'.

An environment friendly & bio-diversity rich Vision – Mission and Emblem



The College vision speaks about 'cultivating a concern for the environment' and its emblem has a section with the river (of wisdom) flowing amidst greenery of trees of the West and the East. According to the 2010 campus bio-diversity census, the campus possesses 500 species of plants (Dominic V.J. Campus Flora, 2010).



1.2. College Environment Policy - SH College has a strong environment policy and it always put effort in conveying the same to the students, local people and other stakeholders. The policy goes thus:

Sacred Heart College is committed to protection and promotion of life on the planet. It believes in 'go-green and grow green'. As a matter of practice, it shall;

- Seek to spread and deepen awareness on environment issues and an environment friendly life-style among the academic community and neighborhood community
- Pay special attention to minimizing waste, especially plastic waste that doesn't degrade, with 'zero waste'. This is an ideal management properly implementing with advance planning. Therefore, we take utmost care while conducting of the activities/programmes/celebrations to avoid or minimize the use of disposables and flex banners.
- Introduced and practiced recycling the material that doesn't degrade, at the student level through Entrepreneurship Development Cell, and at the college level, by establishing a paper recycling unit in due course
- Tap renewable energy resources including solar energy, rain water harvesting etc. as much as possible.
- Protect and promote diversity, especially of indigenous and coastal flora and fauna and their documentation.
- Promote organic vegetable and food production by students and local community with the involvement of students and faculty.

- **1.3. Organisational Framework** The green policy of the college is implemented through the various fora existing on the campus. The following are the major fora actively conducting environmental related activities in the campus.
 - Primrose Nature Club nature studies, training programmes, field study trips, discussions, surveys etc.
 - ENCON energy club energy related issues
 - Tourism club Environment friendly tourism thereby generating awareness towards healthy, clean and green approaches. It also promotes heritage preservation and responsible tourism.
 - Bhoomitrasena focuses mainly on water and soil conservation
 - Bird Club a new initiatives of the college aims at nature studies through observing and studying birds.
 - Agricultural club farming related activities
 - NSS, NCC, HEAL(Heartian Extended Arm for Life) the extension wing of the college, Women's Cell - SWASTI, Jesus Youth and the Department Associations, esp. of Botany & Zoology provide man power to support the activities related to environment related activities

The first **extension centre of the College is Mitradham**, located on a 10 acre plot at Chunangumvely. It was established in 1997 to promote alternative energy sources and eco-friendly living. Our former faculty and advisory board member Dr. George Pittappilly is its director. It has provision for residential training of 30 people. The facility is fully operated with solar and wind energy. It offers training in solar energy technology and organic farming. The students are taken for visit to the facility and they collaborate in the annual extension programme of Suchitwa Bodhana Yajnam.

2. Status of Biodiversity

According to 2010 campus bio-diversity census, it had 500 plants identified in the campus (Dominic V.J., 2010). The college also developed a biodiversity registry of its campus.

College took an effort to add trees and plants to the existing collections. In the last 5 years college has added the following items to its collections.

Live collections of spice varieties like,

- Tamarindus indica L. Tamarind
- Syzygium aromaticum (L.) Clove
- Cinnamomum verum Cinnamon
- Murraya koenigii (L.) Sprenge Curry Leaf Plant
- Piper nigrum L. Black Pepper

- Capsicum annuum L Chilly
- Zingiber officinale Roscoe Ginger
- Curcuma longa L Turmeric Mentha piperita
- Mentha piperita Pepper Mint
- Elettaria cardamomum Cardamom
- Garcinia indica Kokam
- Pimenta dioica (L.) Merr
- Vanilla planifolia Jacks. ex Andrews Vanila
- Ocimum basilicum L. Basil
- Coriandrum sativum L Coriander
- Piper longum L. Paper long
- Alpinia galanga (L.) Willd. Greater Galanga

Dried collection of spices

Cardamom, Pepper, Chillies, Ginger, Turmeric, Coriander, Cumin, Fennel, Fenugreek, Mustard, Nutmeg, Mace, Garlic, Staranise, Vanilla, All spice, Tamarind, Cambodge, Cinnamom, Sweet flag, Greater galangal

Dried collection of rice varieties

- 1. Adukkan
- 2. Airankana
- 3. Athira
- 4. Chenthadi
- 5. Chettuveliyan
- 6. Chomala
- 7. Gandakasala
- 8. Chennellu
- 9. Chennelthondi
- 10. Mannuvelian
- 11. Marathondi
- 12. H4
- 13. Jeerakasala
- 14. Jaya
- 15. Kanali
- 16. Karimban
- 17. Koduvelian
- 18. Kuruva
- 19. Kurumbali
- 20. Kuttivelan
- 21. Mullanpuncha
- 22. Njavara

- 23. Oonachenna
- 24. Okkapuncha
- 25. Oonamattan
- 26. Palthondi
- 27. Taichung
- 28. Thavalakkannan
- 29. Thondi
- 30. Thonnurampunja
- 31. Thonnuramthondi
- 32. Uma
- 33. Urunikayama
- 34. Valichuri
- 35. Veliyan
- 36. Vellimuthu

Coconut - Collection 7 new coconut varieties like Chowghat Orange Dwarf (COD),

Chowghat Green Dwarf (CGD), Lakshadweep tall etc.

Collection of 10 Ficus varieties

College has a few bonsai tree exhibits.

Collection of indigenous trees (potted) 20

College has a good number of Palm varieties like

- Roystonea regia (Royal palm)
- Wodyetia bifurcate (foxtail palm)
- Hyophorbe indica (champagne palm)
- Cyrtostachys renda (red palm)
- Corypha umbraculifera (Talipot palm)
- Areca catechu (Areca palm)
- Cocos nucifera (Coconut palm)
- Bismark palm
- Pigmy date palm
- Bottle palm

Bamboo varieties

- 1. Bambusa bambos (Thorny bamboo)
- 2. Bambusa vulgaris (Yello bamboo)
- 3. Bambusa tuldoides (Buddha's belly bamboo)
- 4. Black bamboo
- 5. Dendrocalamus gingantia (giant bamboo)
- 6. Lathi bamboo
- 7. Creeper bamboo

Fish varieties – The aquaculture departments has various varieties of ornamental fishes like Gold fish, Tetra, Barbs, Koi Carp, Gourami, Angel Fish, Miss Kerala, Different varieties of Guppy, Molly, Platy, Fighter, Sword Tail etc. College also has three aquariums to exhibit marine fish varieties. College has three ponds in which Thilapia (red-belly), Vaala, Pearl spot and Kuruma are cultivated. It led to a haul of about 150 kgs this year

The **zoology museum**, with over 3000 specimens collected from various parts of the world, is one of the invaluable assets of the college. Established in 1952, it is the largest and the most spectacular one of its kind in Kerala

Arachnology collection – the Arachnology wing of the college has a rare collection of more than 1000 specimen of spiders.

Botany Herbarium has a collection of 2000 specimens in the botany museum **Books**

College has a book collection related to Botany, Zoology and Environment Studies consisting 9649 books.

3. Promoting Food crop biodiversity

3.1. Wet land farming – Thottara Puncha It led the paddy farming activity in the college owned farm at Arayankavu, which has led to the revival of organic paddy cultivation in Thottara Puncha. 3.5 acres were cleared and almost 400 students took turns in clearing, sowing, planting and weeding the farm. The species that is being cultivated is IR5 rice variety. The process is also part of learning for the students. During this year 2.5 tons of rice were produced. This year, as an experiment, a variety 'Karinellu' is planned in 2 cents of field.



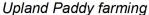
Paddy farming



Paddy farming

3.2. Upland farming - A plot of 10 cents on the campus was cultivated during the rainy season with active support from NSS volunteers and the members of Agriculture club.







3.3. One cent farming

The College has initiated a novel agriculture practice, ONE CENT FARMING; in which the students are encouraged to cultivate various vegetable crops in a limited space. Two such models were developed on the terrace and two of them were installed adjacent to the college ground. The once cent plot contains several vegetable crops such as **tubers** (Tapioca, sweet potato, dioscorea, colocasia, amorphophalus etc.) **leafy vegetables** (Chuvanna cheera, pacha cheera, sambar cheera, velicheera, agaththicheera, marakkeera, vallicheera, chayamansa), **gourds** (cumber, bitter gourd, snake gourd, ash gourd etc.), other vegetables like ladies finger, brinjal, chilly varieties, coriander leaves, mint, tomato, citrus, ivy guard, etc. One plot was

dedicated to 'pulses' and it contains five varieties of pulses (amara, tuvara, kuttipayar, french beans, meter payar). The pulses yielded almost a quintal. It had a fence of 'tuvar' dal. The pulses plot was executed with the active support of Dr. Fr. Joseph & Fr. Sabu of English department. Total yield of pulses was more than 100 kg during the year 2017-18.



3.4. Terrace farming

The college has two terrace farming models in which vegetable varieties and tuber varieties are cultivated since 2014.



Terrace Farming

3.5. **Mushroom Cultivation**: The college has a small mushroom cultivation unit run by Botany students. The department also provide train students on the cultivation, harvest and marketing of mushroom.



Mushroom Cultivation

4. Centre for Organic Farming, Bio-diversity and Ornithology - Arayankavu

The college initiated a centre for Organic farming, biodiversity and ornithology at Arayankavu thottarapuncha. The objectives of the centre are to spread of natural farming practices in public, conservation of biodiversity and a centre for bird watching.

5. Partnerships

5.1. Local Self Government – Divisions 58, 59 - College has always maintained a link with local self-government especially with divisions 58 and 59 of Corporation of Kochi. This comes under the HEAL (Heartian Extended Arm for Life) project of SH extension activities. The key themes under this are SAFE, GREEN, CLEAN Thevara which is aligning with the Swacch Bharat campaign. The college is trying to develop a biopark near the Highway at Santhinagar Junction in association with the local self-government. Students also planted some plants there trees and maintain regularly.



Suchitwabodhana Yajnjam



Beautification of Shantinagar

5.2. Spices Board – Sugandhavadi - The 50 cent spices garden introduced with partnership of SPICES BOARD was developed with active involvement of Department of Botany. The species available are: Cambodge, Tamarind, Clove, Cinnamon, Pomegranate, Curry leaf, Pepper, Bush Pepper, Chilly, Ginger, Turmeric, Cardamom, Nutmeg, Coriander, Vanilla, Peper long, Basil, Allspice, Kokkam, Greater Galanga.



Sugandhavadi Project

5.3. Organic Kerala Charitable Trust - College is a partner and member of the Organic Kerala charitable trust, with the Principal as its Chairman and a few other faculty members as members. The partnership has led to a vibrant website with rich input on organic vegetable farming; a pamphlet, a document on organic farming and active campaign on Organic Farming on one cent plots with technical assistance. The annual exhibition organised at Rajendramaidan during April 7 to 11 was with the active participation of the College, with the Principal in the lead.



Organic Fest

This year, an agro clinic, *krishi nattarivu pathana kendram* was started by the collaborative efforts by SH College and Orgnaic Kerala Charitable Trust.



5.4. **KSCSTE** - The college organised several environment related activities, campaigns, workshops, invited lectures, training programs, etc. with the financial support of Kerala State Council for Science, Technology and Education (KSCSTE)





- 5.5. RADIO MANGO PROGRAMME was launched at the college to inspire youngsters to take up localities for cleaning up and greening by clicking snaps depicting the transformation of the locality.
- 5.6. Observation of important days related to environment: Environment Day, Earth Day, Science Day, Ozone Day, Ocean Day, Wetlands Day, Wildlife week, World Water Day, World Sparrow Day etc. are observed in the campus. One of the outcomes of such celebrations is that a collection of excellent posters which is digitalised and made available for future use.
- 5.7. In association with **Kerala Forest Department**, the college has organized an invited talk on 'Fight against Illegal Trade in Wildlife' on June 6th, 2016 in relation to the Environment Day and observed World Tiger Day on 28th July, 2017.



Fight against Illegal Trade in Wildlife



5.8. WTI - The international Whale Shark Day was observed in association with Wildlife Trust of India on 30th August, 2017.

Campaign to save whale sharks launched

Kochi: On the occasion of in-Kochi: On the occasion of in-ternational Whale Shark Day, Wildlife Trust of India (WTI) and Cochin Shipyard Ltd (CSL) announced the launch of a massive aware-ness campaign targeting co-astal communities at an event held at Sacred Hearts College. Thevara. on Wed-

event held at Sacred Hearts College, Thevara, on Wed-nesday. The campaign aims at securing a safer future for whale sharks off the coasts of Kerala and Lakshadweep. The campaign to conser-ve whale shark was initiated in Gujarat in 2004. Welco-ming the gathering, WTI se-nior advisor BC Choudhury said the launch of the project nior advisor BC Choudhury said the launch of the project in Kerala is a significant col-laborative conservation ef-fort. The event began with a rally by students of the Sa-cred Heart Senior Secondary



CONSERVATION RALLY: The schoolchildren were excited to see the 40-feet-long life-size inflatable whale shark that was placed in the college's basketball court

School. The schoolchildren were excited to see the 40-fe-et-long life-size inflatable whale shark that had been placed in the college's bas-ketball court. The event was inaugurated by mayor Sou-mini Jain. "We are happy that WTI's Gujarat project, which was the first-of-its-kind in India, has now made its first expansion to the Ke-

rala coast," she said.

WTI CEO Vivek Menon delivering the keynote add-ress, said whale sharks, which are endangered in the tropical seas are important 'We have had great success with our community engagement model in the conservation of whale sharks off the coast of Gujarat and we are pleased to now formally extend this model to Kerala, he said. The second-largest engagement in India are found off the shores of Kerala and Lakshadweep.

Sajan John, manager and head of marine projects at WTI, said surveys to check the awareness levels and responsiveness to the campaign will be launchedshortly. 'I have requested the mayor to adopt whale shark as a mascot of the city, like many ci-"We have had great success

to adopt whale shark as a ma-scot of the city, like many ci-ties in Gujarat, which will bring several benefits. It'd be a huge leap for the initiative if such a measure is taken," John said.

5.9. The college has a collaboration with the WOW (Wellbeing Out of Waste) and Ecorycle, the agencies working in the field of waste management. There is an ongoing tie up with the Ecorycle on the basis of which segregated waste is collected by the agency and a small income being generated by the college.



- 5.10. KURTC The NSS unit planted 50 saplings on the KURTC bus stand at Thevara and have taken upon themselves the task of protecting them in collaboration with KURTC employees.
- 6. VARIOUS CLUBS AND FORA DEALING WITH ENVIRONMENT AND BIODIVERSITY
- 6.1. Primrose Nature club Primrose Nature Club of the college has a long standing legacy as a correcting force, whenever any kind of threat to nature crops up. It organised a talk on 'Fight against Illegal Trade in Wildlife' and a workshop on 'Lifestyle and Cancer'.

In collaboration with CNRM, Primrose nature club organized an inter college and school seminar, quiz competition and poster designing competition in connection with the world wildlife week celebration in our college on 6th October, 2016. There were two classes lead by Dr. J. Jemson and Mr. Basil Peter. There was a photo exhibition of birds by Basil Peter. Students from different schools and colleges participated in the program.



Wildlife Quiz

The club members in collaboration with NSS unit of the college prepared *Karkidakakanji*, an ayurvedic health food, in the ayurvedic tradition of the state, during the month of *karkidakam*.



A biodiversity survey was conducted to document the flora of the campus (list attached). A week long programme including elocution wildlife quiz, pencil drawing, water colouring were conducted during the wildlife week. The club also observed world green consumer day (March 15, 2016).

Wetland day celebrations: Oath taking and cleaning program at Thevara Ferry on February 2, 2018

On 10th of February 2018, the nature club members have conducted a field study and trekking programme at Wagamon hills. 32 students were attended the program. The major objective of the field study was to familiarize with the endemic plants of the Western Ghats. The students were studied the endemic plants such as *Osbeckia travencorica*, *Strobilanthes heyneanus*, *Vernonia comorinensis*, *Vernonia indica*, *Vernonia malabarica*, *Osbeckia wightiana*, *Medinella malabarica*, etc





6.2. Bhoomitrasena - Ozone Day - In the month of October, a series of events were organised in relation to the Ozone Day observation of the year 2016 by the college in collaboration with Kerala State Council for Science Technology and Environment (KSCSTE). Dr P. Shaiju (Scientist, Dept. of Chemical Oceanography, School of Marine Sciences, CUSAT) shared knowledge onto the students regarding the problems caused by Ozone depletion in the recent years.



Ozone Day

In connection with World Ozone Day celebration Bhoomitrasena club in collaboration with Kerala State Council for Science, Technology and Environment (KSCSTE) organsed various programmes which include poster making competition, quiz competition, signature campaign and rally etc. on 25th and 26th of September 2017. Dr Linto Alappat (HOD, Dept. of Geology, Christ College, Irinjalakuda) inaugurated the seminar. The focal theme "Caring for All Life under the Sun" was highlighted for talks and discussions.

Environment Day: In connection with world environment day, Bhoomithrasena club organizes a seminar and different intercollegiate competitions (elocution, painting, poster quiz) based on the focal theme "connecting people to nature". The seminar was inaugurated by Dr. Shijo Joseph (Scientist E1, KFRI). The seminar was sponsored by KSCSTE. Primrose nature club organised a photo exhibition of endemic orchids of the Westtern Ghats by Dr. Giby Kuriakose, Dept. of Botany.

Paper Bag Making: To highlight the importance of recycling, the BhoomitraSena Club, SH College, Thevara, organized a training on paper bag making at the food chemistry lab on 21st December 2017.The class was taken by Devika (M.A.Economics).The students utilized old newspapers and chart papers to make the bags and the class was successful in achieving its purpose.

Cage Farming: The BhoomitraSena club members organized an invited talk on cage fish farming on 5th December, 2017 at Melesius Hall, SH College, Thevara.

Dr.Imelda Joseph (Scientist, CMFRI) was the resource person. Inspired by the lecture, a visit to cage fish farm at Moothakunnam along with CMFRI officials Mr. Suresh and Mr. Prasad was organized on 16th December 2017. About 40 students were participated in the event.



Cage fishing

World Wetlands Day: In connection with world wetlands day, Bhoomithrasena club and EVS dept. organized a seminar and poster competition on Feb 2. "Science and technology for sustainable development"t was the focal theme. Dr. Kripa (Scientist, CMFRI), inaugurated the seminar. Last year the club observed wetland day by organizing leccures and inter-collegeiage competitions. The event was based on the focal theme "Wetlands for Our future". Poster, Elocution, Environment Quiz, Debate competitions were organised as part of the celebrations. The college, in collaboration with ATREE Bangalore observed world wetland day at Mangalavanam. Students and faculties attended the program.



Wetlands for a Sustainable Urban Future



6.3. ENCON – Energy club - As part of observing National energy Conservation Day and in connection with the 'Urjakiran Programme' (A state government initiative), the Physics Association organised an energy Conservation Rally to spread awareness on the importance and need for energy conservation. A seminar on energy conservation (14.01.2016) and an LED-making workshop (25.02.2016) were also conducted.





Dr. Roby Cherian represented SH College for 2016-17 Environmental protection and energy conservation activities and came out first in the ENCON club presentation competition held on 25th august, 2017.



ENCON Award

On national energy conservation day (Dec. 14, 2017), a rally was conducted to spread the message of energy conservation.



ദേശീയ ഊർജ ദിനാചരണത്തിന്റെ ഭാഗമായി തേവര സേക്രഡ് ഹാർട്ട് കോളജിലെ ശാസ്ത്ര വിഭാഗം വിദ്യാർഥികളും എൻസിസി നാവിക വിഭാഗം കേഡറ്റുകളും ചേർന്ന് സംഘടിഷിച്ച ഊർജ സംരക്ഷണ റാലി മരട് നഗരസഭാ ചെയർ പേഴ്സൺ സുനില സിബി ഫ്ളാഗ് ഓഫ് ചെയ്യുന്നു. ഡോ. സിബി മാത്യു, ജോർജുകുട്ടി ജോസഫ്, മാത്യു ജോർജ്, ഡോ. റോബി ചെറിയാൻ, പ്രഫ. അലക്സ് ഷിനു എന്നിവർ സമീപം.

Two awareness classes were organized under the URJAKIRAN project. In the first class, more around 100 members of the local public attended. Dr. Mathew Jose led the awareness programme. Booklets were distributed. In association with the KSEB, CFL lamps were distributed to the public. A survey and an LED making workshop were also conducted.



Urjakiran

6.4 Tourism Club - organised National Tourism Day in January with stress on the international theme: sustainable tourism for development. As a token they honoured the staff who undertake the campus environment maintenance work. A paper-bag making training was given to the club members who produced sufficient number of paper bags for the college purposes



Tourism club conducted a rally for river protection this year to spreading awareness for protecting rivers of Kerala

Bike rally to Cheeyappara – Members of the faculty and students organized a bike rally to Cheeyappara waterfalls and cleaned the premises and spread awareness on cleanliness to the tourists.

6.5 Agriculture Club

The agriculture club comprises 80 members. Activities of the club mostly were done in Saturdays and after the class hours with the active participation of the students. Over 200 grow bags were prepared in college terrace. Lady's finger, chilly, tomato, spinach, brinjal, pea, cabbage, cauliflower etc. were grown and vegetables sold in the Heartian harvest Shop in College. Farmers' Day on August 17th was celebrated with much enthusiasm. As part of it, charts on farming has displayed in the college portico and *nadan pattu* and quiz competition were conducted. A survey under Organic Charitable Trust was done at Kanthalloor, Idukki from 29th September to 1st October. Nine members from Agriculture club along NSS volunteers and PG students from Environmental Students took part in this under taking.

6.6. NSS - led greening-cleaning activities on the campus on a regular basis. As part of 'harita keralam' project NSS together with NCC units joined the local bodies in clearing a half acre plot of highway land which was a waste dump. It has been transformed and converted into a meeting place and a garden (in the making). 15 tree saplings of indigenous species have been planted.



Haritha Kerala Mission



Environment Day

On Independence Day, a 'Save Periyar' cycle rally was also organised by NSS unit.

The NSS unit **planted 50 saplings** on the **KURTC** bus stand at Thevara and have taken upon themselves the task of protecting them in collaboration with KURTC employees.

Nattarivu fest - closely linked to bio-diversity is also our cultural diversity. In some cases both are linked. e.g., the *mudiyett* reflects many aspects of nature, and the entire setting and the huge masks are all made directly out of what is available in nature e.g., arecanut leaves and other parts.

Folk songs are rooted in an agrarian culture and refer to the various practices related to food, agriculture, labour etc.

6.7. On Independence Day in every year, NSS unit of the college campaign for environment friendly living. NCC units have led cleaning campaign of public places like local Bus stand.



6.8. **College Union** led a campaign of managing waste by creating a recreation area adjacent to college ground and backwaters, naming it *kadavu*. The materials used were waste materials of vehicular parts, plastic bottles, chemical containers, disposable cups etc. The area was converted into a park with plants that would attract butterflies.



A 'recycled' venue for a refreshing time

BELIZABETH THOMAS
DECCAN CHRONICLE
What makes the were collected by students from our campus. Only a few items such as tyre were sourced from outlake that flows nearby, when the college union decided to set up a park on the campus, everyone were sourced from outlake that flows nearby, when the college union decided to set up a park on the campus, everyone were sourced from outlake that flows nearby, when the college union decided to set up a park on the campus, everyone were sourced from outlake that flows nearby, when the college union decided to set up a park on the campus, everyone were sourced from outlake that flows nearby, when the college union decided to set up a park on the campus, everyone were sourced from outlake that flows nearby, as a say a that the lake. We park the thin the park," says Shotano, a third year BSC Botany student. There is a beckury of the backdrop done by Nikhil the tyres into swings and seats. Other ideas came gradually."

The tyres are painted in different shadees and one sat has a picture of the park in the future. "This is next the campus Aloro were converted by students and the campus. Also, we got a park alor were collected by students are converted were sourced from outlable that the lake. We park the campus, always as and the lake. We park the campus, always as and the area of the park in the fluture. "This is a solice the campus alore were sourced from outlable to the lake that flows a park. The name Kadavu is scribbled on a marble piece we got from the campus. Also, we got a park by a trailly ruined ferry that had drowned in the lake. We park the thin the park." says Shotano, a third year BSC botany student. There is backdrop done by Nikhil the area of the park in the future. "The name Kadavu is scribbled on a marble piece we got from the campus. Also, we got a park by a parked it would be on a marble piece we got from the campus. Also, we got a parked thouse the campus. Also, we got a parked it would be apark in the lake. We park the campus and the campus. Also, we got a



It also presented a music band 'ORALI' which is dedicated to environment protection as one of its key areas.

6.9. SADAS (Students Against Drug Abuse, Alcoholism and Suicide) is a service club of the college focused in changing the society for the better. Last year SADAS launched a programme called Addicted to Nature & Tree Challenge Programme involving students and staff taking up the **challenge of planting trees**. 140 trees were planted during the tree challenge programme.



- 6.10. **SWASTI** the women's club, had a 2 days of intensive training led by Sri Varghese Paul for making environment friendly products.
- 6.11. Department Associations take up on a regular basis cleaning activities.







6.12. **Birds Club:** The inauguration of birds club, a sister movement of nature club was done by Dr. Anoop Das of MES College Mampad on 6th December, 2017.

7. ACADEMIC ACTIVITIES

7.1. Introduction of mandatory Environment Education Course - College became first arts and Science College of the state to introduce an additional mandatory environment course of 4 credits. The curriculum was revised to make this mandatory for all UG programmes. The classes are spread all through the first year, with a field

- visit and the usual tests for assessment. This is done as a token of the campus commitment to promote a lifestyle that has concern for the planet.
- 7.2. Introduction of new programme in Environment Science A new M. Sc programme has been introduced in Environment Science and as part of their training they are trained to actively involve in issues of environment especially waste management and promotion of biodiversity.
- 7.3. Biodiversity Seminar The Department of Zoology organised UGC sponsored National Seminar on Biodiversity, Climate Change and Sustainable Development; Issues, Challenges and Opportunities on 06.01.2016.



- 7.4. The Principal, Dr. Giby Kuriakose, Prof. Ebin P.J., Dr. Mathew M.J. have been on the regular list of invited faculty as resource persons for different programmes at different institutes at different places on species conservation, bio-diversity, waste management and sustainable development.
- 7.5. First year students were given a lecture on biodiversity by Dr. Jomy Augustine, HoD, Botany, St. Thomas College, Pala
- 7.6. Two groups of students put up waste management and recycling related exhibitions (MA Economics and M. Com).

8. RESEARCH & PROJECTS

8.1. Orchids

Dr. Giby Kuriakose has completed a major project on 'Spatial distribution of Orchid communities in relation to their habitat. A new collection of orchid has been introduced on the campus and plants are also available for f sale.

Dr. Giby Kuriakose and Ms. Jis Sebastian have initiated a wild Orchid restoration programme involving school children funded by San Diego County Orchid Society, California, U.S.A. The program aims at generating a conservation approach among school children by learning orchids, one of the curious group of flowering plants. The College and the team is planning to continue the program at different places in the coming years. The programmes were conducted at Govt. Higher Secondary School, Vythiri, Waynad.



8.2. Arachnology

The spider research team in the Division of Arachnology of the Department is an expert group on spider taxonomy. Over the years the division has grown to become synonymous with spider research in India. This is the only Arachnology research center in South India and the most well known among the very few in India.

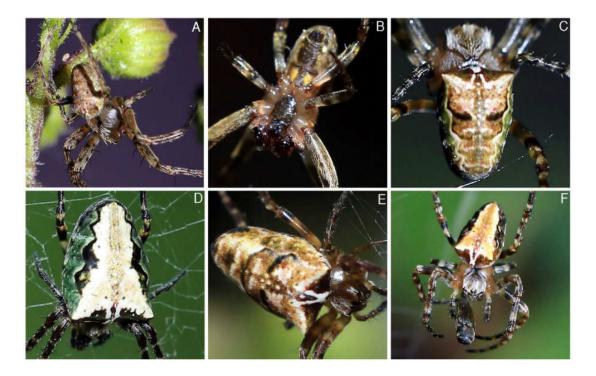
Identifying and cataloguing the spider diversity of South India particularly Kerala has been the primary motive of the division since inception. This is the only centre in South India devoted exclusively for the documentation of the diversity of spiders and other related groups of organisms including pseudoscorpions and millipedes. The research team has so far identified more than 500 species of spiders from South India including more than 50 species new to science, around 50 first sightings in India and 60 endemic species. This includes the discovery of two new genera of spiders - an orb-web weaving spider genus *Plebs* and a wolf spider genus *Ovia*. Apart from spiders, the team has also published a taxonomic revision of the south Asian millipede genus *Chondromorpha*. Notably, this is the first ever scientific paper from India on millipedes in the post-Independence era.

Division of Arachnology discovered seven new spider species in 2016. Of these, *Tropizodiumkalam*i and *Tropizodium viridurbium* belong to the family *Zodariidae* (ant-eating spiders), *Shearellaalii* belongs to the family *Tetrablemmidae* (armored spiders), *Cambalidadeorsa* and *Cambalidatuma* belong to the family Corinnidae (ant mimicking spiders) and *Stenaelurillusdigitus* and *Stenaelurillusgabrieli* belong to the family Salticidae (jumping spiders). The species *Tropizodiumkalami* is named after Bharat Ratna Dr A.P.J. Abdul Kalam, the former President of India, *Shearellaalii* is named after Dr Salim Ali, the Birdman of India and *Stenaelurillusgabrieli* is named after Padma Bhushan Fr. Gabriel Chiramel CMI, the founder of the Department of Zoology. The details of all the new species. The information were published in various volumes of the international journal Zootaxa published from New Zealand.

A new genus was discovered in the Western Ghats called Genus Ovia.



The research team has also successfully carried out a number of externally-funded research projects, mostly on the documentation and quantification of the biodiversity of the spiders of Western Ghats. These include a project funded by Kerala State Council for Science, Technology and Environment, (KSCSTE) Thiruvananthpuram, Kerala on the qualitative study of spider diversity in Ernakulam district, Kerala State; a project funded by Indian Council of Agricultural Research, (ICAR) New Delhi, on the bioecology, conservation and predatory potential of spider fauna in vegetable and rice agroecocystems in central Kerala, with Kerala Agricultural University as the collaborating agency; a project funded by University Grants Commission (UGC) on the study of the diversity of Mygalomorph spiders; a project funded by Ministry of Environment and Forests (MoEF), New Delhi on the bioecology of spiders of Western Ghats of Kerala; three projects funded by Dept. of Science and Technology (DST) on the study of spiders of Western Ghats; and a project funded by International Foundation for Science (IFS), Sweden on the study of the spider fauna of Agasthyamalai Biosphere Reserve. The team has published more than 70 publications on various aspects of the taxonomy, diversity, ecology, biogeography and conservation of spiders and millipedes, including the much sought after book, Spiders of India.



The team has also launched a website on spiders for the first time in India, www.southindianspiders.org, which is rated as one of the best visually pleasing, colourful and informative sites on spiders. The response to the site has been overwhelming ever since its inception receiving enquiries and responses worldwide.



Website: www.southindianspiders.org

Members of the research team have over and over been honored with international fellowships and grants. These include the prestigious Endeavour Award of the Govt. of Australia for postdoctoral research conferred to Dr. Mathew M.J. and the Encyclopedia of Life (EOL) Rubenstein Fellowship awarded to Dr. Sudhikumar A.V., to name a few. Dr. P.A. Sebastian, director of the division, has chaired many technical sessions in various international conferences of Arachnology.

- 8.3. Dr.Giby Kuriakose has initiated a study to formulate measures to eradicate Mucuna brachtiata, a nasty weed, from the Kanyakumari Wildlife Sanctuary, Nagercoil, Tamil Nadu from August 2017
- 8.4. Wetlands Minor project by Ms. Agile Joy on 'Environmental impact of paddy and pond farming in the pokkali fields of Kerala was completed and submitted to UGC.
- 8.5. Zoology Projects group activities
 The students of B. Sc Zoology have a hands on training related to bio-diversity. In the final year, they are formed into groups of 5 to 7, under the guidance of faculty

members and a yearlong project on apiculture, pisciculture, cuniculture, quails, poultry etc. are given to them for a 'learning by doing' project.

8.6. Botany PG Projects

Botany Post Graduate students engaged in various research projects every year.

Mr. Prasant Prabhu – Diversity of Pteridophytes of Devikulam Taluk

Seethal S.Kumar – Diversity and Taxonomy of Andrographis of Kerala

Sreehari S. Nair – Diversity and Taxonomy of Ficus of Kerala

Sayana John – Floristic Diversity of Ponnukkudam Sacred Grove, Thevackal.

- 8.7. Aquaculture projects The promote of Miss Kerala species Dr. Anna Mercy is a faculty on the campus and she has conducted 3 trainings of ornamental fish production for the community in collaboration with MPEDA.
- 8.8. Botany projects A research is going on as to how the invasive species of 'mile-a-minute' can be converted to natural fibre.
- 8.9. Dr. Johnson Palackappilli completed a project on Traditional Food Diversity of Kerala and documented five such practices.

9. ENTREPRENEURSHIPS

9.1. Heartian Harvest - Heartian Harvest, a venture of the SH community to apply their knowledge to go beyond mere consumption to green production in order to promote the message of 'healthy living'. Heartian Harvest is a marketplace where students and staff can sell and buy organically produced vegetables, fruits and homemade snacks. The stall is open on all Mondays and Thursdays. About 10 faculty members and 20 students are actively involved in this productive activity.



- 9.2. **Organic rice powder** through heartian harvest, the products from the organic farming at Arayankav is converted to value added products like rice powder.
- 9.3. Botany Department hands on training has led to production of several materials including chocolates, several value added products, homemade pickles, organic food, seedlings of vegetables, orchids, etc.
- 9.4. Sapling distribution Students of the Department of Botany prepare saplings of various vegetables and sold in the campus. Around 4000 seedlings were sold in 2016 and 2017.



9.5. Carry bags – Tourism Club initiated training and production of paper carry bags to replace the use of plastic carry bags. MA Economics also have organized similar programme.

10. AWARDS

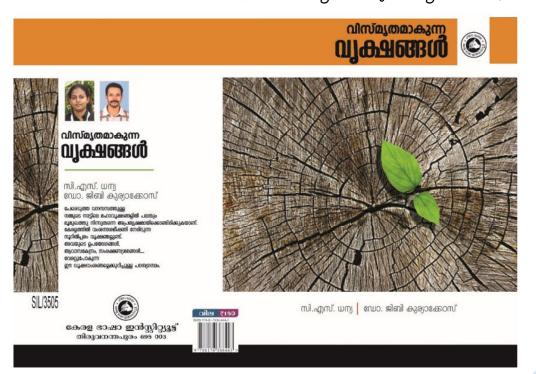
10.1. Paristhithi Mitra Award – by CEERD (Centre for Environmental Education and Rural Development) of St. Stephen's College, Uzhavoor the valuable services towards the promotion of environmental education, protection and conservation for the year 2017. Last year the college also received a special appreciation from the CEERD.



10.2.The Principal Dr. Prasant Palackappillil CMI was the recipient of the Best Principal Award instituted by Retired Principals Association for his selfless services in the management as well as in the field of environmental protection. He is the chairman of ORGANIC KERALA CHARITABLE TRUST which leads organic food production campaign all over the district. He is also sought after as a resource person in various environment related seminars and panel discussions.



10.3. Dr. Giby Kuriakose was awarded with 'Paristhithi Sahithya Puraskaram' constituted by Sahyadri Natural History Society, Thiruvananthapuram for the book 'Vismruthiyilakunna Vrikshangal (വിസ്മുതമാകുന്ന വൃക്ഷങ്ങൾ).



10.4. Ms. Jis Sebastian, Project fellow, Dept. of Botany - The Dr C. Chandrasekhara Memorial Award for innovative Research in conservation of Forests is awarded to Ms. Jis Sebastian, Project fellow of the Dept. of Botany. Rs. 40000 and a gold medal. She was also selected for a conference at Turkey by British Ecological Society. She would be presenting the major findings of the recently concluded major project, representing the Dept. of Botany.



10.5. Mr. Dhruv Prajapati - Dhruv Prajapati has been conferred the Young Naturalist Award by Sanctuary Asia. It is one of India's most prestigious wildlife awards. This award is for Individuals between the ages of 16 and 25 from whole country, who show extraordinary caring and respect for nature. They have selected him for his research in arachnology under the guidance of Dr. P. A. Sebastian in research projects in Arachnology.



- 10.5. Dr. Mathew M J, Asst. Professor, Dept. of Zoology was awarded a Major Project 'Spiders (Arachnida: Araneae) in the cloud forests of the sky islands in Western Ghats: A taxonomic and eco-biogeographical approach' by DST.
 - Dr. M.J. Mathew also attended the Asian Science Congress of Arachnology, held in China in Nov.2017.
 - Best Campus award by Agri Horti-cultural society was given to the college in the year 2015-16.



- 10.6. M. Com waste recycling/waste management project presented at Albertian Exhibition in January 2017 was awarded first prize.
- 10.7. Principal was appointed on the expert committee on Social Impact Assessment of development projects in Greater Cochin as environment expert.
- 10.8. Mr. Vinil K.V., Dept. of Economics was appointed as the Vice Chairman in one of the committees of the District Planning Board, Ernakulam.
- 10.9. Dr. Johnson X. Palackappillil is the Vice Chairman, Suchitwamission
- 10.10. Dr. Johnson X. Palackappillil is a member of the Social Impact Assessment Committee, Kochi Metro
- 10.11.Prof. Ebin P.J. was selected as District Level Expert Panel of Kerala Biodiversity Board
- 10.12. Dr. Giby Kuriakose is the District Coordinator, Bird club International

10.13. Dr. Giby Kuriakose is a Life member in Indian Association for Angiosperm Taxonomy

Resource persons

Dr. Giby Kuriakose and Ebin P.J.: Resource persons for the two day workshop on Angiosperm taxonomy "Working with Plants" organized by the Department of Botany, Govt. College, Kottayam on 2nd and 3rd of November 2017.

Dr. Giby Kuriakose is a resource person in SAHYAYANAM, a field training program for Ayurveda doctoral students organised by the Kothamangalam unit of All India Ayurveda Medical Association at Bhoothathankettu since 2015. He is also resource person for several training programs such as DNA club an initiative of MSSRF, Waynad to train 10th standard students on plant identification, pollination biology, conservation biology, plant animal interaction since 2010.

11. ACTIVITIES - REGULAR AND ONGOING

- 11.1. Classroom cleanliness campaign is an annual contest based on the maintenance of class rooms which are periodically inspected by a team of staff and graded. Some of the classes have taken initiative to paint the classrooms on their own to maintain them neat and to give an inspirational message to the learner.
- 11.2. Campus clean campaign Campus cleaning programmes have been continuously organised by various fora of the college like NSS, NCC, women's cell, nature club. Jesus Youth conducts cleaning programme in a weekly basis. The student Development Officers of the college lead the cleaning programme. Classroom beautification contest Each classroom is evaluated by the principal or student development officers in a monthly basis and the best class is awarded. These programmes help to develop an environmental consciousness to the student.





11.3. 'Suchitwa Bodhana Yajnam', jointly organized by Rajagiri Outreach and Mithradham was accorded an overwhelming reception and participation by Primrose Nature Club and NSS. Suchitwa Bodhana Yajnam - As part of Suchithwa Bodhaya Yajnjam, Bhoomithrasena Club of the college, distributed around 500 vegetable saplings at Thevara. They also collected plastic bottles, milk covers and carry bags, as part of plastic recycle campaign. The collected materials will be recycled with the help of Central Institute of Plastic Engineering and Technology (CIPET).



11.4. Mangrove conservation -. A larger area near Nettoor railway station is regularly monitored and action plans have been put forth for the conservation by the Nature Club of the college. In addition, a small patch of mangroves is being preserved near college campus on its border



Mangrove Conservation

11.5. **Butterfly garden** - There are two locations dedicated for butterfly garden on the cmapus, one being sheltered and protected by the school under the guidance of college, the other directly by the college jointly by Zoology and Botany departments.



Butterfly garden

- 11.6. **Nakshatramarangal** planting saplings corresponding to the zodiac signs was a major initiative of the college. The campus boasts of two sets of Star Trees, and two butterfly gardens, under the guidance of college.
 - കാഞ്ഞിരം (Strychnos nux-vomica), നെല്ലി (Emblica officinalis), അത്തി (Ficus racemosa), ഞാവൽ (Syzygium cumini), കരിങ്ങാലി (Acacia catechu), കരിമരം (Diospyros ebenum), മുള(Bambusa bambos), അരയാല് (Ficus religiosa),നങ്ക് (Mesua ferrea), പരോല് I (Ficus benghalensis), പ്ലാശ് (Butea monosperma), ഇത്തി (Ficus tinctoria), അമ്പഴം (Spondias pinnata), കൂവളം (Aegle marmelos), നീര് മരുത്(Terminalia arjuna), വയ്യാം കൈത (Flacourtia jangomas), ഇലഞ്ഞി (Mimusops elengi), വെട്ടി (Aporusa lindleyana), വെള്ള പൈന് (Vateria indica), വഞ്ചി(Salix tetrasperma), പ്ലാവ് (Artocarpus heterophyllus), എരിക്ക് (Calotropis gigantea), വന്നി (Prosopis juliflora), കടമ്പ് (Anthocephalus cadamba), മാവ് (Mangifera indica), കരിമ്പന (Borassus flabellifer), ഇലിപ്പ (Madhuca longifolia)
- 11.6. Visits and Nature Camp by student groups as part of environment study were made to Thattekkadu, Munnar, Kanthalloor, Marayoor, Anamudichola, pampadumchola, Wagamon, Chinnar, Iravikulam-Rajamala, Athirappally, Kaipuzha, Vazhachal, Kapradkkad, Mangalavanam, Wayanadu etc. BSc Zoology students also visited Bombay Natural History Society, Bombay Natural History museum, Ghautala Wildlife Sanctuary, Maharashtra etc.



11.7. Greening – Every major occasion or visitor, and at times batches are celebrated by planting trees – all of them indigenous, and some of them very rare and enlisted in the list of threatened or endangered species (for example, Dr. A.P.J. Abdul Kalam planted Koori (cynometratravancorica) and Dr. M.S. Swaminathan planted Rudraksham (Elaeocarpusganitrus)



11.8. Bio fencing using Thunbergia grandiflora and Passion Fruit was introduced in front of College canteen to prevent dust.



11.9. Bio wall - The new toilets constructed on the East Campus was to be having a brick wall. Instead, a bio-wall of bamboo and similar varieties have been erect.



11.10. Bio Bouquet - Using Bio Bouquet to welcome guest of programmes becomes a practice in the college.



11.11. Waste Management - Waste is gathered and periodically segregated into biodegradable and recyclable, and a small income is annually generated from the disposal of recyclable waste to the tune of about Rs. 30000.00 per annum.

12. ACTIVITIES - NEW

- 12.1. A New Healthy Practice to conserve bio-diversity: College hand book is brought out on the basis of the UN Theme of environment. This year it was on International Year of Pulses. This year, it was decided to have only minimum information required to be printed in the handbook and the regular information of awards and rules & regulations were published on the website. Even the detachable scholarship application form was avoided and made available on the website so as to save at least 50000 pages. Similarly, the annual news letter which used be printed about 2500 was restricted to 1000 and was made available on the web in order to save paper.
- 12.2. Periyar Protection Campaigns Punarjani, an awareness programme about the deplorable condition of the river Periyar and its protection. The event was star-studded with eminent personalities like Dr K.J. Yesudas, Biju Narayanan, Captain Raju and Kochouseppu Chittilappally. A master plan for the protection of Periyar was introduced. College has been an active partner in the various campaigns related to Periyar Protection. Dr. C.M. Joy has been spearhead 'puzha samarakshana samithi' of Aluva.





12.3.Green audit - A green audit has been initiated by the college in which five areas are covered such as water audit, energy audit, green campus audit, carbon footprint and waste audit. The Audit is being done under the leadership of Dr C.M. Joy, former faculty of the Department of Botany of the college. Nature club, Department of Physics, NSS, NCC and Women's Cell collect data for the green audit. Dr C.M. Joy has formed a consultancy for Green Audit and he has been invited to do green audit of several institutions.

12.4. Celebration of International Year of Pulses

- In relation to International Year of Pulses (IYP) 2016, SH College Thevara in collaboration with Kerala State Council for Science, Technology and Environment (KSCSTE) has organized different programs on 09th and 10th December 2016. The college has organized a seminar and different intercollegiate competitions in connection with international year of pulses. The IYP 2016 aims to heighten public awareness of the nutritional benefits of pulses as part of sustainable food production aimed towards food security and nutrition.
- Traditional food of pulses with jaggery and coconut was served for the participants.
- The one day seminar entitled 'Innovations in Organic Farming: Prospects and Challenges' was organised on 9th December, 2016.
- A poster competition was held on the topic "Pulses for our future' on 10th December, 2016.
- Elocution competition was also held based on the topic 'Role of pulses in sustainable food production' on 10th December, 2016.
- An intercollegiate debate competition was held on December 10th.
- Pulses poster exhibition 02.08.2016. The leading Malayalam Nature poet Sri Murugan Kattakkada spoke and recited many poems related to environment protection. The outstanding among them was 'Manne nambi maram irippu... namme nambi mannirippu'.
- Pulses Quiz was conducted.
- Exhibition of pulses An exhibition of 40 different varieties of pulses was arranged at the college portico on 22.11.2016

- Pulses farm a two-cent plot was converted into a pulses plot with Tuvara Dal as border. 1 meter
- 12.5. **Fruitipedia** Department of Botany organised the second edition of fruitipedia this year on 3rd August, 2016. Endemic and exotic fruits varieties with brief description were exhibited in the college portico.



12.6. **Flora Fest** - The Department of botany organised Flora fest every year, the cultural fest of Botany. As part of the fest, a spectacular exhibition is arranged in every ear in which hand made products, indigenous food items, vegetable seedlings, flowers, medicinal plants and mural paintings were exhibited.



12.7. Integrated farm development – Animals rearing & waste management - The campus boasts of various domestic animals providing a rich blend of animal husbandry and organic farming. This is led by two of the faculty members Dr. Fr.

Joseph (English) and Fr. Tomy (German). There is a farm of cows, goats, poultry, ducks, turkey. Etc.

Student projects involve rearing of chicken, rabbits, guinea pig etc.

The campus fish production of Thilapia (red-belly), Vaala, Pearl spot and Kuruma led to a haul of about 150 kgs this year.



Apiculture is also done by a group of students as part of their projects.

There are two cows tethered in the college grounds so as to biologically control the growing grass and gather bio-manure (cow dung). The food waste collected from bins is used as feed for the poultry on the campus. There is also a dog of local breed.

12.8. Wealth from Waste for Social outreach - Jesus Youth of the college collected waste from the college and neighbouring houses and the amount generated (25000) from the the waste collected was spent for the needy people of the locality. Jesus

- youth also collected used dress materials (around 3000) and distributed to the needy.
- **12.9. Re-use Society** Jesus Youth led a campaign to gather waste pen on the campus and cleaned and converted many of them by inserting new re-filler and was sold at subsidized rate at the campus 'honesty shop'. Around 200 pens in a week are reused through this shop.





12.10. Exhibits of household utilities from Waste - Since waste management is closely linked to environment protection and bio-diversity, many efforts are made to reduce

and manage waste. There is a regular exhibition by Commerce students named 'UMANG' which showcases various models of transforming waste materials into useful products. Their participation won first prize in an inter-collegiate event held at St. Albert's in late January 2017.

12.11. Special Trees on the campus

- Calamus gamblei Araceae (Endemic) chooral cane
- Cynometra travancorica (Endemic and Endangered) Fabaceae- Koori
- Cynometra beddomei (Endemic and Endangered) Fabaceae Koori
- Hopea racophloea (Endemic and Endangered) Dipterocarpaceae -
- Vateria indica (Endemic and Endangered)- Dipterocarpaceae Vellapine
- Vatica chinensis (Endemic and Endangered)-Dipterocarpaceae Adakkapine
- Terminalia bellerica (Medicinal)- Combretaceae Thanni
- Hydnocarpus pentandra (Endemic & medicinal) Marotti
- Antiaris toxicaria (Moraceae) (Medicinal and Endemic) Marvuri
- Santalum album Sandal wood Chandanam
- Aloe vera (Non bitter variety)
- Butea monosperma (Flame of the forest) (Plaash)
- Chayamansa (Mexican leafy vegetable)
- Anona muricata Mullaatha
- Simaruba glabra (Lakshmitharu)
- Tetrameles nudiflora (Cheeni)
- Pterocarpus santalinus (Rakthachandanam)
- Alstonia scolaris (ezhilam pala)

12.12. New trees planted

The college has initiated planting a new row of varieties of coconut trees in the lakeview area. It has now 6 d x t varieties included. Other new species introduced were: Bauhinia tomentosa (Yellow Orchid Tree - *Manja Mandaram*), fig, Vellachampa, Peraal, Kumil, Chinese Guava (*Pera*), Rambootan, etc

12.13. Celebrate Menstruation - Towards eco friendly menstrual practices - an environment friendly menstrual training programme was launched on the International Women's Day. The programme, for the first time in Kerala, provided eco-friendly menstrual training thereby pointing at the women's role in the conservation of nature. Apart from 'Surakshita Kochi', Anbodu Kochi and people for Animal (PFA) also joined hands for the venture. Eminent personalities like Ms Saali

Kannan, the National Award winner for animal welfare and Dr CM Joy, environmentalist were also present at the venture.



12.14. Krishi Gatha – Organic farming was the major landmark programme of the college. The students and staff of the college join hands together in planting paddy saplings in four acres of paddy field at Arayankavu. The knee deep muddy paddy field and the green saplings threw open before the students a new world of farming experience. This event acquainted the students with organic farming. This programme ensured the lively participation of the local people, making it a collaborative endeavor.



The cultivation of the upland paddy (karanellukrishi) – It was the fifth consecutive year of experimental upland paddy cultivation undertaken by the college. The project was conceived to provide the students with direct experience of the various stages of organic paddy cultivation. Though the yield was below what was expected, the whole experience was richly rewarding to the participants. Kuruva paddy variety was cultivated this year.



12.15. Speaking Walls

As a students' response to Biennale, a fest was organised by college union called 'parva' under which the students were permitted by the management to make use of the walls for communication through paintings. Most of them are based on environment and sustainability.





Speaking Walls - Parva - Campus Binnale

12.13. Efforts to conserve water

Two new wells have been dug for tapping surface water, instead of bore wells which lead to greater exploitation of water. Of the two one is being re-charged with a recharge pit with water collected from the terrace.



Our newly proposed building plans include underground rainwater storage facility and water recycling facility.

The backwaters of Vempanadu adjacent to the campus was cleaned twice of the waste - especially, plastic - with students spending service learning hours.

12.14. **Fort Kochi beach cleaning** programme was led by HEAL as part of students' service learning programme. Every week there will be a batch of 30 to 100 students go to the beach and involve radically beautifying a part of this common heritage.







12.15. A regular water analysis unit is managed under the leadership Prof. Midhun of Chemistry department.



12.16. A huge water storage tank of about 40 cents (capacity of 30 Lakhs litter) has been created in the wet-land paddy field at Thottara, jointly owned by the College and Rajagiri College of Social Sciences. It has immense storage of clean water which was extremely useful in the paddy cultivation during summer, at a height of 6ft from the ground level, using earthen bunding. It also very helpful for the birds around the paddy fields during the summer days.



Pond at Arayankavu

12.17. Water conservation efforts – rain water, wells, tanks. The college boasts of 30000 litre rainwater harvesting tank. A well was dug to take care of the water needs and to tap surface water. Another small well with a recharging pit was introduced as part of this campaign.



12.18. Energy Conservation and Alternatives

Already a solar unit of 20 kw is there on the campus. A proposal for on-grid plant of 30 kw has been proposed to the KSEB and funding resources are being tapped.



Solar Energy System



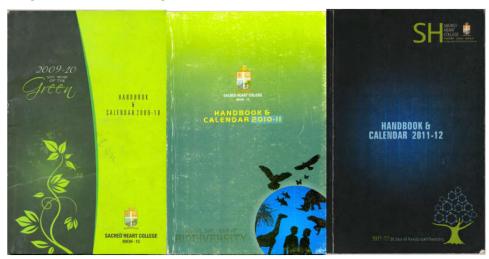
- **12.19. Gobar Gas plant** The management residence kitchen energy needs are being managed by a huge **gobar gas plant**. Water boiling in the college canteen is entirely done on energy generated from bio-gas from kitchen waste.
- **12.20.** Car Pooling Two teams of staff members practice car pooling so as to save energy and save money.
- **12.21. Bicycle riding** is encouraged and promoted on the campus. A special award is given to regular bicycle users during the annual day. A **bicycle rally** was conducted to create awareness on environment on Aug. 15th.



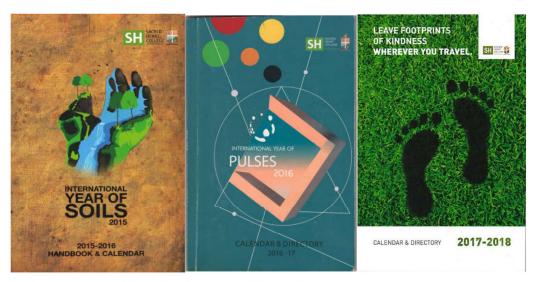
12.22. Six windillators have been installed on roof tops to control heat of the buildings. These are energy saving mechanisms.

12.23. College handbook cover

College handbook is designed on the basis of the UN Theme.

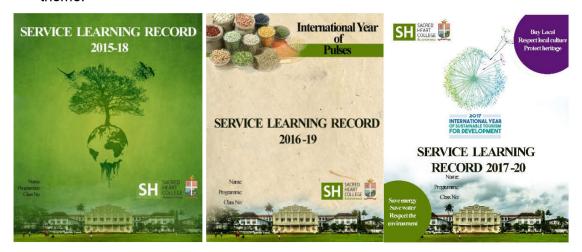






12.24. Cover page of Service Learning Record

A mandatory one-credit course of service learning is included in the UG programme. A student has to complete 40 hours of service for the successful completion of the degree. Most of these hours are used for environment protection and conservation of biodiversity. So a culture of environmental protection is developed in students. The cover page of the service learning record is also designed based on the UN theme.



12.25. Other Healthy Practices

No to 'disposables': It has been a practice to use no disposables plates in the programmes conducted in the college. Efforts are being made to avoid the paper disposable cups as well realizing their adverse impact on the environment. For this 300 steel glasses have been purchased to be used during functions.

It has been carefully monitored that no sweets wrapped with plastic is distributed during celebrations organised by the college. Rather more environment friendly groundnut sweets (kappalandi mithai) or gingely balls (*ellunda*) are introduced.

12.26.Re-use of used FLEX - Student volunteers convert used flex into beautiful backdrops for various programme organised in the college.



12.27. 35 Students visited Thenmala Ecotourism and cleaned the premises of the ecotourism and dam. They also make a campaign for cleanliness practices to the visitors.

13. FUTURE PLANS FOR DEVELOPMENT

- A green building is planned to accommodate the growing needs of development
 of the College. This 120000 sq feet building is proposed to be energy efficient,
 green, with sufficient provisions for water recycling and rain water harvesting,
 besides having a bio-diversity rich boundary.
- Platinum Jubilee Bio-diversity Register is planned to develop in the next year. A
 local Biodiversity Register (Divisions 57 and 58) is also planned.
- Bio-diversity section in the existing Heritage Museum of the college is planned to be created.

- Conservation of Mangrove patch in collaboration with Maradu Municipality and Southern Railway.
- Maximise the greening process extending up to the 35 acres property comes under the management and to develop this as a biological park.
- Knowledge registry of people involving traditional medicine and agriculture

14. CONCLUSION

Sacred Heart College, after its vision, is in relentless pursuit of sustainability and as a first step, making efforts to be a Green Community, starting with green campus. We are very glad to present our activities for promoting, preserving and conserving biodiversity which is dependent on human awareness and critical action. As an academic institution, this includes teaching-learning, research and reaching out to others, besides, regular activities, directly or indirectly affecting bio-diversity. These have been briefly presented for your perusal and judgement.



Dr. Johnson X Palackappillil
Principal
Sacred Heart College (Autonomous)
Theyara, Kochi-682 013