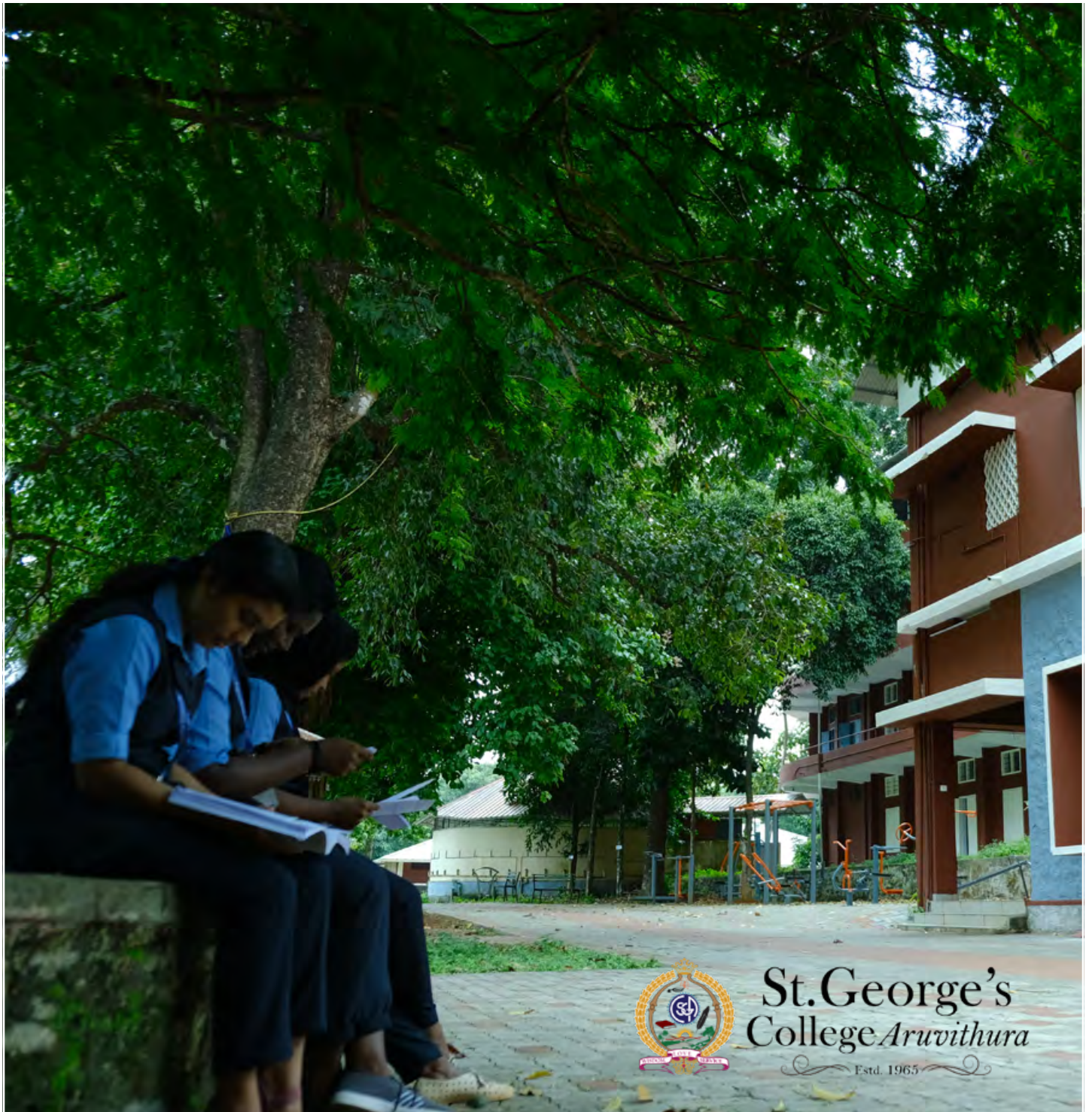


HARITHACHETANA

Green Campus Initiatives and Environmental Practices

Best Practice – 01



St. George's
College Aruvithura
Estd. 1965

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HARITHACHETANA

OBJECTIVES OF THE PRACTICE



- To mobilize the stakeholders for collective actions to perpetuate Sustainable Development Goals (SDG's), and to achieve it through promoting values of biological diversity.
- Propagate sensitization among students to contribute towards the ethical goal of preserving nature.
- Implement and enforce environmental regulations and policies through preservation of natural resources, climate action, water and waste managements, quality audits, pollution prevention, promotion of sustainable consumption and production patterns, green education campaigns and workshops.
- To enhance a resilient future by creating carbon-neutral greener spaces.
- To promote social equity and justice to achieve a harmonious balance between environment protection, social well-being and economic prosperity.

THE CONTEXT

St. George's College, Aruvithura is situated in the eastern part of Kottayam District, in a transition zone between midlands and Western Ghats where the Meenachil river flows through the borders of the campus, an area rich in biodiversity. Most of its student community hail from the hilly areas of the eastern part of Kottayam district with unique geo-climatic conditions and consequent high socio-economic vulnerability to calamities like flash floods, land slips and land slides, earthquakes etc. The unprecedented flood of 2018 took a heavy toll on the life and property of the people of the area and some of our students were not spared. This triggered the institution to incorporating sustainable practices into its operations and educational programmes in compliance with the global efforts to address climate change and protect the environment. The

introduction of the Harithachetana practice in the college setting takes place within the broader context of fostering a responsible stewardship among students, faculty, and staff. The introduction of the practice begins with comprehensive research and assessment to identify areas where improvements can be made. To ensure the successful introduction of the practice, the college engages in extensive communication and education efforts. Awareness campaigns are organized to inform and engage the college community and the community around, emphasizing their positive impacts on both the environment and individual well-being.



THE PRACTICE

Green campus Policy

The institution has drafted a well-defined Green campus Policy that improves energy efficiency, mitigates carbon footprint and enhances environmental quality, making the 26 acres of lush green land an ideal green space conducive for curricular engagements and sustainable practices.

The Policy on Water Conservation aims at the sustainable use of water resources in the campus. Rain Water harvesting, Water Testing facility available in the campus is accessible to the public especially the farming community of the locality

The Policy on Waste Management follows the 5-R principle of Reduce, Reuse, Recycle, Refuse and Regenerate to help remain compliant with all waste legislations. The earth worm bio-compost plant works to dispose of and process organic wastes. Degradable waste is managed through the biogas plant. Plastic waste is managed by the Haritha Karma Sena of Erattupetta Municipality.

Energy Policy of the institution ensures the optimum allocation of alternative energy resources within the campus by the installation of solar panels, solar energy power units, sensor-based solar light, LED bulbs and tubes and bubble wrap insulation for heat management.

The Vehicle on Campus Policy aims at eco-friendly means of transport by encouraging bicycles, electric vehicles as part of zero carbon emission. The entry of student's vehicle is strictly

restricted inside the campus. students who are commuting by their own vehicles are instructed to park in the parking lot outside the college campus. Inside campus Parking slots are available only to the Staff and non-teaching staff of the college. Visitors' vehicles are restricted beyond 50 meters from the entrance. Signages are kept at vantage points restricting entry and parking. As part of green initiatives, college encourages, students and staffs to use bicycles or eco-friendly battery powered vehicles. Many students and staff become part of this movement. The Use of bicycles/ electric vehicles is environment friendly and prevents pollution.

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Green Campus

A green cover is maintained in the campus by planting different varieties of trees and plants. All of them are labelled with bar codes for identification. College maintains aesthetic gardens in its premises. The lawns and trees provide shade and beautiful, lush green ambience. Under the supervision of botany department, there is a butterfly garden in the college, providing a protective environment for butterflies. The colleges also envisage its vital role in implementation of sustainable agriculture, for which a greenhouse cultivation has been set up in the college campus to provide students and public with an insight into sustainable agriculture. The campus is well-maintained





ned, and all waste generated on the campus is segregated and recycled appropriately.

Use of alternative energy sources

At St. George's College, Aruvithura, we are committed to promoting the use of alternative energy sources and implementing energy conservation measures to reduce our carbon footprint and achieve a more sustainable future. The college uses alternative energy sources such as solar energy to reduce its dependence on non-renewable energy sources.

To reduce our dependence on non-renewable energy sources, we have installed solar panels on our campus. These alternative energy sources help us generate electricity, reducing our reliance on traditional energy sources that produce greenhouse gases and contribute to climate change.

Energy conservation measures

We have also implemented energy conservation measures to reduce our energy consumption. Our lighting systems are energy-efficient, and we encourage the use of LED bulbs and energy-efficient appliances. We also have an energy audit system in place to identify areas where we can further reduce our energy consumption. In addition to these initiatives, we have also implemented sustainable transportation measures. We encourage our students and staff to use public transportation, bicycles, and other eco-friendly modes of transportation. This not only reduces our carbon footprint but also promotes healthy living.

As a part of the green initiative activities of the college, inauguration of LED bulbs and the solar panel was done by Sri. Mani C Kappen, MLA Palai. A portion of the existing incandescent and fluorescent tube lights have been replaced with LED bulbs in majority of the classrooms, administrative offices, library, seminar hall, and staff rooms,

primarily for their energy-efficient characteristics. The utilization of LED lights brings several advantages, including their extended lifespan due to the components and light generation process, high brightness and intensity, low carbon footprint, low heat emission, and overall reliability.

Waste management

At St. George's College, Aruvithura, we take waste management seriously and have implemented several initiatives to reduce our environmental impact. We practice waste segregation, where waste is separated into different categories such as biodegradable and non-biodegradable waste, and hazardous and non-hazardous waste. This allows us to recycle and reuse as much waste as possible and minimize the amount of waste sent to landfills. We have also implemented a composting system on our campus. The composting system allows us to convert biodegradable waste into organic compost, which is then used in our botanical garden and poly house for growing organic fruits and vegetables. This helps to reduce our reliance on chemical fertilizers, thus promoting sustainable farming practices. In addition to waste segregation and composting, we also have a recycling system in place.

Water conservation

At St. George's College, Aruvithura, we recognize the importance of water conservation and have implemented several initiatives to reduce our water consumption and promote sustainable water management practices. We have installed low-flow fixtures in all our buildings, including toilets, showers, and faucets. This reduces

our water consumption and helps to conserve water without compromising on the quality of our facilities. In addition to low-flow fixtures, we have also implemented rainwater harvesting systems. We collect rainwater from rooftops and store it in underground tanks, which we then use for irrigation purposes in our botanical garden and poly house. This helps to reduce our dependence on freshwater sources, particularly during the dry season. We also promote awareness of water conservation among our students and staff through various educational programs and awareness campaigns. We encourage everyone to be mindful of their water usage and to adopt water-saving practices in their daily.

Poly House

Polyhouse farming in the college campus is a means to teach students about sustainable agriculture and to provide them with hands-on experience in growing crops. Polyhouses in the campus is used to grow a variety of crops, including vegetables, fruits, flowers, and herbs. It is used to grow plants that are not able to be grown outdoors due to climate conditions. Polyhouse farming in the campus also support the production of food for students, faculty, and staff on campus.



JALACHETHANA



Meenachil River, skirting the campus plays a decisive role in the life of the community around and the institution is committed to conserve this cultural icon and find sustainable solutions for the natural disasters caused by it. The institution undertook many measures towards river and rain monitoring like distribution of rain gauges to students, and assigning student volunteers to measure the rain fall and transfer the data to the jalachetana portal designed by students. The Institution has installed an Automated Weather Station that captures the data of temperature, rainfall, wind and atmospheric pressure. These data are transported to the Jalachetana web portal and is open to public and for research purposes. The college has undertaken the project titled Jalchetana, funded by Koll Science Foundation led by Dr Roxy Mathew Koll, Indian Institute of Tropical Meteorology. The project proposes to undertake the environmental and hydrometeorological monitoring, assessment and restoration of the pure essence of the Meenachil river.

[Jalachethana Webportal](#)

Rain gauges

Rain gauges were distributed among selected students of Bhoomithra Sena Club on 15th July 2021 as a joint endeavour by Meenachil Rain-River Monitoring (MRRM) and St. George's College Aruvithura. The programme was inaugurated by the Honourable Minister of Agriculture Sri.P.Prasad. MRRM Volunteers are regularly monitoring the rainfall at their own places and rainfall measurements are updated every day.

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River Scale

The college has installed a river scale in the meenachil river adjacent to the campus and is supported by Central Water Resource Development and Management (Govt of Kerala). These initiatives equip the institution to send timely warnings to the local community in times of flood.

As a recognition to the activities of MRRM Volunteers, a correspondent of reputed international journal NATURE magazine visited and interacted with the MRRM volunteers of the college.

Meenachil River Rejuvenation Campaign

The college engages actively into the Meenachil River Rejuvenation Campaign. Holding hands with NGOs like Bhoomika the institution engages in initiatives like cleaning the peripheries of Meenachil River, Project on the study of the riverine ecosystem of the river, Celebrating River Day by planting bamboo saplings on the banks of the river, Awareness programmes by noted environmentalists, Nadi vandan (Saluting the River) etc.

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Climate Action Group

As part of Meenachil River Rejuvenation Campaign a climate action group with the students of Bhoomithra Sena was formed under the project Schools For River. The inauguration and orientation of the program is done by the environmental activist Sri. Aby Emmanuel Poondikulam on 09/03/2022.

Certificate courses on Climate Change and Meenachil River Ecosystem

The certificate course in Climate Change and the Meenachil River Ecosystem covers the impact of climate change on the Meenachil River ecosystem, including changes in water flow, temperature, and precipitation. It also covers the management strategies that can be adopted to

mitigate the impact of climate change on the river ecosystem.

Ecosystem analysis of Meenachil river

Department of botany conducted an Ecosystem analysis of Meenachil river in Erattupetta municipality. Analysis studies were done in changes in the water flow, temperature, and precipitation.

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Climate Action Group

As part of the organic farming students of the college involved in a variety of organic farming practices. Students practice Organic farming in the campus by avoiding the use of chemical fertilizers and pesticides. Students use manures such

as cow dung and neem mix to the crops cultivated in the campus. All the students work sincerely in this organic farming programme. The campus has a poly house where organic farming is practised by students. Dry land paddy cultivation is practised in the campus. The Harithasparsham and Grama Samrddhi drives conveyed the message of organic farming and self-sustainability among households in vegetable cultivation. The college also maintains vermi-compost plant in the campus as part of green agriculture practice.



PACHATHURUTH PROJECT

The Pachathuruth Project aims at finding unused areas to create man-made forest-models by including unique trees and indigenous plants in association with the Social Forestry Department of Government of Kerala. In association with Haritha Kerala Mission the inauguration of Pachathuruth – Vidhyavanam was done on 11th June 2021. The program aims at building up a dense area of trees in 25 cents of College Campus. Pachathuruth project aims to find unused areas including public areas and create natural forest models by including

unique trees and indigenous plants and protect them. Locations are being found for this purpose under the leadership of local self-government bodies. Lands of government/private institutions, outskirts, vacant lots in the heart of cities etc. are all suitable places for putting up greenery. The scheme aims at spreading green spaces in the state to combat the adverse effects of climate change. The project is implemented with assistance from bio-diversity board, agriculture department, employment guarantee scheme, social forestry wing of the forest department, environmental organizations, and experts

in bio-diversity field. Saplings of indigenous trees and plants are planted in fallow land and vacant spots available in the St. George's College, Aruvithura campus as part of the scheme in association with Department of social forestry, Govt. of Kerala. Pachathuruthu can play a major role in mitigating the adverse effects of climate change and combating global warming caused by the presence of greenhouse gases. Green patches act as carbon sinks that absorb and store excess carbon from the atmosphere and ensure local biodiversity conservation.

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Field Visits and Nature Camps

Field Visits and Nature Camps are organized to study Forest ecology and to analyze forest in a sustainable production and consumer system. Nature awareness camps are opportunities to know our nature in deep. Science- and nature-themed Camps for students in featured outdoor explorations, science investigations, and behind-the-scenes tours in the Garden's landscape. Each student had full advantage of the Garden's vast plant collection and unique habitats like the native forest, wetlands, and Native Plant Garden. Students attended Nature Awareness camp at Eravikulam National Park from 14 to 16 August 2022. 39 students and 3 teachers participated in the camp. It was a very different experience for the participants to have a walk through the forest and know the flora and fauna there.

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Visit to Vanasthali

Students of the Department of English visited Vanasthali a man made up forest in Malayinchipara, 20 kilometres away from the College on the occasion of the environment day.

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Green audit, Environmental audit and Energy audit

Green, Environment and Energy audits are conducted to assess various environment awareness activities. A green audit of the college campus systematically identified, quantified, recorded, reported and analyzed the environmental aspects of the campus. The green audit was done to identify opportunities for improvement in the environmental performance of the college. A green audit was a valuable tool for impro-

ving the environmental performance of the college. By identifying areas where improvements can be made, green audit helped the campus to reduce its environmental impact and become more sustainable.

Through energy audit in the the campus evaluated energy use in the campus. The goal of an energy audit was to identify opportunities for energy efficiency and conservation.

The Energy and Green audit of the college makes it clear that the college has contributed significantly towards environment and energy conservation.

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Beyond the campus green initiatives

The college engaged in a series of beyond the campus green initiatives. The students of the college visited Vagamon, and collected the plastic waste in and around the tourist destination. The students also did a nature study during this one day visit to Vagamon.

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Other Environmental Conservation Initiatives

Kadarivum Prakruthi Photographyum webinar reflected the behaviour of animals in wild habitats along with Harithabhoomika programme organized by NSS.

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The Birds club in our college was inaugurated on 11/08/2022 by the founder of Birds Club International and film director Sri. Jayaraj. Birds Club International is a non-commercial organisation that aims at promoting global interest in birds, conservation of nature and the environments through public campaigns and education.

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The NSS unit of the college conducted a JaivaPeedika in the campus. This is a shop which sells the articles made by the volunteers as a part of their skill development programme, vegetables from the NSS farm within the campus and seedlings prepared by the volunteers. The shopkeepers were the volunteers themselves and the shop attracted many. All the items put on sale were sold out with great demand.

Members of Bhoomithra sena club participated in VII th Meenachil Odonate Survey organized by Tropical Institute of Ecological Sciences. Students attended a training session and then actively involved in the activity.

As part of World Water Day Observation water pots for birds were placed at different parts of the campus. Placing water pots for birds was done as a means to help birds stay hydrated during hot weather, and to attract birds to campus and help them thrive.

An open discussion was done with Dr. Roxy Mathew Koll (Climate Scientist at the Indian Institute of Tropical Meteorology) by the members of Bhoomithra Sena on the topic "Kalavasthavethiyanavum Athijeewanavum". The program was held on 17th December 2021 and was highly informative.



In connection with the **World Environment Day** celebrations the tourism club of the college initiated the students to **Seed a Plant** at their house and take care of the plant for a year at their house. This initiative is to inculcate the behaviour of respecting and protecting nature

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As part of the Environment day celebration students **Planted Medicinal Plants** in the college campus. Students brought different varieties of medicinal plants like thulasi, aloe vera, turmeric, malainchi, mint, panikoorka etc from their home and planted it in the college premises. A meeting of the members is held to discuss about various environmental issues and climatic issues we are facing these days and our role in reducing these effects.

>> Three day **Workshop on Carbon Accounting and Environment Audit Procedures** trained students to measure the carbon foot prints and they undertook the mission to measure carbon footprints in Vagamon.

>> The college has adopted the “**Swachhata hi Sewa Campaign**” under UGC guidelines introduced in September 2019 for the ban of plastic use in higher education institutions. As per these strict measures have taken by the institution for controlling the use of plastic, single-use plastic items such as plastic bottles, bags, spoons, straws and cups are banned completely, and awareness is created among staff and students through orientation and display boards in the premises.

>> The college has initiated **Fish Farming** practices as part of green policies. The cultivation of freshwater fishes can alleviate stress on natural fish population and threats of overexploitation. It spread a message to the student community that local needs for fishes can be successfully fulfilled locally. Fresh water fish farming is another green practice of the institution.

>> Several student organizations in the campus like Bhoomithra Sena , CLAP(– Climate Action for Future) Tourism Club, Birds Club and NSS function to streamline the green activities.

>> The institution has successfully framed the Social Entrepreneurship, Swachhta and Rural Engagement Cell (SES–REC).

>>The organic farming program survey under the Jaivam scheme

>> Environment Day Celebrations, plantation drives, Hugging the Ghats, , clean campus initiative; Ozone Day, Forestry Day, Food Day, Wetland Day and Water Day observations are the other green programmes that the college undertakes.

>> As a part of green initiative open classrooms are Implemented in the campus which promotes sustainability and environmental responsibility. This also allow ample natural light thereby reducing the dependence on artificial lighting and air conditioning, leading to energy conservation and lower carbon emissions.



EVIDENCE OF SUCCESS:

The institutional efforts to go green has inculcated the sustainable habits into the campus community and by extension the world as evidenced by the following measures:

- During the floods of 2021 and 2022 the student volunteers of Meenachil River Rain Monitoring uploaded the rain fall data and the readings of river scale that gave timely alerts to the people down stream.
- Received Haritha Office Certificate from Haritha Kerala Mission as part of green protocol activities to make waste-free government offices in Education Departments.
- Haritha Kerala Mission of the Government of Kerala honoured the college with Green Certificate.
- The Energy and Green audit of the college makes it clear that the college has contributed significantly towards environment and energy conservation. The institution conducts these audits once in every year with external audits in collaboration with OTTOTRACTIONS Ayurveda and Sitaram Ayurveda approved by Dept. of AYUSH, Govt. of India.
- The reporters of the illustrious NATURE magazine visited the campus and interviewed the student volunteers of MRR

- The NSS unit of St. George's College Aruvithura conducted the Ward Level Survey and Data Collection in association with the Erattupetta Municipality on 24,25 & 26 of August 2022. The programme, named 'Haritha Mithram Smart Garbage' started with an orientation class held on 24th August 2022 at 10 am in the Municipal Complex, Erattupetta by the officials of KELTRON and

Municipality. With the great effort and sincere work of each volunteer, more than 500 houses were covered as part of the survey. The authorities of Erattupetta Municipality conferred a certificate of appreciation to the NSS Unit of the college for the meritorious service.

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PROBLEMS ENCOUNTERED AND
RESOURCES REQUIRED:

A huge population base and varying education and awareness levels do not promote a secure hygienic environment and hence this is a major challenge. A clean or Swachh mind is generated from A Swachh environment. Teachers and students of the education system need to play the lead role in making the masses aware of the quintessential need for hygiene. All these challenges along with changing climate patterns, understanding environmental legislations and security becomes more apparent in today's environment care and concerns. Modern technological advancements and sophisticated tools can be used to address the global environment issues. Various means of leadership, employee and student-centric patterns can be developed to implement innovative policies and practices.



Meenachil River Rejuvenation Programme at Meenachil River Bank. Inauguration by Thalappulam Gramapanchayath President.



Placing Waterpots for birds in the college Campus by the Student Members of Birds Club



Placing Waterpots for birds in the college Campus by students



Students Watering bamboo saplings in the campus



Inauguration of the Jalachethana Project by Dr. Roxy Mathew Koll (IIMS Pune)



Pachathuruth – The Man made Forest in the Campus



Disrtibution of Rain Gauges to Student Volunteers of Meenachil River Rain Monito-
ring Network



Organic Farming of Tapioca in the Campus



Field Investigators of Nature Magazine interacting with MRRM student volunteers in
the campus



Planting of Medicinal Plants in the Herbal Garden in the campus by students



Students participating in Odonate Survey



Inauguration of Climate Action Programme – CLAP for Future



Students Participating in Nature Awareness Camp at Eravikulam National Park



Training on Preparation of Organic Manure in the campus



Saluting the River – Nadheevandhanam by the Students and Staff members



Harvesting of organic farming in the campus



Inaugurating the Platisation Drive by the famous environmentalist CR Neelakandan.



Plantation Drive by NCC Cadets



Vithukutta – Seed Bank and Saplings Collection



Vithukutta – Exchange of Seeds and Fruits



Orchard Plantation Drive Inauguration by Tree Herbalist Sri. K Binu



River Scale drawn and monitored by MRRM Student Volunteers



Visit to Vanasthali – The Man Made Forest near the college



Interaction with Sri. Ebi Poondikulam– an enviromntalist who maintains Vanasthali

LETS GO GREEN

