

UNNAT BHARAT ABHIYAN

QUARTERLY REPORT

RCI-IIT PALAKKAD



IIT PALAKKAD



उन्नत भारत अभियान
UNNAT BHARAT ABHIYAN



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1. IIT Palakkad

Ministry of Human Resource Development (MHRD) Government of India, has launched a national program called Unnat Bharat Abhiyan (UBA), with the vision to enable higher educational institutions to work with the people of rural India in identifying development challenges and evolving appropriate solutions for accelerating sustainable growth. Indian Institute of Technology Palakkad has agreed to participate in UBA as the Regional Coordinator for the districts Palakkad, Kannur, Kozhikode, Wayanad and Kasargod and also as a Participating Institute. IIT Palakkad being a responsible participant in UBA activities have selected six villages namely **Pudussery West, Pudussery Central, Pudussery East, Vadakarapathy, Elappully-I and Malampuzha-II.**

A UBA Cell is also constituted under the chairmanship of Director IIT Palakkad for the implementation of the program at IIT Palakkad.

The following is the **composition of the Institute level UBA Cell**

Chairman - Director Ex-officio

Institute Coordinator - Dr Sahely Bhadra, Assistant Professor

Members of UBA Cell:

- Prof. K Govindan Kutty, Dean (Students Affairs)
- Dr. Athira P., Assistant Professor & Regional Coordinator UBA
- Mr. S Samuel, Advisor (Student matters)
- Dr. Deepak RajendraPrasad, Assistant Professor and Associate Dean (Academics)
- Dr. Sarath Sasi, Assistant Professor
- Dr. Ganesh Natarajan, Associate Professor
- Dr. Arun Rahul S., Assistant Professor
- Dr. Uma Divakaran, Assistant Professor
- Dr. Praveena Gangadharan, Assistant Professor
- Dr. Dinesh Jagadeesan, Assistant Professor

- Mr. Nikhil R. R., UBA Project Coordinator (Convener)
- Mr. Sanil Sharahudeen, Junior Technical Superintendent
- Mr. Vinu D., Junior Technical Superintendent

INITIATIVES UNDER UNNAT BHARAT ABHIYAN

1. STUDENT SOLAR AMBASSADOR WORKSHOP

Participating School: Government Vocational Higher secondary school, Agali, Attapadi

Electronics lab with a capacity of 60 people was identified as the venue for conducting the workshop. Posters were printed and put up on the institute notice board. Banners with the event details were hung in front of the academic block of the institute. A manual was prepared with instructions in English and Malayalam showing the steps of lamp assembly. Feedback forms were prepared for students and teachers. Sorting of the lamp components was done well before the



event date. The trainers assembled one lamp and estimated the time required for the same. The charging with the solar panel was also tested. Along with the trainers 10 volunteers were also trained to aid the students with assembling the solar lamp. Notepads and pens were purchased for distribution during the event. Additional Multimeters, soldering iron, screwdrivers and glue was arranged to use during the assembly. A bus was arranged to transport the students to the institute on the workshop day. A day before the event, a group consisting of a faculty coordinator, two staff coordinators and two trainers visited Government VHSS Attapadi to brief the teachers and students about the event. Breakfast and Lunch were arranged for the students at the IIT hostel mess.

The training program for Agali school students started at 10 am on Gandhi Jayanthi. The program was conducted in the electrical lab at IIT Palakkad. The program started with inaugural address by Dr. Sunil Kumar P B, Director, IIT Palakkad. Fifty students from Government Vocational Higher Secondary School, Agali in Attapadi, Kerala, participated in the training program. A group of 10 trainers, including the faculty members, staff and research scholars from IIT Palakkad participated. A group of 5 students was allotted to each trainer. Instructions to the students required during the training were given through a PowerPoint presentation. A kit which consisted of a manual, lamp components, notepad and a pen was distributed to each of the students. The projectors in the lab aided in detailing the process of lamp assembly. Students were trained to do the proper gluing, soldering and assembling of the solar powered study lamp. In each stage of the training, trainers ensured the safety of the students and made sure that the students were completing the corresponding stage with complete understanding of the process and working. All the students successfully completed the solar lamp assembling. Finally, the working solar study lamp was properly packed in the envelope provided with the lamp assembly components.

At the end of training sessions, feedback from the students and trainers were collected. After the training, Student Counsellor of IIT Palakkad delivered a small inspirational talk which conveyed the importance and student responsibility of environmental protection and solar energy.



Figure 2: Participant students with the solar lamps they made



2. PLASTIC FREE VILLAGE CAMPAIGN

On the 150th birth anniversary of Mahatma Gandhi, IIT Palakkad organised plastic free village campaign in the UBA adopted village. The events for the day

inaugurated by Mr. Chetan Kumar Meena IAS, Assistant Collector of Palakkad in the presence of Prof. P. B. Sunil Kumar, Director IIT Palakkad, Mr. M. Krishnan, District Engineer Pollution Control Board and Mr. Y. Kalyanakrishnan, District Coordinator Haritha Keralam Mission.



A group of 100 students of IIT Palakkad, under the directions of Haritha Kerala Mission, undertook a plastic-free campaign in the ward no: 02 of Pudussery panchayat which included the permanent campus of IIT Palakkad. Students visited 400 households, collected their plastic waste, conducted a survey of the waste management practices used by the households, and distributed pamphlets on how to effectively segregate solid waste. The collected survey data will be used for planning the future activities of UBA activities. The collected plastic waste was handed over to the Material Collection Facility (MCF) of Pudussery Gram Panchayat.

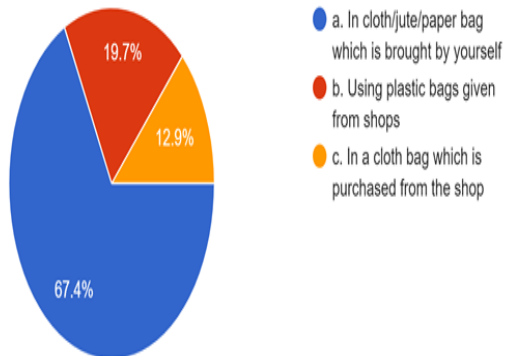


Summary of the Household waste management survey

Domestic Household Assessment Analysis

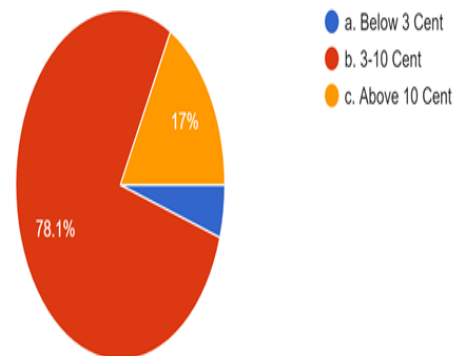
How do you bring household items from the shop/market?

411 responses



Area of the plot where the house is located

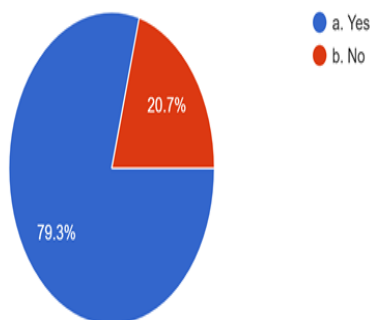
411 responses



Ward no: 02, Puduserry GP

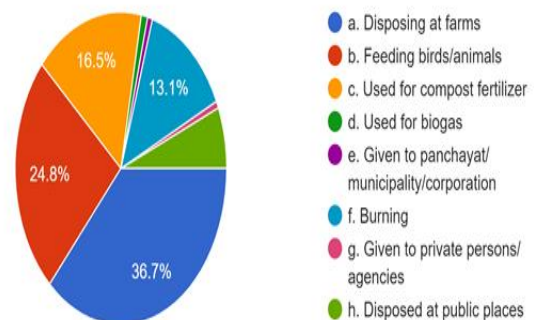
Do you segregate degradable materials like food waste and other non-degradable like plastic and paper separately?

411 responses



What do you do with the degradable waste including food waste?

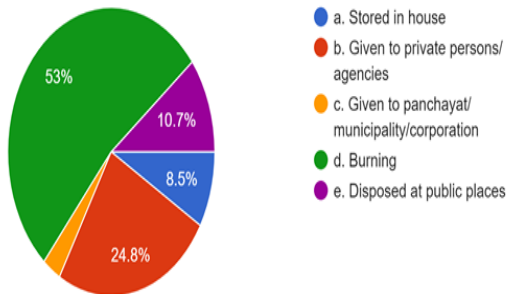
411 responses



No: of Household Covered: 411

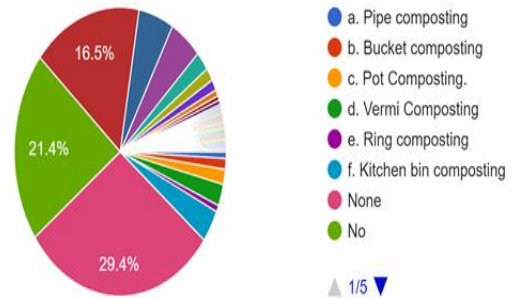
What do you do with the non-degradable waste (plastic/cans/bottles/electronic waste)?

411 responses



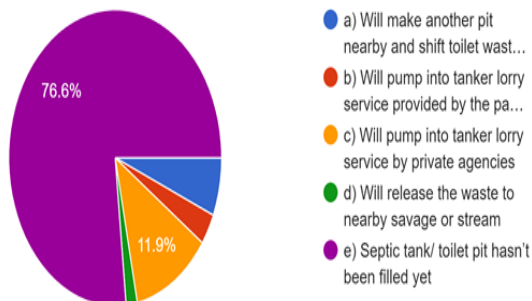
What type of composting system is there for household composting?

411 responses



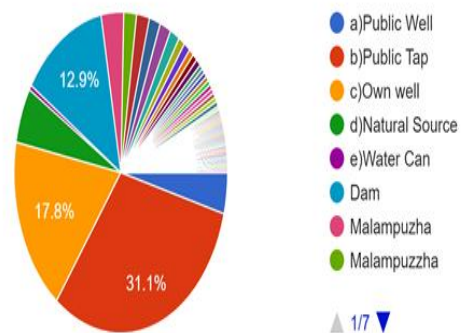
What remedial measures do you take when your septic tank/toilet pit gets filled?

411 responses



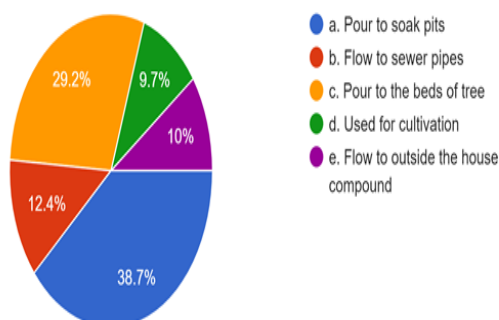
What is your source of drinking water ?

411 responses



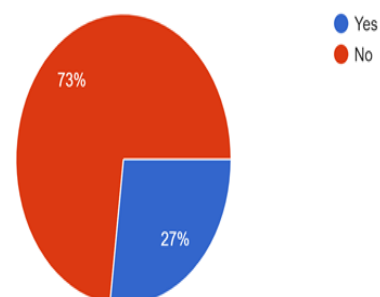
Wastewater from the kitchen and bathroom is used for?

411 responses



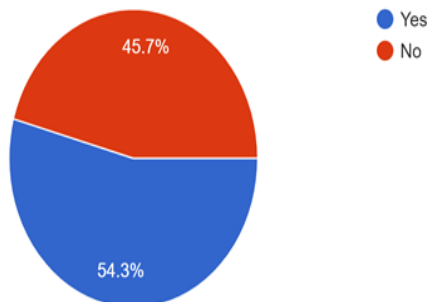
Is there any need to construct Soakpits as part of MGNREGAs to compost wastew...om bathrooms and kitchens?

411 responses



Are you interested in segregating and composting the degradable waste in the comp...roduced as part of MGNREGA?

411 responses



3. RURAL ENERGY SCHEME

Objective: To develop the infrastructure for meeting the agricultural energy needs of the village from the fuel generated from locally available oil bearing seeds.

The students of final year Mechanical Engineering department under the guidance of Prof. Pramod S. Mehta is working on the concept of *Fuel at the Doorstep* which generates diesel fuel from the oil bearing seeds available in the rural areas.

Fuel at the doorstep envisages supporting the energy security, employment generation and skill development of the people in the rural areas.

4. LOCAL ACTION PLAN ON CLIMATE CHANGE (LAPCC)

IIT Palakkad held an initial discussion for giving technical support to Kerala Institute of Local Administration (KILA) to develop and implement Local Action Plan on Climate Change by the local governments. The local government identifies the impacts on environment, biodiversity and human lives in the Panchayat caused by climate change and develop plans to solve them at the local level which ensures climate action addressed at root level.

5. INITIATIVE FOR TRAINING AND PROMOTION OF OPEN SOURCE SOFTWARE

Taking into account the feedback from the Local administrative authority of Palakkad, IIT Palakkad is planning to run some outreach program for local professionals and college students on training and promoting open source software. There is a similar program in IIT Bombay called *FOSSEE* which promotes open source software like Scilab, Python, eSim, R, OpenFOAM, Osdag, DWSIM, OpenModelica, etc. Prof. Janani Sree Muralidharan, Assistant Professor of ME Department of IIT Bombay, visited IIT Palakkad to kick start this initiative. During her visit, an initial level of discussion was held briefing the activities of FOSSEE and the possible ways of collaboration.

6. PUBLIC LECTURE SERIES

IIT Palakkad is starting a Public Lecture Series, under the auspices of the Unnat Bharat Abhiyan and in association with the District Public Library of Palakkad. The first lecture in this series will be by Prof. Amitabh Joshi of JNCASR, Bengaluru on the 24th of January 2020. Dr. M. Rajeevan, Secretary, Ministry of Earth Sciences, has agreed to give the next lecture in February 2020.

The lectures will be held at the M.D. Ramanathan Hall at the Chembai Memorial Music college, Palakkad.

7. CLEAN WATER CAMPAIGN

As part of the Gandhi Jayanti Celebrations, a Clean Water Campaign was conducted to the students from Government Vocational Higher Secondary School, Agali, Attappadi. The Clean Water Campaign demonstrated the significance of turbidity in drinking-water quality and its measurement using a digital turbidity meter. In addition, various cost-effective water purification methods were exhibited as:

- (i) Coagulation using aluminium sulphate (alum) and *Moringa oleifera* seeds powder for the removal of colloidal particles;
- (3) Filtration by a slow sand filter constructed by fine sand, coarse sand and activated carbon to remove dissolved solids;
- (4) Disinfection using chlorine tablets to kill pathogenic microorganisms.

NEED ASSESSMENT STUDY

1. EDUCATION

As part of UBA activities, a detailed need assessment study of the government schools of the adopted villages was conducted. The inferences are consolidated as follows:

i. Lower Primary School Kanjikode

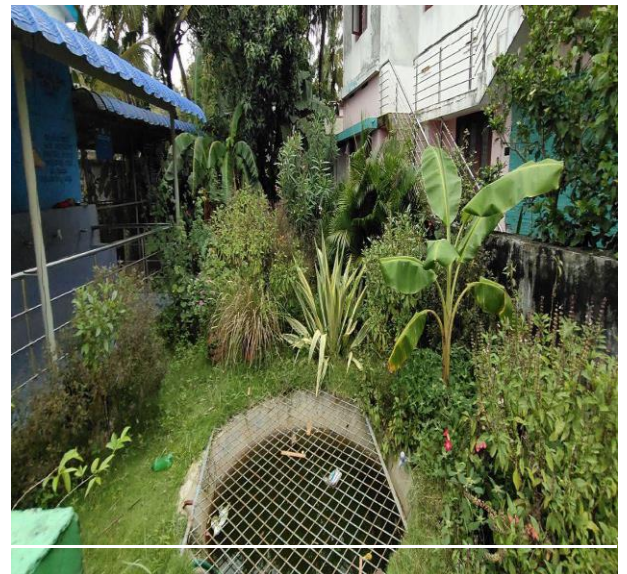
Kanjikode LP School is one of the biggest government schools in Palakkad district.

- Total no: of students (including Pre KG) – 584
- Classes – Pre KG, Standard 1-4
- Total no: of staff – 20
- No: of divisions – 20



Necessities observed from Need Analysis:

1. Waste Management System in kitchen
2. Biodiversity and Butterfly Park
3. Class Library
4. Mathematics and Science Teaching Assistance
5. Lab Equipment for Science
6. Skill Development Support
7. Support for Information and Communication Technology



ii. Govt. Vocational Higher Secondary School Kanjikode

- Total no: of students – 1500
- Classes – Standard 5-10, Standard 11 &12 (Science and Humanities)
- Vocational Class – 11th Standard and 12th Standard

Vocational HSS:

- Sector: Electronics

Field Technician – Computing and Peripherals (30 students each)
Qualification Pack: Ref.Id. ELE/Q4601

- Sector: Electrical

Distribution Lineman

- Total no: of Students in High School – 942

Necessities observed from Need Analysis:

1. Vegetable Garden
2. Biodiversity & Butterfly Parks
3. Guidance in areas of art and Crafts
4. Skill Development Support
5. Workshops for children in areas of Mathematics and Science
6. Career Guidance Support



iii. Govt. Tribal LP School Nadapathy

The school is located near to the Malabar Cements in the middle of the Tribal Settlement

- Total no: of students – 27
- Classes – Standard 1-4
- Irular Tribe Groups
- Main Language : Urali Irula

Necessities observed from Need Analysis

1. Skill Training for youths and School dropouts
2. Biodiversity and Butterfly Park
3. Class Library
4. Craft and Skill Training
5. Toys
6. Lab Equipment for LP Students
7. Waste and Water Management in Schools



iv. Govt. LP School Chullimada

- Located near to the Forest Region
- Campus of 3-4 Acre
- Total no: of students: 87
- Classes: Standard 1-4

Necessities observed from Need Analysis

1. Skill Training for youths and School dropouts
2. Biodiversity and Butterfly Park
3. Class Library
4. Craft and Skill Training
5. Toys
6. Lab Equipment for LP Students
7. Waste and Water Management in Schools



v. *Govt. LPS Attakulam*

- Total no: of students – 68
- Classes – Pre-primary (6 students), Standard 1-4
- Divisions -8 (Malayalam - 4, Tamil - 4)

Necessities observed from Need Analysis

1. Waste Management System in kitchen
2. Biodiversity and Butterfly Park
3. Class Library
4. Mathematics and Science Teaching Assistance
5. Lab Equipment for Science
6. Skill Development Support
7. Support for Information and Communication Technology



2. WATER

A water assessment study of the Pudussery Gram Panchayat is done with the help of WaterAid and Palakkad Social Service Society.

Some of the needs identified in the area of drinking water and conservation are

- Different models of water recharging like Water Absorption Trenches (WAT), gully pugs, storm water recharge to abandoned bore wells and dug wells etc.
- Online Chlorination in New Water Supply Schemes- Online Chlorination system applies the precise quantity of chlorine to the supply system with a mechanical device as per the water test warrants to nullify the microbiological contamination.
- LifeStraw Water Filters in Anganwadis- Is a highly efficient method of purification cum filtration.
- Training of Grass root technocrats.
- Grey Water Treatment Mechanism.
- Defluoridation at the Household/Community level.

2. Vimal Jyothi Engineering College

AISHE code: C-43798

Vimal Jyothi Engineering College has participated in the Participatory Institutions (PIs) for impactful intervention in the adopted villages through technology intervention & customization project under the UBA during 9th -10th December, 2019 at Centre for Rural Development and Technology, Indian Institute of Technology Delhi, Hauz Khas, New Delhi - 110016

Major Initiatives of Vimal Jyothi Engineering College

1. Completed project entitled ‘Coconut leaf broom making machine’ under Technology

Demonstration Proposals of Participating Institutions by Subject Expert Groups under

Unnat Bharat Abhiyan 2.0 Programme of Government of India.

2. Completed project entitled ‘Solar Coconut Dryer’ under Technology Demonstration

Proposals of Participating Institutions by Subject Expert Groups under Unnat Bharat

Abhiyan 2.0 Programme of Government of India.

3. Received grant of Rs. 1, 00,000 for project entitled ‘Design and development of SmartAmbulatory Monitoring for Alakkode Old Age Homes’ under Technology Demonstration Proposals of Participating Institutions by Subject Expert Groups under Unnat Bharat Abhiyan 2.0 Programme of Government of India.

4. **The ‘INNOVATION CHALLENGE-2K19’** was conducted by the Department of Electronics and Instrumentation on 30th November 2019 in association with UBA. Honorable manager of Vimal Jyothi Group of Institutions, Rev Fr. James Chellamkott, inaugurated the event in the presence of Head of the department, Staff and the students. Inauguration section is followed with career guidance for rural students. Higher secondary students from various regions participated in the Idea generation competition and the robotics workshop. Cash

A group of approximately 30 students and faculty members are posing for a group photo in an outdoor setting with tall grass and trees in the background. They are holding a large white banner with yellow borders. The banner features four logos at the top: a stylized 'V' logo, a logo with glasses and the text 'VISION BETTER', the Indian national emblem, and the Vimal Jyothi Engineering College logo. Below the logos, the text on the banner reads: 'VIMAL JYOTHI ENGINEERING COLLEGE', 'APPLIED ELECTRONICS & INSTRUMENTATION DEPARTMENT', and 'WELCOME TO YOU'. The students are mostly wearing blue t-shirts with red accents, while a few are in casual or traditional Indian attire. The sky is blue with scattered white clouds.



3. St. Joseph's College , Pilathara

AISHE Code: C43821

1. Community mobilization meetings
2. Household and Village Survey meeting
3. Household and Village Survey
4. Participatory Rural Appraisal (PRA) to prepare Village Development plan.

4. AHALIA COLLEGE OF ENGINEERING AND TECHNOLOGY

1. Introduction

Ahalia School of Engineering and Technology, has enrolled as a Participating Institution under Unnat Bharat Abhiyan which is a flagship program of Ministry of Human Resource Development, Government of India. Preeja V (Assistant Professor-Science & Humanities) is selected as the Principal Coordinator for the program.

2. Objectives of IIC:

- To build an understanding of the development agenda within institutes of Higher Education and an institutional capacity and training relevant to national needs, especially those of rural India.
- To re-emphasize the need for field work, stake-holder interactions and design for societal objectives as the basis of higher education.
- To stress on rigorous reporting and useful outputs as central to developing new professions.
- To provide rural India and regional agencies with access to the professional resources of the institutes of higher education, especially those that have acquired academic excellence in the field of science, engineering and technology, and management.
- To improve development outcomes as a consequence of this research. To develop new professions and new processes to sustain and absorb the outcomes of research.
- To foster a new dialogue within the larger community on science, society and the environment and to develop a sense of dignity and collective destiny.

3. List of Participating Villages:

1. Muthalamda-1
2. Muthalamada-2
3. Palassana
4. Peruvemba

5. Elapully-2

4. Activity Report-Quarter 1

Various activities organized by Ahalia School of Engineering and Technology are

4.1. Old Age Home Visit:

Students and some staff visited Karunya Old Home on 06-08-2019 and spent time with them. They provided fruits and refreshments for the inmates. Volunteers also entertained inmates by presenting various cultural programmes



4.2. Flood Relief Materials

Students of Ahalia School of Engineering and Technology collected flood relief materials worth Rs.25000 for the needy and handed over the same at the collection centre in NSS Engineering College, Palakkad



4.3. Blood Donation Awareness

A Flash Mob was performed by the Students of Ahalia School of Engineering and Technology on 01/10/2019 (National Voluntary Blood Donation Day), to create awareness among the public about the importance of blood donation. The motto was “GIVE BLOOD, SAVE LIFE”. The venues included Stadium Bus Stand, Town Bus Stand and Fort Maidan, Palakkad.



4.4. Gandhi Jayanti Observation

A plastic wastage cleaning activity was conducted at Nelliampathy, Palakkad on account of Gandhi Jayanthi observation. Around 50 Students participated in the program. Some of the forest officers also joined in the activity.



4.5 Plastic Pollution Control

Ahalia School of Engineering and Technology in association with Unnat Bharat Abhiyan, a Government of India initiative organized a one day workshop on Plastic Pollution Control on 19-12-2019. The workshop was attended by

representatives from various villages and municipalities from Palakkad and by students from various institutions.

The workshop was inaugurated by Er.Krishnan M.V, Environmental Engineer in Kerala State Pollution Control Board. He delivered an address on the need to reduce the use of plastic and different laws relating to the use of plastic.

Dr.Hema Nalini A.V., Professor and Head of Department-Civil Engineering of MEA Engineering College was the keynote speaker for the first session of the workshop. She discussed about the various harmful effects of the usage of plastics and the need to stress on the concept of Reduce, Reuse and Recycle.

Sri.Y.Kalyana Krishnan, District Coordinator of Haritha Kerala Mission delivered a lecture on ban of one time plastic from 01-01-2020. He stressed on the need to promote non-plastic commodities as substitutes for the plastics. Various collection methodologies of plastics were discussed during the session.

The workshop concluded with a Discussion Session chaired by Dr.P.R.Sreemahadevan Pillai, Principal of Ahalia School of Engineering and Technology.



4.6 Survey in adopted Villages

In association with NSS wing of Ahalia School of Engineering and Technology, a thorough survey has to be organized in the adopted villages to identify the major

challenges faced in the village and the measures to be adopted to counter those challenges. Initial survey has indicated that water scarcity is a major issue in the selected villages.