

IMPLEMENTATION AND IMPACT OF GREEN PROTOCOL IN KERALA

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ABSTRACT

Green protocol is essentially a set of measures which when implemented results in significant reduction of all types of wastes. The primary focus is on waste minimization through prevention of use of disposables and using reusable alternatives like glass/stainless/porcelain cutleries. However, waste that is still produced is treated in the most scientific and the most environment friendly manner. When Green Protocol is implemented in any institution or in any event, non- biodegradable waste generation becomes close to zero. Therefore, the question of waste management following the event becomes virtually non- existent. It was tried for the first time in National Games and now it has become a people's movement in Kerala with many functions including weddings. This paper examines the implementation and impact of green protocol by surveying various green protocol measures adopted in Kerala.

1.1 Introduction

Waste management is one of the severe problems in Kerala. To overcome mismanagement and improper dumping and burning of waste, government of Kerala announced a set of measures. These measures are popularly known as 'Green Protocol'. It was implemented as part of Swachha- Bharat and Suchitwa Mission. The primary focus of green protocol is waste minimization through prevention of use of disposables such as water bottles, paper, Styrofoam plates and plastic cups, disposable food packaging including aluminium and Styrofoam and plastic bags. Disposables are one time use and throw products which have increased drastically in the past few years and with it the magnitude of the problem of its disposal.

Green protocol is essentially a set of measures which when implemented results in significant reduction of waste with primary focus on prevention of use of disposables and using reusable alternatives like glass/stainless/porcelain cutleries. However, waste that is still produced is treated in the most scientific and the most environment friendly manner. Though many initiatives have been taken in the sector of waste management, Green Protocol is the first

of its kind initiative, which gave life to the first R “Reduce” of the solid waste. Other two principles are –reuse and recycle of solid waste.

When Green Protocol is implemented in any event, non-biodegradable waste generation becomes close to zero. Therefore, the question of waste management following the event becomes virtually non-existent. It was tried for the first time in National Games 2015 and now it has become a people’s movement in Kerala with many functions including weddings. Kerala government has decided to implement Green Protocol policy during religious festivals. The festivals in the state will go eco-friendly irrespective of religious lines. The State Suchitwa mission has approached religious leaders in this regard, and they received positive feedback. Thus the green protocol as of today has truly become a movement in Kerala. It has definitely taken the form of an enviro-cultural revolution that the mission strongly believes is going to change the way we live in this Country and on this planet. In this context, the present paper makes an attempt at examining the problem of green protocol in Kerala with the following objectives.

1.2 Objectives

1. To analyse green protocol initiatives in Kerala and
2. To evaluate the implementation and impact of green protocol in the University of Kerala

1.3 Methodology

Secondary data are used for the study. Secondary data are collected from various published documents of Govt. of Kerala such as Suchithwa Mission report, Haritha Kerala report, IQAC report of University of Kerala, Green Charter for University of Kerala and newspaper reports. Kariavattom campus of the University of Kerala is taken as a case for examining the problem..

1.4 How to follow Green Protocol?

Green protocol can be followed by the following steps:

- Avoid the use of all types of disposables (including plastic, paper) in daily life
- Always use cups and containers that can be washed and reused instead of those made of plastic or paper
- Avoid banned plastic materials; follow government rules in this regard
- Segregate bio and non-bio degradable; compost bio degradable at source using simple and appropriate composting devices

- Keep the non-bio degradable clean and dry and store separately based the type; hand it over to local body systems or scrap dealer for recycling
- Avoid 'use and throw' carry bags. Always use bags made of eco-friendly materials
- Always use cloth banners instead of flex
- Use bamboo baskets or ones made of eco-friendly materials instead of plastic waste baskets
- Always use eco-friendly materials like leaves flowers etc. for decoration and while making bouquets for felicitating guests

1.5 Implementing Green Protocol: The Kerala Experience

For the first time in the history of our nation, green protocol was implemented in a major event- the National Games 2015. All the utilities for National Games were planned in such a manner that maximum importance was given for prevention of waste generation. Many of the items used are still being reused and all that cannot be reused are sent for recycling. For the smooth implementation of green protocol Suchitwa mission introduced Haritha Karma Sena (Green Army). The number of green army groups and the details of their members are given in Table 1. There are 980 voluntary groups are registered as Green Army. Promotion of green protocol through awareness campaign, act as volunteers for successful implementation of green protocol and waste collection is the function of green army. The northern districts, Palakkad and Malappuram have the largest number of groups with the largest number of members.

Table :01
Number of Haritha Karma Sena (HKS) and the Details of Their Members

Districts	No.of HKS Groups			Number of members in HKS*		
	Grama panchayath	Municipality /corporation	Total	Grama panchayath	Municipality /corporation	Total
1 Thiruvananthapuram	68	4	72	1844	134	1978
2 Kollam	68	5	73	2545	332	2877
3 Pathanamthitta	53	4	57	1418	179	1597
4 Alappuzha	72	5	77	2027	152	2179
5 Kottayam	71	4	75	1700	148	1848
6 Idukki	50	1	51	1501	68	1569
7 Ernakulam	74	13	87	1390	367	1757
8 Thrissur	66	8	74	1693	372	2065
9 Palakkad	91	30	121	2520	342	2862

10	Malappuram	83	5	88	3571	404	3975
11	, Kozhikode	72	11	83	2672	406	3078
12	Wayanadu,	20	2	22	712	128	840
13	Kannur	71	10	81	1081	397	1478
14	Kasaragod	17	2	19	576	75	651
Total		876	104	980	24250	3504	28754

Source : <http://sanitation.kerala.gov.in> Compiled by the author.

HKS* Haritha Karma Sena (as on 30/06/2018)

Secondary data reveal that there are 249 Material Collection Facilities (MCF) and 83 Resource Recovery Facilities (RRF) in Kerala. Material Collection Facility (MCF) centers have been established under local self-government institutions all over the state to store the inorganic waste collected by the Haritha Karma Sena. Inorganic wastes that are separated in the M.C.F are recycled and later sent for further management in the Resource Recovery Facility (RRF) centers. 101 plastic shredding units are constructed in the state. Construction of 113 plastic shredding units is progressing. Many local self-government institutions have given applications for building 198 units like these. 40 plastic shredding machines are working in local self-government institutions.

Ministry of Drinking Water and Sanitation, having appreciated this novel initiative of giving a holistic view of linking consumerism, sanitation, climate change and environment protection and using none other than the election process to spread this consciousness, has recommended Green Protocol to the Election Commission of India. Further a proposal is in the process of being submitted to the Ministry of Railways, where the same concept will be implemented on a pilot basis in some of the Railway stations. The mission is very confident that this is one of the many initiatives that has all the potential to change the face of waste management scenario and possibly the planet, our only home.

1.5.1 Period/ Duration of the Initiative

Green Protocol initiatives of Suchitwa Mission began in National Games from November 2014. It is now being adopted successfully in many events and institutions including the Legislative Assembly Complex. It has and still is continuing to become a people's movement towards an enviro-cultural revolution.

1.5.2 Purpose and Priority

At a time when the entire state of Kerala was struggling to manage its solid waste and with the processing facility of Trivandrum city shut down for the past five years, the National Games Organising Committee (NGOC) was quite apprehensive on how to manage the huge quantum of waste that usually would be generated in any such mega sports event. They were expecting around 120 tonnes of waste that would be generated. On the other hand, the mission has been looking out for effective platforms to spread the messages of responsible waste management. It is in this context that Suchitwa Mission proposed to the NGOC to reduce the huge quantum of waste, thereby there is a win win situation for both NGOC and Suchitwa Mission. NGOC immediately accepted the idea and right there, the “Green Protocol” took birth.

1.5.3 Green Protocol in National Games

National Games was an event that was spread across 30 venues over 600 kilometres spanning across 7 revenue districts, hosting more than 12000 delegates, 3000 officials, around 20000 volunteers and police personals and a lakh spectators per day, over a period of 15 days. NGOC had a plan to purchase two million water bottles. The following words of Sri.Jacob Punnoose IPS (Retd) CEO of National Games in one of the National Games bulletin are self-explanatory. “This works out to providing water for a total of 6 lakh man days. Disposable water bottles, especially when supplied free, would never be used fully. Many throw them away or leave them behind after using them once or twice. And sports persons tend to drink a lot more water than others. So we have to plan for 3-4 bottles per day per person. That would be over two million bottles to be supplied free! Then another million would be consumed by the public and the spectators in 15 days in the galleries and stands at their own cost! This meant that we would have to spend Rs.1.5 to 2 Crores on water alone, in addition to what the public would be spending on the bottles purchased by them. For the most part, seeing no other alternative we had reconciled to the huge expenditure. But then we considered the huge threat to the environment that three million bottles would cause. These bottles measured from one end to end would have measured 750KM in length and these would have covered an area of about 180 acres of land if carelessly thrown around. In terms of land area wastage and the cost of land, the environmental damage would have been a few hundred crores. Therefore we decided, that - come what we may and even at the risk of failure – we must attempt to distribute water without disposable bottles” .

1.6 Implementation Process

The stories and activities of the entire games are as follows:

➤ The Green welcome

As and when the delegates to the National Games were arriving they were given a Green Welcome. They were welcomed with water served in Steel Tumblers and volunteers cordially invited them to a Green Games and requested them to comply with Green Protocol all through the games.



➤ The Green cordon

A green zone was created. No plastic items (including packages, bottles, etc.) were allowed beyond that point without a sticker costing Rs.10 stuck on the item as deposit money. A group of patient and friendly volunteers would inspect each and every bag would stick the sticker and collect Rs.10 for each such sticker. Money was returned only upon the return of the stickered item out of the venue. Any item to be discarded could be discarded in the recyclable bin placed close to the check points. This prevented littering to almost 100 percent.

➤ The green water supply chain

Water was sold in steel glasses at Rs.2 per glass and Rs.5 per bottle that were given for refill. Water was sourced from reusable bubble tops which were filled with purified water from Reverse Osmosis systems. Volunteers kept moving around with jugs and glasses. Another set of volunteers kept washing the glasses with disinfectant solutions and replenishing the glasses.

➤ The Green Catering

A complete ban on disposables usage was observed in the catering area. Only reusable cutleries were allowed to be used. Beverages were also served only in reusable cutleries.

➤ Green messages

Spectators were engaged in various types of cultural activities through which IEC messages were constantly given out. Banners, videos of “Dare to Clean” program of Suchitwa Mission, constant announcements saying that they are in a Zero Waste venue, they need to

segregate, etc. and other cultural programs were constantly bombarding people with green messages. Such constant IEC was one of the main reasons for the eventual change in the mindset of the people coming to the venues.

➤ **Nature's Green (re)cycle**

Whatever waste was generated was segregated waste. Hence the food waste was composted (which is a natural part of the carbon cycle) and the recyclable waste was sent for recycling. Bio bin type of composting method was adopted to compost the food waste from Games Village and also to put up a Material Recovery Facility (MRF) in order to recover recyclable material from the waste generated and they were sent for recycling.

Apart from the above the other areas where we could bring in some environment friendly measures through other committees are the following:

1. All the signages, dustbins and gazebos were made out of bamboo through Bamboo Corporation of Kerala.
2. All green messages were given using environment friendly materials like cloth banners (made of 100% cotton)
3. To the extent possible we replaced all PVC flex material with polypropylene materials.

“Ammu” and “” Clean Up Venues

Observing Green Protocol needs public participation, cooperation and acceptance. This was quite challenging. The message that this games will be a ‘Clean and Green Games’ has to go loud and clear well before the start of the games. So it is decided to carry out a host of awareness generation activities. For instance when the mascot of Suchitwa Mission Kathu “the crow” joined hands with the mascot of National Games Ammu, the hornbill that was another historic event. This was started as an initiative by which various community groups like Residents associations, Students Police, Chamber of commerce, sports councils, etc. were requested to take charge of waste dump spots in and around the venues. The successful implementation of Green Protocol in national games leads to the replication of the same to various other events and functions across the state.

1.6.1 Green Protocol in Attukal Pongala

One of the major events that followed Green Protocol was Attukal pongala where more than 25 lakh people come over to state capital for participating in the ritual in Attukal temple. Attukal Pongala Mahotsavam is a 10 days festival which falls on February - March every year. The festival begins on the *Karthika* star with the traditional ceremonies for the idol of Devi embellished with Bangles. The festival will conclude with the *Kuruthitharpanam* at 10th day

Makam star night. Millions of women gather every year in the month of Kumbham around this temple and prepare Pongala (rice cooked with jaggery, ghee, coconut as well as other ingredients) in the open in small pots to please the Goddess Kannaki. Pongala (literally means to boil over) is a ritualistic offering of a sweet dish, consisting of rice porridge, sweet brown molasses, coconut gratings, nuts and raisins. It is done as an offering to the presiding deity of the temple - the Goddess - popularly known as Attukal Amma. Goddess is believed to fulfil their wishes and provide prosperity.

Suchitwa Mission first intervened in the program during the year 2016 by involving in the discussions with the Organizing committee of the temple trust and the Trivandrum municipal corporation. Suchitwa Mission played a significant role in bringing in all stakeholders to a common platform and to create a consensus in this regard. The commissioner for food safety has offered full support in ensuring green protocol in the distribution of food and beverages. They have issued strict orders to voluntary organizations and individuals to follow green protocol by distributing food and beverages to the devotees in reusable cutleries.

The civic body directed voluntary organizations and individuals who distribute food and water to devotees to refrain from using disposable glasses and paper. Instead steel glasses, tumblers and plates are collected by the district administration and distributed to the devotees. The Trivandrum Corporation and Suchitwa Mission have trained volunteers from schools and colleges to monitor the activities. The devotees who took part in Pongala were instructed to bring only steel glasses and plates, in order to limit the use of disposable items at the venue. Directions were also given to prevent the installation of flex boards in connection with the festival.

Mayor V K Prashanth says "This is a humble attempt at managing waste in a scientific manner after the pongala. If the devotees could bring a steel plate and glass along with their pongala kits, the mission could be a huge success." Widespread campaigns were initiated by Trivandrum Corporation and Suchitwa Mission through various media. Besides giving appeal to the public through regional dailies, FM channels, railway public announcement systems and social media are utilized to sensitize the public on green protocol and to prevent them from bringing –in plastics and other disposable items to the venue.

1.6.2 Green Protocol in State School Youth Festival

The state school youth festivals which were held during the year 2016 & 2017 observed green protocol. The success of green protocol in National Games 2015 gave confidence to DPI and the organizers to implement the same in school youth festival. The DPI has directed Suchitwa Mission to be a part of the organizing committee and provide necessary orientation

and trainings to all concerned people. As a result Suchitwa Mission deployed its trained volunteer team for implementing the protocol in the festival.

The festival areas were declared as green zone and no plastic items (including packages, bottles, etc.) were allowed beyond that point without a sticker costing Rs.10 stuck on the item as deposit money (the system which was experimented and found successful in the national games). The friendly volunteers of Suchitwa Mission would inspect each and every bag and would stick the sticker and collect Rs.10 for each such sticker. Money was returned only upon the return of the stickered item out of the venue. Any item to be discarded could be discarded in the bins placed close to the check points which inturn prevented littering.

- **Eating out of Leaves**

The organizers served food on traditional plantain leaves. Around 1 lakh leaves were carried by school students from across the district to the makeshift canteens attached to the venues. Even the serving spoons were made of dried palm leaves. About 5000 steel glasses and utensils were arranged in the kitchen as plastic got a strict no. Apart from the steel utensils arranged in the canteen 5000 steel glasses were arranged for participants and audience to drink water. The big jars and containers to store drinking water at various venues were also made of steel.

- **Carried away cloth bags and jute files for official purpose**

The participants, judges and officials were presented with cloth bags. Organizers directly procured about 15,000 bags apart from the loads presented by the sponsors. All official files used as part of the festival were made of jute.

- **Writings on the wall**

All committees formed to organize the art festival used nothing but ink-pens for all paper work related to the event. It was a throwback to the previous generation's ways when organizers realized that the refill plastic-pen posed serious threat to the ecology. As many as 1000 ink-pens and ink-pots were bought by the green protocol committee.

- **Green Army**

The festival venues and the organizers offered a pleasant surprise with its uncompromising attitude against plastic. The green army volunteers deserve all the credit for this. They marched around the festival venues to ensure that the directions of the green protocol committee was adhered to. As many as 200 students from among NCC, NSS, SPC etc volunteered to the noble effort and they were steered by 80 team leaders.

- **Waste disposal**

The festival venues were noted for the ubiquitous waste bins made of coconut fronds. The pretty baskets were chosen after a friendly weaving contest organized by kudumbasree workers. Messages of cleanliness were written on cloths, plantain leaves and mats. Artists from many places joined hands to prepare the message and propagate them.

The low cost eco-friendly message boards prepared for School Youth Festival. Welcome Arch and Message boards made out of eco-friendly materials displayed at the entrance and inside the venue



1.6.3 Green- Protocol in Weddings

Wedding ceremonies in Kerala are all set to become “green”, with Suchitwa Mission coming out with a green protocol to make auspicious occasions more nature-friendly. With the implementation of the protocol, plastic and other non-biodegradable articles including disposable glasses and plates and thermocol decorations will be kept at bay from marriage functions. Instead of this, people are persuaded to use tumblers, plates and other utensils made of glass and environment-friendly metals.

Suchitwa Mission has already launched the initiative in Kannur, Ernakulam, Kollam and Alappuzha on a pilot basis. “The core objective of the initiative is to reduce the use of disposable items in daily life and to pass the message of eco-friendly life style to the public. Disposable articles including glasses and plates are used in large numbers during functions, especially marriage ceremonies in the state.

1.6.4 Green Protocol during Ramzan

The holiest month of the Islamic calendar, Ramzan, is also the season of the much-awaited Iftar Parties. Our state is breaking the fast with a difference this year, with 'eco-friendly' Iftar being widely advocated by the government and religious leaders alike. Thus, not only are the believers observing the holy month in its truest sense, but ensuring that Mother Nature is hurt the least in the process as well. The minister for LSGD, Mr. K T Jaleel convened a meeting at state capital as per the request of Suchitwa Mission to make an appeal to the leaders of Muslim community

1.6.5 National School Athletic meet

The 60th national school athletic championship which was held in February 2016 at Kozhikode observed Green Protocol. The Directorate of Public Instruction requested Suchitwa Mission to provide technical support to make the event green and eco-friendly. Suchitwa Mission extended their support by mobilizing a trained volunteers' team and deployed at the venue for the conduct of an eco-friendly event.

Provisions were made to provide drinking water inside the stadium. The meet followed principles of green protocol with plastic and other disposables are banned inside the stadium. A small fee was levied if other plastic materials like Students placing stickers at a charge of Rs.10 to each plastic items carrying to the meet-venue disposable water bottles or carry bags are taken inside the stadium. The collected fee reimbursed when the plastic materials are brought out of the stadium. Also the volunteers were vigilant on keeping the venue neat and clean. Even a single incident of littering could not be witnessed inside the venue. The segregated dry waste from the venue is being packed and handed over to the scrap dealer.

1.6.6 Green Protocol in Reserve Bank of India

Thiruvananthapuram regional office is in the forefront to take forward the idea of Green Protocol. They have taken proactive measures for protecting the environment in all its operations wherever feasible. Use of plastic bottles, flex prints were banned in the bank. Technology driven measures for massive reduction of paper usage across its offices is put in place. Reusable visitor ID cards were introduced to do away with the issue of paper passes. Stainless steel waste bins have been introduced everywhere in place of plastic bins. A high capacity bio-gas plant is installed in the main office premises and organic waste converters are installed in all residential colonies of Reserve Bank to treat the biodegradable waste.

1.6.7 Raj Bhavan Events

All the events in Raj Bhavan have now been following green protocol. Honourable Governor has now been requesting Suchitwa Mission's support at Raj Bhavan for implementing green protocol in all gatherings and functions. All the "At home" functions at Raj Bhavan has been following green Protocol. Swearing-in ceremony of honourable ministers, M. M Mony and Thomas Chandy held at Raj Bhavan also followed green Protocol.

Green Protocol now being followed in wedding ceremonies, religious functions, festivals etc., indicate that the common man has owned this and is slowly becoming a mass movement in the state. With the effective implementation of green protocol, the amount of discards generating could be reduced in the long run. We can reuse, recycle and reduce plastic.

But, even if we reuse such non-biodegradable articles, there will not be much decline in its presence. So, reducing its use is the more effective way to achieve our plastic-free society goal. The Mission has joined hands with district administration, panchayat authorities and socio-cultural and religious outfit for the successful implementation of green protocol in marriages. The cooperation of the owners of marriage halls and convention centres was very crucial in implementing the same.

1.6.8 Green Protocol in Educational Institutions

Haritha Keralam Mission, which aims to promote environmental conservation, made its presence felt in educational institutions in the district with a green protocol, leading to the step-by-step implementation of the ban on the use of plastics. Aided and government schools have brought under the green protocol. This will be monitored by a committee comprising local panchayat authorities and the District Suchitwa Mission. Officials say the green protocol has been found very successful in various phases of its trial run across the State. It was in place during the Kerala State Youth Festival and district-level youth festivals.

Along with imposing a ban on bringing plastic products, schools will have a common facility to stock the plastic items and send it for timely recycling. The coming-up of Material Recovery Facilities in various local bodies to support the implementation of green protocol will enable recovery of resources. The first Material Recovery Facility will come up in the limit of Kunnummal Grama Panchayat of Calicut District. Segregated plastic items will be processed here and handed over to the large-scale plastic industries. Plastic trashes segregated from various households too will be accepted at this unit which is set up in a 2,000-sq.ft building.

To begin with, students have already been requested to avoid the use of plastic water bottles, lunch boxes and ball pens. The common Instructions in the circular issued by DPI are,

- ❖ Every schools should have a composting facility to treat bio-degradable wastes .
- ❖ Segregation of waste is the prime thing in waste management which a school should be followed.
- ❖ All schools should have a forward linkage to clear all segregated dry waste periodically from their Material Recovery Facility.
- ❖ Avoid use of plastic tumblers and containers for handling food and water.

- ❖ Strictly avoid use of all kinds of disposable items in school functions.
- ❖ Avoid use of disposable pens; instead promote use of refilling pens.

Avoid use of plastic flex boards in functions arranging by schools.

1.6.9 Implementation and Impact of Green Protocol in University of Kerala

Green Charter of the University

The Green Charter of University of Kerala envisages priorities aimed at, within constraints, the finest accord with nature. Through education, research and extension services, the University shall promote the principles and practices for sustainable development, especially the 6R's (Reduce, Reuse, Recycle, Refuse, Rethink and Respect)

In each and every aspect -academic, research, extension or administrative – the University community revolved on the Green Axis. Use of plastic and other polluting substances are discouraged and that of Green products are highly encouraged in all academic and non-academic activities. A culture of segregation and recycle would be encouraged. E-governance drive initiated to reduce the use of paper. At the same time, awareness would be created about carbon emission associated with emails, search engines and social networking facilities. Future Plans towards Green Protocol/ Green Charter contains the following:

- A paper recycling unit and facility for producing value added products shall be installed for making use of the waste papers including expired answer scripts with the help of *Kudumbashree*
- University shall make all efforts to popularize ethnic foods and beverages and discourage the junk ones. An outlet selling ethnic drinks including sarbath, buttermilk, fresh juice, lime juice etc would be opened in the campus in association with *Kudumbashree*.
- To combat the menace of bottled water, water purifiers would be placed in all buildings or floors based on population density and accessibility.
- Monoculture of Acacia in Kariavattom Campus shall be gradually replaced with a variety of trees aimed at preserving and enhancing the biodiversity of the Campus.
- Uniform dust bins with Green Messages shall be placed in every nook and corner with CSR support.
- All new buildings shall be constructed as Green buildings, which minimize artificial lighting and air-conditioning.

Green Campus

The UGC vide letter dated 10-03-2016 has invited proposals to develop Green campuses under the 'Development of Solar Cities' Programme wherein about 100 small townships/campuses (new and the existing one), duly notified/permitted by the concerned Authorities being developed by the promoters/builders, SEZs/industrial towns, institutional campus etc. under the initiative of the Ministry of New and Renewable Energy(MNRE), Government of India are aiming at 10% reduction in the projected demand of conventional energy at the end of 5 years .

While developing the green campus, following guidelines may be taken into consideration for development of Existing Campus as Green Campus.

1. The energy audit and water audit of the entire campus should be carried out through registered certified professionals and the base line for the energy and water consumption should be defined.
2. A Master Plan should be prepared in the format prescribed by the Ministry within a period of one year from the date of sanctioning by the Ministry. The master plan prepared would provide total and section wise projections for energy demand and supply for the next 10 years. In the first instance, the format for submission of proposals for Small Townships/ Campuses for preparation of a Master plan /DPR including the action plan for renewable energy installations, green campus development, awareness generation and trainings has to be forwarded to UGC. Only on approval of the proposal, an amount of Rs.5 lakhs will be provided for preparation of Master Plan and DPR (Detailed Project Report) in which the action plan for utilization of funds has to be detailed.
3. The existing campuses should be encouraged to have suitable retro fittings of renewable energy and energy efficiency equipment /measures to the extent possible to make them green campuses.

The University has already conducted the Environmental/Green Audit in the Kariavattom campus. The audit Air Quality was done by the Kerala State Pollution Control Board and the audit Water Quality measurement by the Department of Environmental Sciences, University of Kerala. Emails were sent to MNRE as to whether it is necessary that only the firms empanelled by them are to submit the DPR (Detailed Project Report). Finding no response, they were contacted over the phone and have conveyed that any State Level Agency can do the work of DPR. The Director, IQAC has suggested that the conduct of the Energy Audit of the University is to be done by approved agencies like ANERT (Agency for Non-

Conventional Energy and Rural Technology), CDIT, Consultancy Wing and Energy Management Centre on a consultancy basis. He has further remarked that the BSNL Consultancy Wing may be entrusted with the work of conducting the Energy Audit, Preparation of Master -plan and DPR and the necessary inputs for filling up the Activity.

Plan and Budget of the proposal form.

It may be noted that ANERT (Agency for Non-Conventional Energy and Rural Technology) has already successfully completed the 'Supply, Installation and Commissioning of a 100KW Solar Photo Voltaic Power Plant' at the roof top of the Golden Jubilee building, Kariavattom Campus and the same was inaugurated on 04-08-2015. This plant is generating 400 units of power in a day and is saving the University Rs.1.5 lakh per month in electricity bills. The University adopts a policy of tapping sources of Renewable Energy for our energy needs. It has already made a beginning and the Solar Plant already installed is saving the University many lakhs of rupees by way of electricity bills. So Energy Audit is imperative for this as well as for NAAC whereby the exact plans for tapping renewable energy sources can be drawn up. University of Kerala still now on the way of implementing green protocol. To reduce use of plastic bottles inside the campus departments should provide drinking water facilities. Compost facilities should be attached with cafeteria.

1.7 Conclusion and suggestions

Green protocol as of today has truly become a movement in Kerala. It has definitely taken the form of an enviro-cultural revolution that the mission strongly believes is going to change the way we live in this Country and on this planet. Ministry of Drinking Water and Sanitation, having appreciated this novel initiative of giving a holistic view of linking consumerism, sanitation, climate change and environment protection and using none other than the election process to spread this consciousness, has recommended Green Protocol to the Election Commission of India, for observing green protocol in the upcoming elections. A proposal is being submitted to the Ministry of Railways, to implement green protocol on a pilot basis in some of the Railway stations. The mission is very confident that this is one of the many initiatives, which have all the potential to change the face of waste management scenario and possibly the planet, our only home. To sum up, the significance of Green Protocol in waste reduction occupies the top position in the waste management hierarchy. More importantly, implementing the Green Protocol can save money as well as resources. It has emerged as one of the most efficient and sustainable models in waste management.

References

1. <http://sanitation.kerala.gov.in/>
2. <http://sanitation.kerala.gov.in/wp-content/uploads/2017/10/Green-Protocol-initiative.pdf>
3. <https://www.thehindu.com/news/national/kerala/green-protocol-made-mandatory-from-june/article23544280.ece>
4. <http://sanitation.kerala.gov.in/wp-content/uploads/2017/10/Green-Protocol-initiative.pdf>
5. <https://www.thehindu.com/news/national/kerala/green-protocol-in-schools-from-june/article18662137.ece>
6. http://dhsekerala.gov.in/downloads/circulars/0512160207_scan0112.pdf
7. <https://kerala.gov.in/documents/10180/607f83dd-8e52-4262-ba0f-4573b3e90043>

