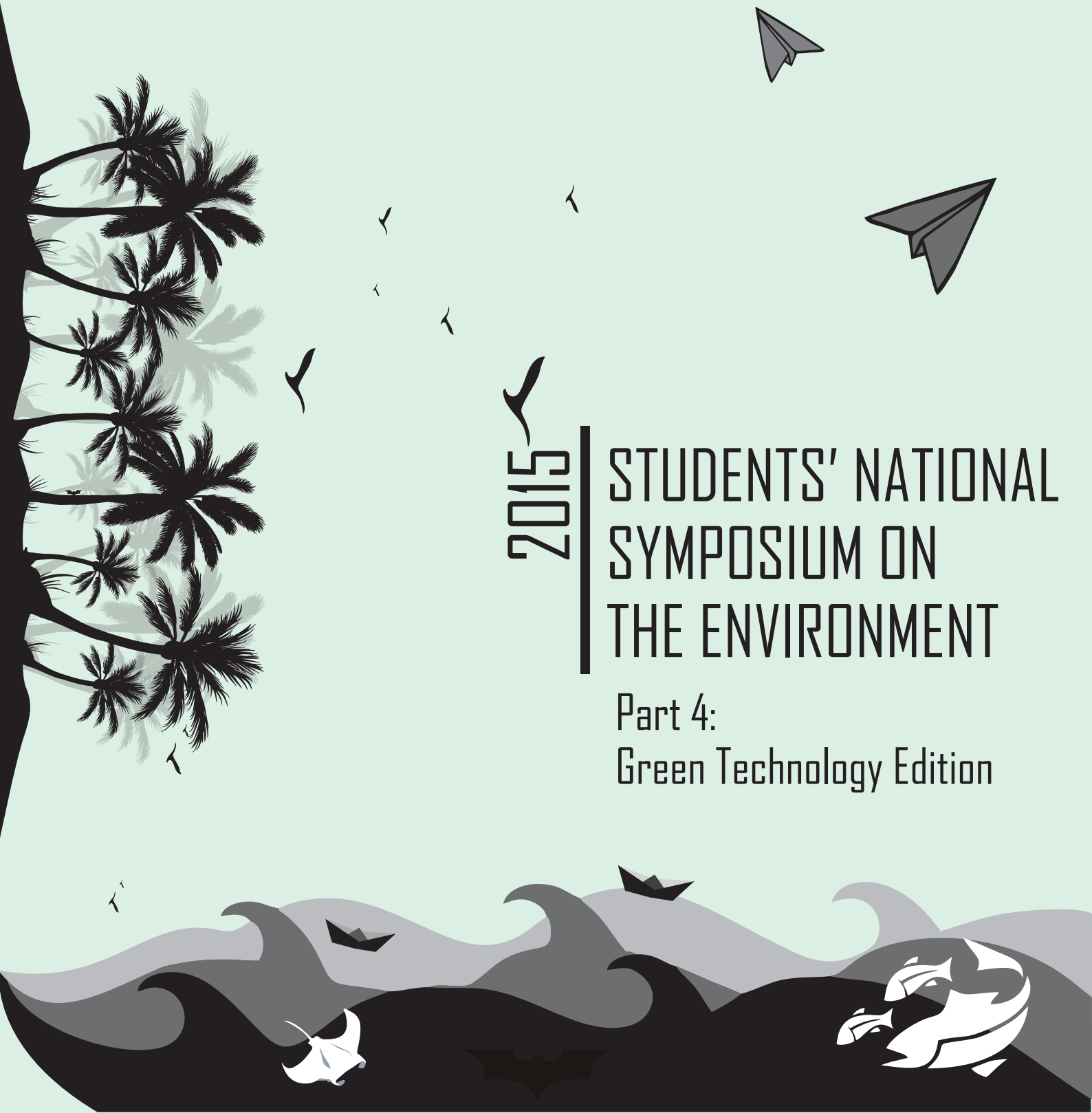


PEMPHIS

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Environmental Newsletter
Ministry of Environment and Energy



2015

STUDENTS' NATIONAL SYMPOSIUM ON THE ENVIRONMENT

Part 4:
Green Technology Edition



Minister's Note

The fourth paper of the first Students' National Environment Symposium, Green Technology, is a unique topic and is of particular importance to our nation. It is evident that Environmental Technology is still a bit of a foreign concept for most of the people, but it should be given more attention since conserving the environment through technological advances is beneficial, both in terms of protecting the environment and sustainable development through financially feasible measures. A vulnerable and dependent economy like ours will benefit significantly from adopting various green technologies in becoming more economically independent and sustainable. The ideas of students from across the country give us an insight of how this could be achieved, and we should waste no time in materialising these ideas.

Thoriq Ibrahim

Editor's Note

Green/Environment technology technologies intended to mitigate and/or reverse the effects of human activity have become an integral part of sustainable development and government policies across the world. The popularity of green technologies have increased not only due to its environmental benefits but with the monetary benefits as well. Green technologies can be incorporated in the fields of power generation, waste management, agriculture, etc. in order to attain a sustainable economy in a country where the majority of goods and services relies on foreign imports.

This Edition marks the end of the 4 part of series of the first SNES held last year. It is our hope that this edition covers the valuable information provided by the students at its best.

Feedbacks, comments, articles, photos, etc. are welcome at

environment@environment.gov.mv

Hydroponics On Wheel

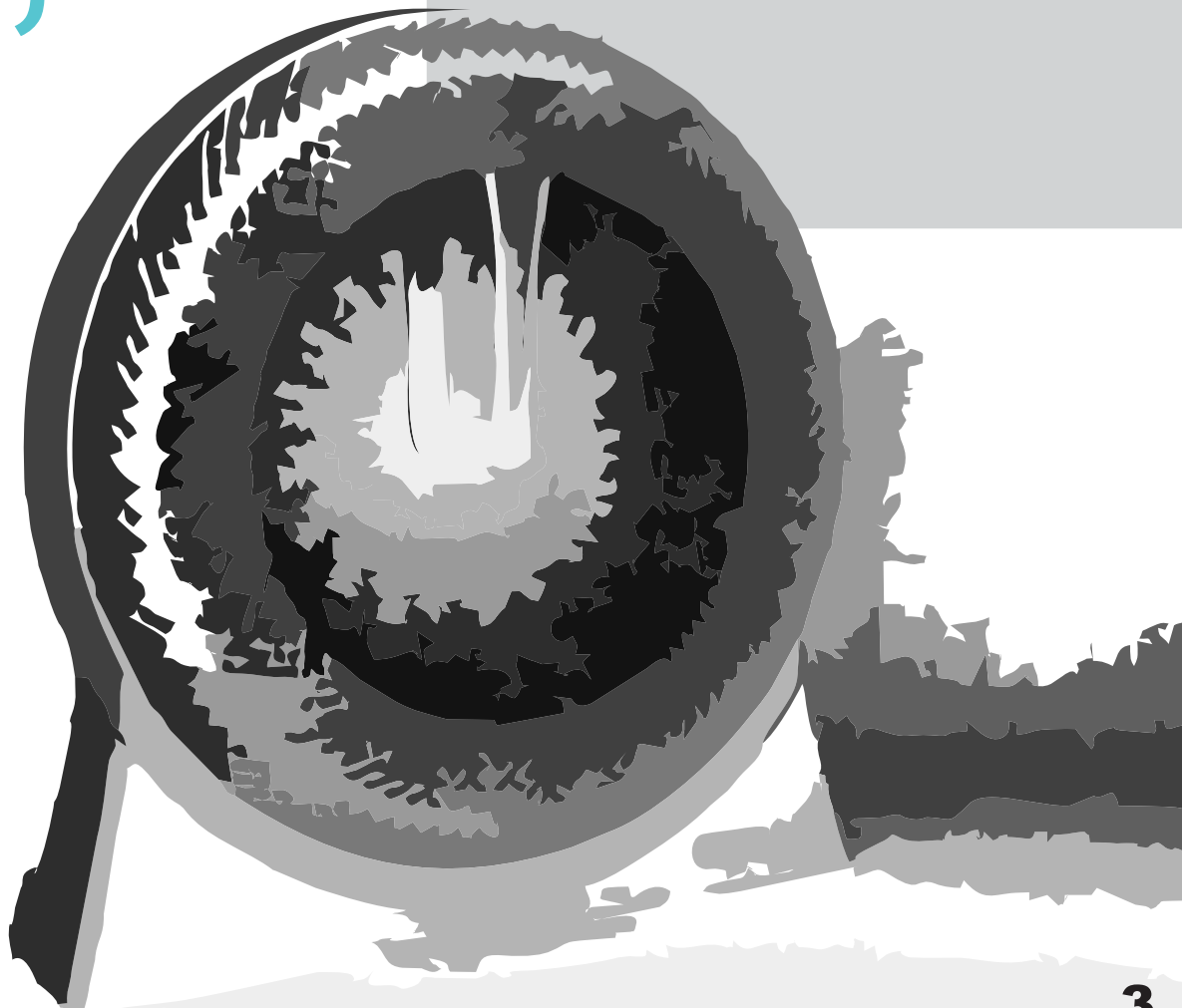
Billabong High EPS International School

“ Objective of the project: By using the present model of the Volksgarden, we would like to make few more of such types with locally available material and grow ornamental plants and vegetable plants in different floors of our school. Ornamental plants are to make the school environment green and vegetables produced are marketed by the Business club of our school as a startup entrepreneurship. Our school has found out an innovative way of implementing hydroponics in greening the school. This project work is called VOLKSGARDEN. The components of the project are imported and assembled in our school by our students. The Volksgarden is a broad wheel where the seedlings are placed in rock salt cubes which are specially designed for the Volksgarden. The main findings of this project are that the Volksgarden is cost effective in many ways. It uses minimum power, needs less nutrients as they are dissolved in the circulating water.

”

Recommendations: As Volksgarden is cost effective and needs less space, all the schools can have at least one of it as an Ecoschool project. And also the multi Store buildings along with their terrace garden, can have one Volksgarden. This reduces the expenses incurred to buy vegetables and also reduce burden on tshe government to import vegetables and save foreign exchange.

Conclusion: Volksgarden is a small initiative by Billabong High EPS International School to bring awareness in the school ecoclubs or nature club activities. It is also an initiative to bring awareness in the society to grow decorative and vegetable plants in Volksgarden and market them and begin a startup entrepreneurship.



Zero Carbon Emission Technology For Maldives

DharumavanthaSchool



Objective: Find a zero carbon emission technology suitable for Maldives to reduce the worldwide concern of increasing carbon dioxide levels at a national standard and to help achieve the goal of Maldives to become the first carbon neutral country by 2020.

We would be looking into the production of electricity by using solar, tidal power, carbon zero architecture as well as carbon free vehicles.

Suggestions: By using solar power for electricity generation and also by using tidal energy. Also the use of fiberglass and low-E windows for the building of houses and also recycled material houses can be possible. In addition, we can introduce battery motorcycles and cars which can replace the petrol motorcycles and cars so we can further reduce the carbon dioxide emissions.

By doing all this, we hope to achieve a net zero-carbon emission and reduce the carbon dioxide levels in the long run. Furthermore, the other nations will take us as an example and do their part for the prosperity of the world. But in order to succeed, we need maximum support from everyone in this project.



Renewable Energy For Energy Security

Lh. Atoll Education Centre



Aim: Implementing new technologies that uses renewable resources for our increasing demand.

Objectives:

- To utilize the freely available natural resources for our energy needs.
- To reduce the carbon emission.
- To decrease our demand in non-renewable fuels.

Our country has good supply of renewable resources such as solar, wind and tides including them to generate electricity will lighten our energy security. Solar Energy would be a better option to produce electricity among these, since the insolation is more. The growing technology will help us to choose our alternatives for our energy demand.

Solar PV projects:

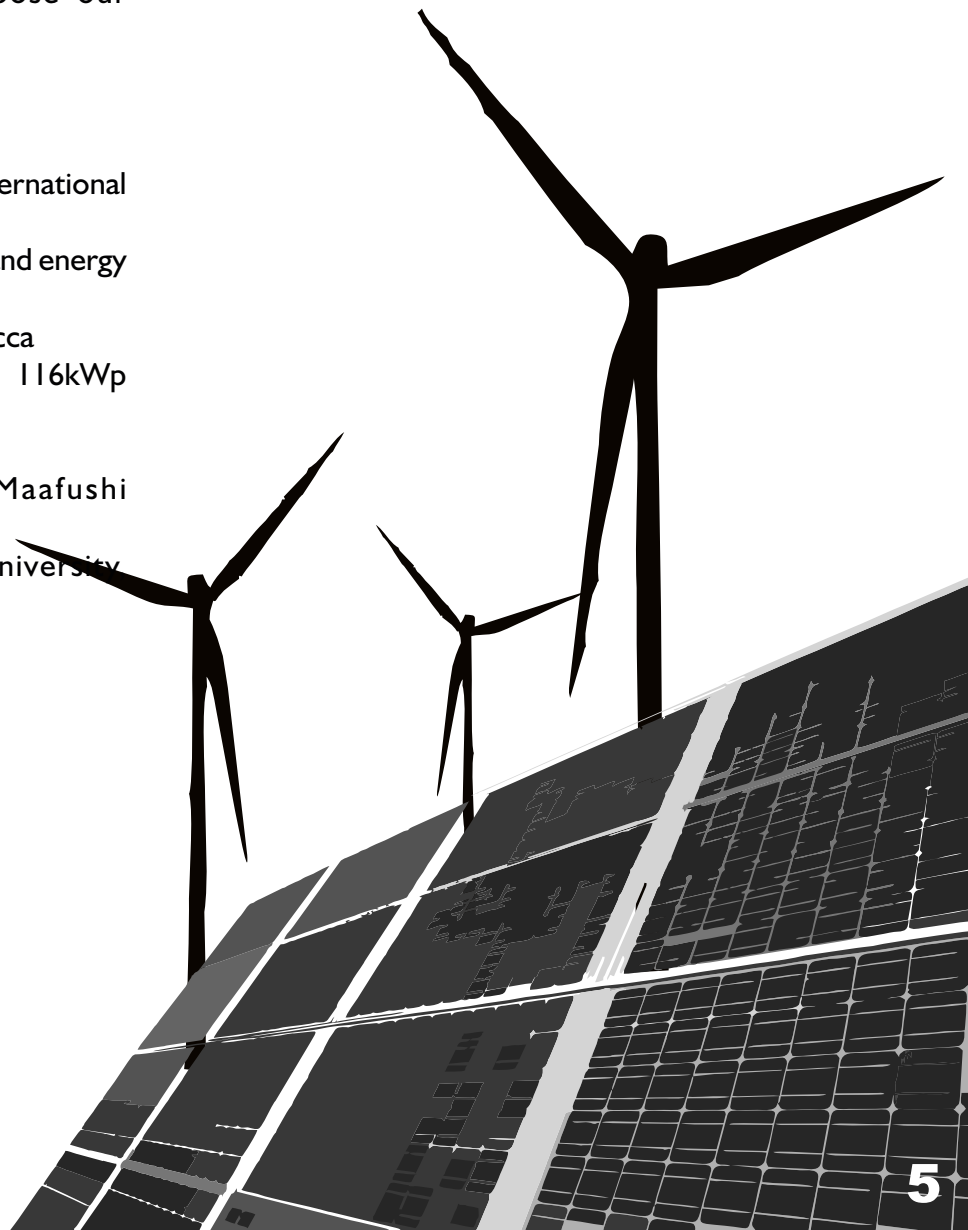
- 683kW STELCO 6 island projects
- 70kWp Billabong High EPS international school and
- 25kWp Ministry of Environment and energy Maldives green building
- 30kWp University of Milano Bicocca
- 200kWp Dh.kudahuvadhoo and 116kWp R.Ungoofaaru
- 14kWp AA.Ukulhas
- 17kWp Guest house in K.Maafushi ,Whiteshell island hotel and spa
- 10kWp Maldives National University S.Hithadhoo

Programmes which can be carried out in Schools:

- Distribute posters and leaflets to increase awareness
- Installing solar panels in schools
- Can conduct workshops
- Call for projects , presentation and models

Recommendations

- Installing solar panels in schools and health centers
- Solar power – diesel powered hybrid boat
- Solar assisted Air conditioner systems for private houses
- Solar street lights



Conservation of Energy

Majeedhiya School



What is energy?

“Energy is known as the ability to do work”

Energy Resources:

Renewable resources

Resources that can be easily replaced

Non- Renewable resources

Resources that cannot be replaced easily

The world depends mainly on fossil fuels for energy extraction (ELECTRICITY). Most of electricity produced in Maldives is from diesel based systems. Spending US\$470 Million (MVR7.2 Billion) for importing diesel annually



Benefits of Conserving Energy

- Reduce pollution (air, water, land)
- Reduce carbon emissions
- Reduce greenhouse effect
- Reduce ozone depletion
- Reduce Global Warming
- Reduce melting of polar icecaps, sea level rise, flood
- Reduce sudden weather patters
- We can save electricity for future
- And maintain limited oil resources



Utilization of passive methods to save energy

Mundoo school

“ Mundoo School Environment Club had conducted a survey in the 12 islands of Laamu Atoll related to the utilization of passive methods to save energy and the challenges and problems of utilizing the same. The survey was interesting and informative. The study had reminded us that passive energy using methods are the natural methods of utilizing light from the sun, wind from nature with NILL Active energy consumption. If we fix adequate number of windows, ventilators and air holes to our houses, we can reduce our fossil energy consumption to a great deal. The main purpose of this project is to create awareness among students to reduce fuel energy consumption by using natural energy sources. Through them, the message could be communicated to the rest of the entire community. Fix windows, Take advantage of Day light, Save Energy is our Slogan.

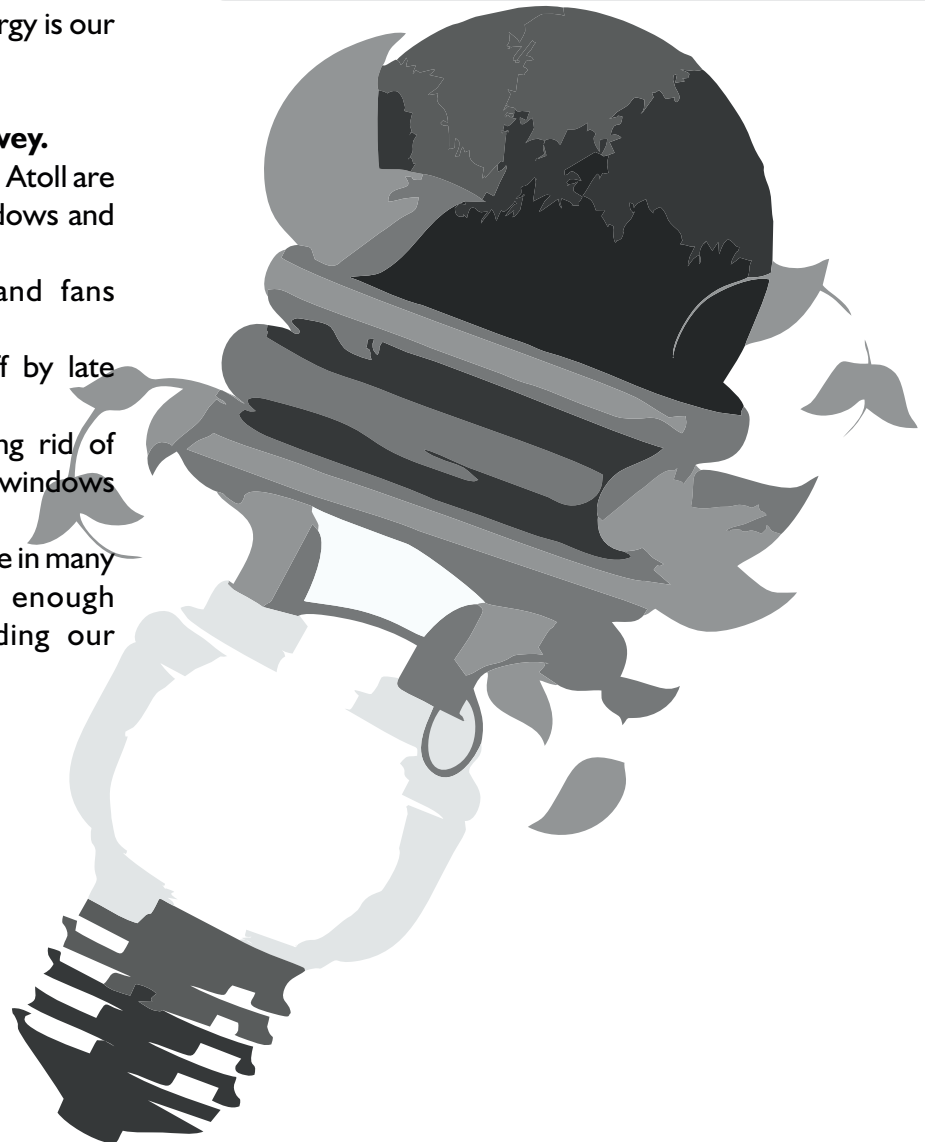
Information collected through survey.

- About 30% of the houses in Laamu Atoll are without adequate number of windows and ventilators to let air and light in.
- Most such houses use lights and fans throughout the day.
- Street lights were not turned off by late mornings on some days.
- Interesting reasons like for getting rid of thieves, people are reluctant to fix windows for their houses.
- Many buildings and houses are there in many parts of the country without enough windows and ventilators including our capital Male’

”

Recommendations: Assistance and guidance to extent the school level activities for environment protection to the community level, Atoll level and getting coordination and support from the atoll to carry out the club activities in an organized manner to achieve the desired aims and objectives.

Conclusion: Passive energy especially solar and wind energy is better for our environment than traditional forms. Let us cooperate with our Governmental activities to generate 60% of electricity from solar power by 2020, and hope for the fulfillment of the same. Let us utilize the munificence blessings of Almighty Allah to us as renewable resources.



Rainwater harvesting for food security

Raa.Inguraidhoo

“ The Maldives has limited natural resources, including rainwater, which is needed for food security. This study was done to understand the health issues and challenges regarding the rainwater harvesting for food security. This was a quantitative study done on the house holds of the island Raa.Inguraidhoo and data were collected from 30 households, randomly distributing questionnaires. According to the results, majority of the participants were aware of collecting clean water and do not face health problems by using rainwater but few have faced diarrhea, and vomiting. Majority of the participants filter the water while others boil, but none chlorinates. Challenges in collecting safe water include improper installation and maintenance of guttering system and loss of cleanness due to rats and cats. Challenges for food security include, unavailability of enough rainwater unavailability of quality assessing facilities unable to collect safe water and storage difficulties Recommendations include, regular cleaning of roofs, government subsidies for rainwater harvesting, introducing pest control programme, establishing community water storage facilities, occasional water quality assessing, and holding awareness programme. ”

Aims:

To create more awareness among citizens of the island, Inguraidhoo on the importance of harvesting rainwater for food security, and hence enhance a positive attitude towards impacts of climate change.

Objectives:

- To identify the various health issues regarding the rainwater harvesting in the Maldives, especially among the people of Raa. Inguraidhoo.
- To understand the challenges faced on harvesting rainwater for food security.



MONTH IN REVIEW

January 2016



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Solar powered electric bicycles handed over to Environmental Protection Agency (EPA) staff

The bicycles were sponsored by the German government.
EPA: Towards Carbon Neutrality



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Workshop: Waste Management @Lh.Naifaru

Conducted by Ministry of Environment and Energy in cooperation with Baa atoll Maalhos council.



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Workshop: Renewable Energy Systems training @ Cyryx College.

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