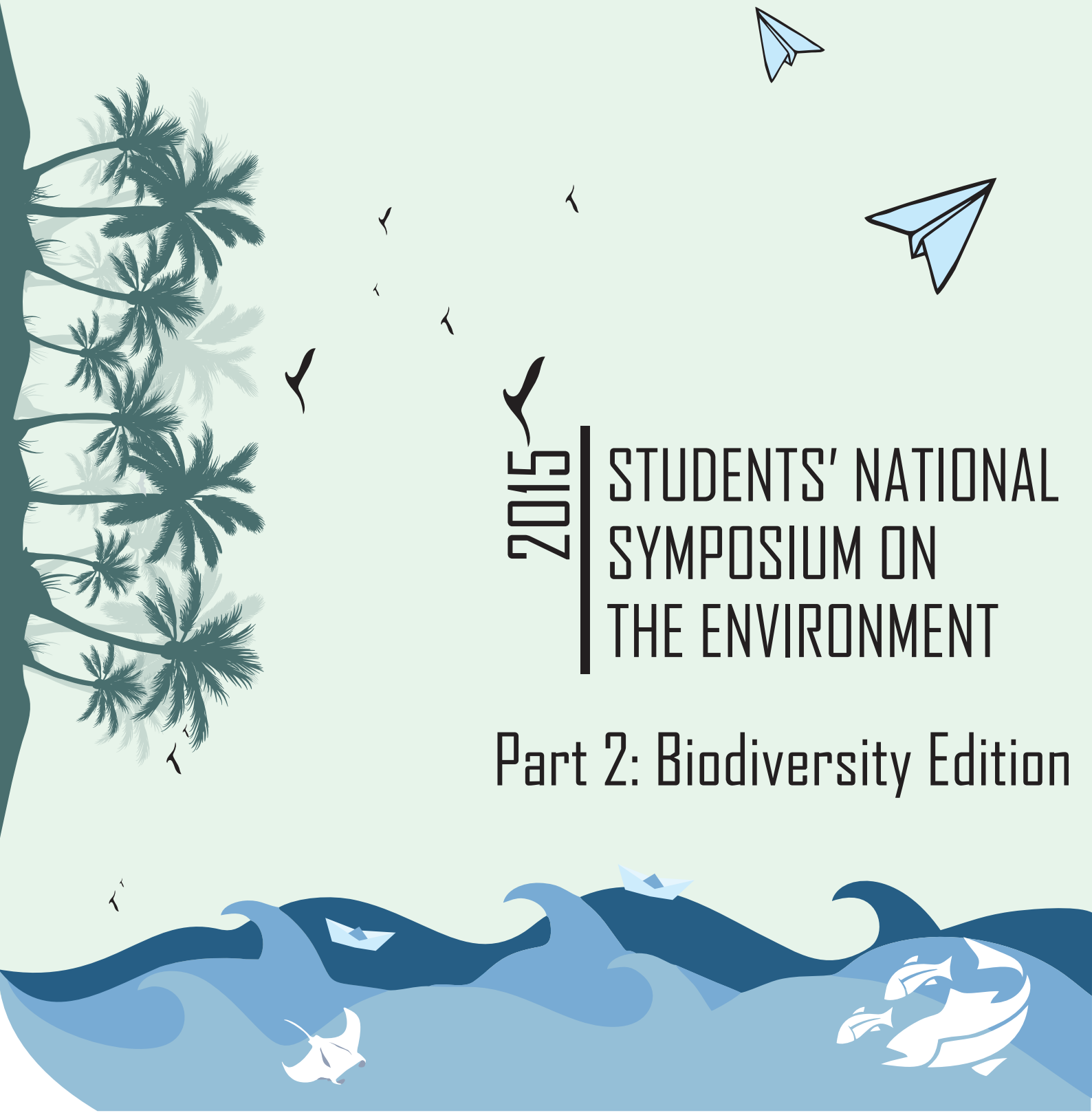


# PEMPHIS

52



Environmental Newsletter  
Ministry of Environment and Energy



2015

STUDENTS' NATIONAL  
SYMPOSIUM ON  
THE ENVIRONMENT

Part 2: Biodiversity Edition

# Minister's Note

With the degree of extinction risk on the rise globally, the subject of biodiversity and conservation of nature is markedly important. The perils of the present situation have reached the rich biodiversity of Maldives' unique natural environment. The pressing concerns of declining biodiversity were also brought into light during School Students' First National Environment Symposium. As per propositions we saw during the symposium, tackling these issues should be given utmost importance and prompt preemptive measures must be taken, nationally and globally, in order to endure through this cardinal fight. Pragmatic mindset as such, would be keystone for the security of our environment, and ultimately our existence.

Thoriq Ibrahim

## Editor's Note

The loss of biodiversity and its associated ecological services presents one of the biggest environmental challenges today. These effects are not a mere scientific finding or research published on a paper, but are already seeing and experiencing the effects of environmental degradation and biodiversity.

This edition of Pemphis covers the findings of the research on biodiversity and its components, conducted and presented by students at the first Students' National Symposium on the Environment.

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

[environment@environment.gov.mv](mailto:environment@environment.gov.mv)

# A call from the biotic world; Conserve migratory birds, preserve biodiversity of Addu Atoll

Feydhoo School



Statistics shows that migratory birds in the Maldives are under threat and need safer and natural habitats to flourish and survive. We aim to create awareness of the crucial status of migratory birds and take measures to increase the number of birds choosing the Maldives as a safe sanctuary by taking measures to protect and replenish their habitats.

We will also research on the habitats they prefer, food resources they look for, breeding behaviour and pattern of species decline

We have done some surveys, interviews and visits to the Addu Bird Sanctuary [Eidhigali Khulhi, Kottaey Region] and have seen that renovation needs to be done and certain steps will increase the number of incoming migratory birds back to the normal.

## Some of the suggestions are as below:

- Increase the number of opportunities for practical nature experiences at school (bird watching, hiking, nature walks and so on).
- Renovating of bird sanctuaries and understanding how other successful bird sanctuaries work.
- Enforcements of laws & Strengthening existing laws
- Promoting eco-tourism to create awareness at an international level.
- Raising awareness among all age groups through media.

As mentioned above, these migratory birds come from a very delicate, yet unique ecosystem, travelling on to further ecosystems that support life. We believe these birds need to be protected in order to establish a perfect balance between nature, our fascination and the life support systems they flourish in. Overall, our main objective is to create a haven for these important beings to visit the Maldives over and over again.



## Migratory birds in the Maldives



*Maahoagulha*



*Maahoagulha*



*Iruvaahudhu*



*Edhunga Ilohi*



*Dheyfaiy Dhooni*



*Chon Chon Ilohi*



*Bulhithun'bi*



*Maakanaa*



*Kirubondana*



*Raanbondhi*



*Bon'dana Ilohi*



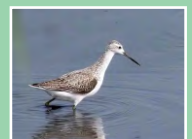
*Rathafai*



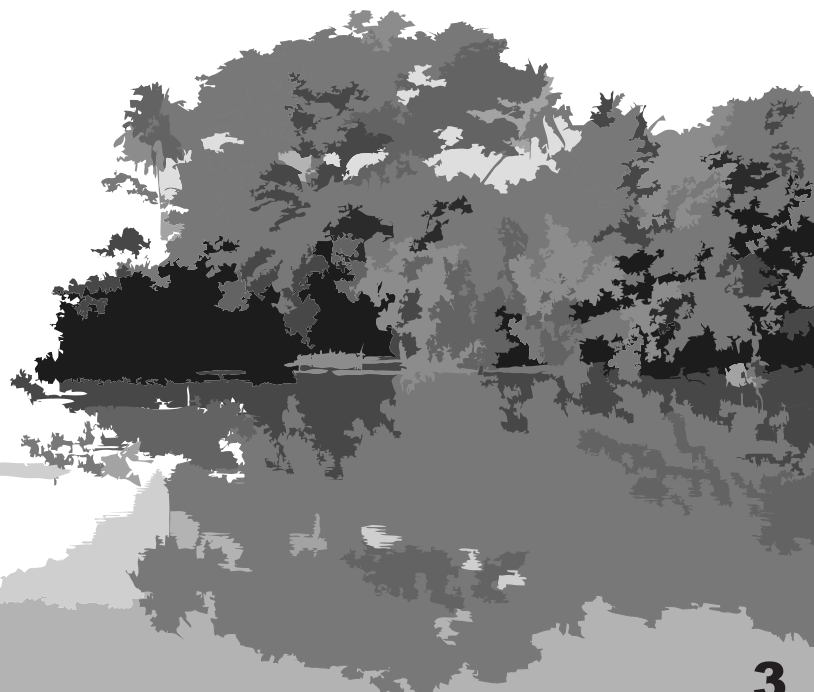
*Onna Ilohi*



*Valu Bondana*



*Furehdhi Ilohi*



# Impacts of Urbanization on Natural Environment

Gn. Atoll Education Centre



Protecting the environment is a responsibility of each and every inhabitant of the environment. We have to bear responsibility for the impacts of urbanization.

## Objectives

- Assessing the extent of knowledge of public and students regarding impacts of urbanization.
- Comprehending the degree of environmental degradation.
- Promoting thought and discussion.
- Creating productive solutions and preventive measures.

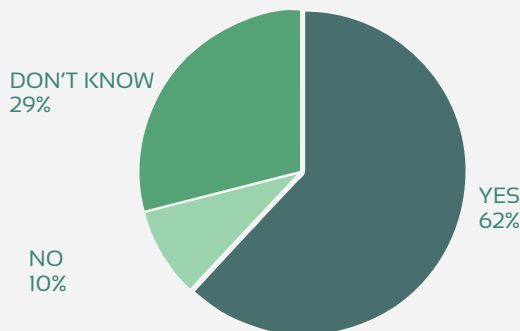


In the United Kingdom, for example, an increasing human population density, and the resulting increase in urban development were found to be the cause of 35% of scarce plant species extinctions in the counties surrounding urbanized areas.

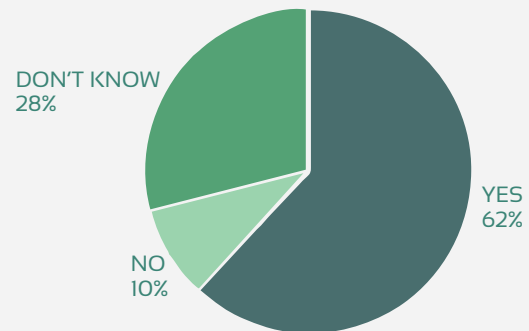
Similarly, in the United States urbanization has been found to be directly responsible for the endangerment of 275 species.

## Has urbanization had any impact on our environment?

### STUDENTS

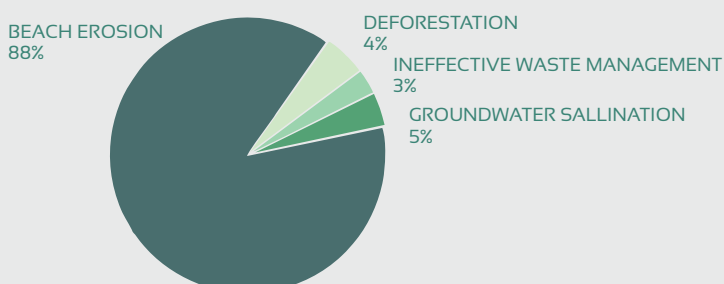


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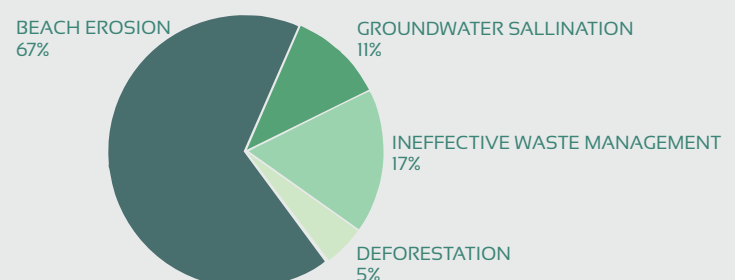


## Biggest Environmental Concern

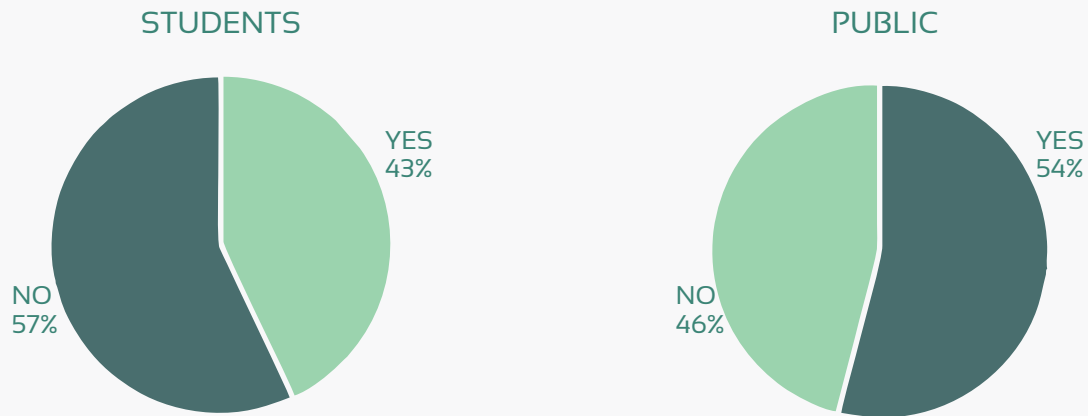
### STUDENTS



### PUBLIC



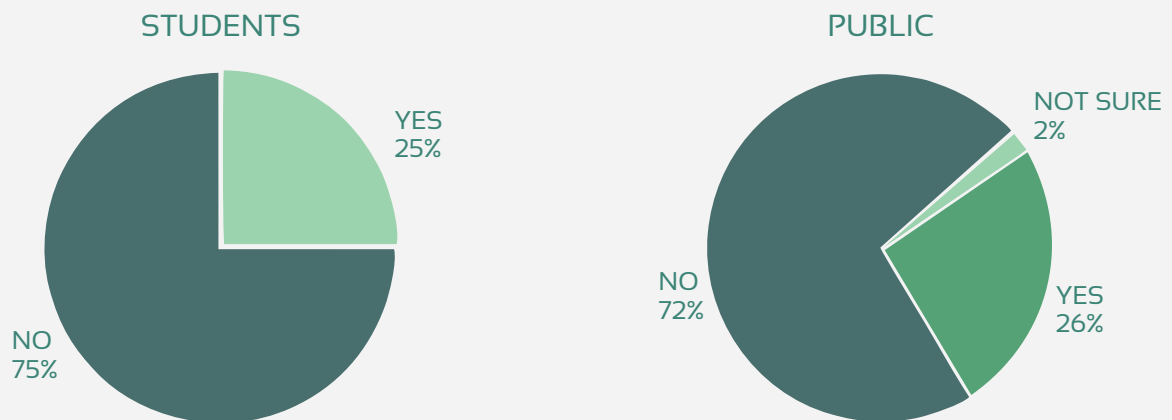
## Did the construction of the harbour contribute to beach erosion?



### 2015-Housing Project

- Out of the total land area of 25,911 m<sup>2</sup>, 13,047.27 m<sup>2</sup> is untouched.
- 1705 trees were cleared.
- Locals in this area report that after the clearing, strong winds buffeted the houses and trees, eventually uprooting many large trees, bearing years of growth.

## Is it a good idea to build houses on wetlands?



### Conclusion and Recommendations

- Need to aware.
- A lack of understanding of the severity of the impacts and its implications on the environment.
- A lack of feeling of individual responsibility to the environment.
- Promote discussion.
- Yearly report by the respective environment club.
- Enforcing environment-friendly habits to instil feeling of responsibility.
- Thoroughly investigating the possible impacts before employing any projects.
- Implement preventive measures .
- Exploring new options.
- Urban development is advancing.
- More people will migrate and local population will continue to increase.
- The landscape will change in the years to come.

# Determining Conservative Value of Island

(EIDHIGALI KILHI, KOATEY PROTECTED AREA AND WHITE TERN)

Hithadhoo School

“ Conservation of the protected area in Addu City is an ongoing mission at province level and is being highly focused by the government and seeks maximum support from the community and schools to accomplish it.

## Uniqueness of *Koatney* and *Eedhigali Kilhi* area

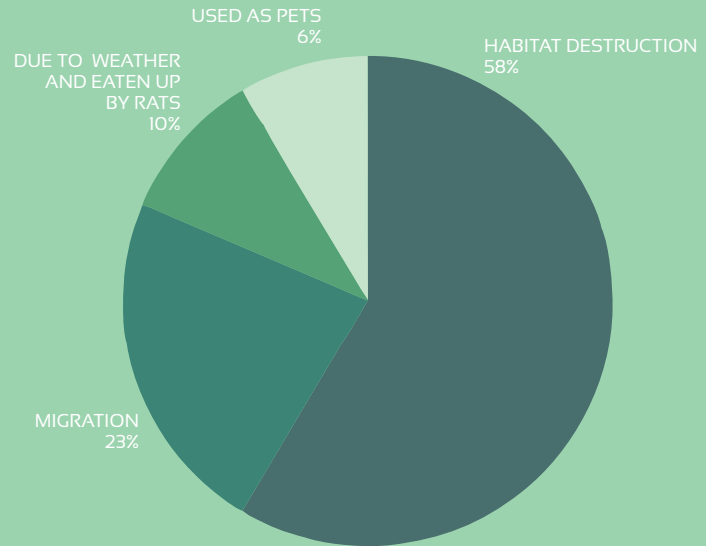
- One of the biggest lakes in the nation
- Diving spot
- Dense vegetation
- *Ran-in Hanaa Fengandu*: A smaller natural lake found in the Protected Area in addition to *Eidhigali Kulhi*, near *Koatney*. Small children believe this is a fairy lake where, due to its green colour, fairies come to rest.

## -Birds found in the area

- Maldivian Water Hen - *Kabili*
- Garganey - *Reyru*
- Common Swift - *Forikey*
- Eastern Grey Heron - *Maakana*
- Maldivian Pond Heron - *Huvadhoo Raabondhi*
- Black Turnstone - *Rathafai*
- Cattle Egret - *Iruvaihudhu*
- Little Egret - *Bodu Raabondhi*

”

## Reason for decreasing the number of *Dhondheeni* in Addu



# Marine Wild Life Of Hanifaru Bay

Kamadhoo School



As the home of one of the most diverse marine environments, the Maldives is renowned for its abundant underwater world, attracting thousands of tourists each year. As a contribution to the Environment Symposium 2015, we focused on the “Marine Wild Life of Hanifaru Bay” of Baa Atoll, Maldives. Hanifaru Bay and its resources were designated as a Marine Protected Area in 2009. On 28 June 2011, UNESCO has declared whole Baa atoll as a World Biosphere Reserve and Hanifaru Bay is one of the core areas of the Biosphere Reserve. Hanifaru Bay has gained world recognition for its capacity to attract over 250 Manta rays into its sandy shallows during peak feeding events. As we have found the significance of this site, we can conserve it, rather than consume it. The resorts of Baa atoll especially, Manta Trust who are based in Four Seasons Resort Landaa Giraavaru is exclusively researching on Manta rays. Their Baa Atoll Marine Education Program is aimed at creating awareness among students for the need of conserving the marine biodiversity. The conservation of Hanifaru Bay and its wildlife illustrates an excellent model for the conservation of similar economic sites, with step-by-step conservation planning procedure that can be easily replicated elsewhere to create a better environment for the prosperity of future generations.

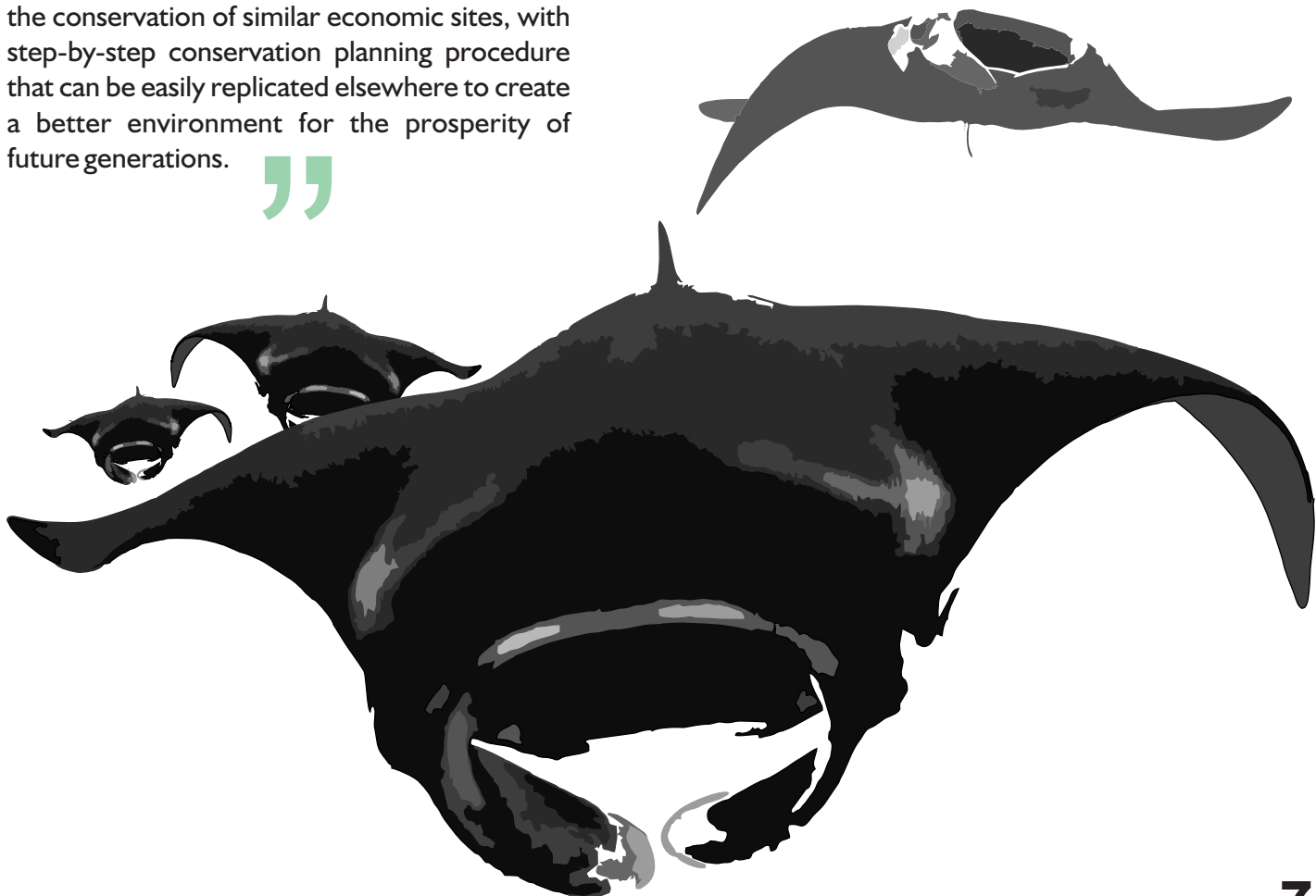


## **Aim:**

To ensure long term sustainable management and protection of Hanifaru Bay, it's resources and biodiversity.

## **Objectives:**

- To protect the globally significant feeding aggregation of Manta Rays & Whale Sharks
- To provide a high quality experience for visitors that does not threaten the biodiversity
- To support sustainable livelihood development of local communities





# *Maa kakidi* (Large Crab)

Maradhoo School

“ This project is about MAA KAKIDI or edible brown crab which is usually found in muddy areas such as mangroves or along coastal areas and beneath stone boulders that run along the shoreline. This crab is commonly known as mud crab. This presentation covers a species inventory under the topic biodiversity in Addu city which forms a major constituent of the decapod fauna in terms of their species diversity.

These crabs are almost extinct thus we would like to recommend some preventive measures and how this species can be regenerated through aquaculture since it has environmental impacts on their habitat.

”

This crab is very rare and now only a close relative of these crabs are usually found. The mud crab has commercial value as human food. However, apart from edibility value, most of the species of this group play a key role as a major link between primary and secondary producers. These burrowing members are of immense use in the recycling of organic matter in the ecosystem .



# Mangrove Ecosystem

Nolhivaranfaru School

“ The purpose of this study is to realize that the mangroves are a rich, diverse and unique ecosystem. They need to be protected and preserved for many reasons.

In the Maldives, there are 13 species of mangroves, with 6 plant species and 37 fungal species associated with mangroves. ”

## **Aim:**

To realize that the mangroves are rich, diverse and unique ecosystem and they need to be conserved for many reasons.

## **Objective:**

- To study about mangrove plants and animals
- To Identify human impacts to our mangrove ecosystem.
- To become aware of threats to mangroves



# How Urbanization Effects Biodiversity

Sharafuddin School



In the Maldives, the government has taken several initiatives to protect the biodiversity. However, there are very few studies on how urbanization affects biodiversity in the Maldives. The aim of this study was to assess how urbanization has affected biodiversity in Addu City. Assessing the awareness of the people on urbanization was also one of the aims. The study used a qualitative approach by interviewing 50 individuals from different areas in Addu City. Results of the study showed that 80 % of the people interviewed have not heard about the term 'biodiversity' nor its importance. However, more than 90% of the people agreed that we should not destroy our natural habitat when we carry out constructional activities. Based on the findings of the study, it is recommended that there is need to carry out more community awareness programs to educate people about biodiversity and its importance. People should be encouraged to grow more trees in public places. Promoting organic farming practices and avoiding the use of toxic pesticides also need to be encouraged. Moreover, environmentalists, policy makers and developers need to work and coordinate to include ecological values while implementing their plans.



## Objective:

- To create awareness of biodiversity and it's importance
- To highlight the issues arising from urbanization and its effects on biodiversity of Maldives



# Grow for beauty, Grow for health

Thajuddeen School

“ The intent of this project is to encourage and create awareness about the benefits of targeting plantation for aesthetics and health. Interviews obtained from experienced audiences and surveys conducted among the famous people in this area forms the foundation of the methods followed in this research.

The topic will be briefly discussed by the terms of school level, national and global level. The current situation of Maldives, as well as history of targeted plantation around the world will be discoursed.

After careful deliberation of the results obtained from the surveys that have been performed during the course of this study, it is comprehensible and certain that, there are constraints for the easy mass plantation in Maldives. For instance the lack of land, deficient soil, financial difficulties and the people who are oblivious to the benefits of targeted plantation. Despite these restrictions, there are many ways to overcome these challenges.

Succession over these constrictions includes discarding importing plants, specialize a remote island for mass plantation, use modern technology such as hydroponics to grow plants where land lacks.

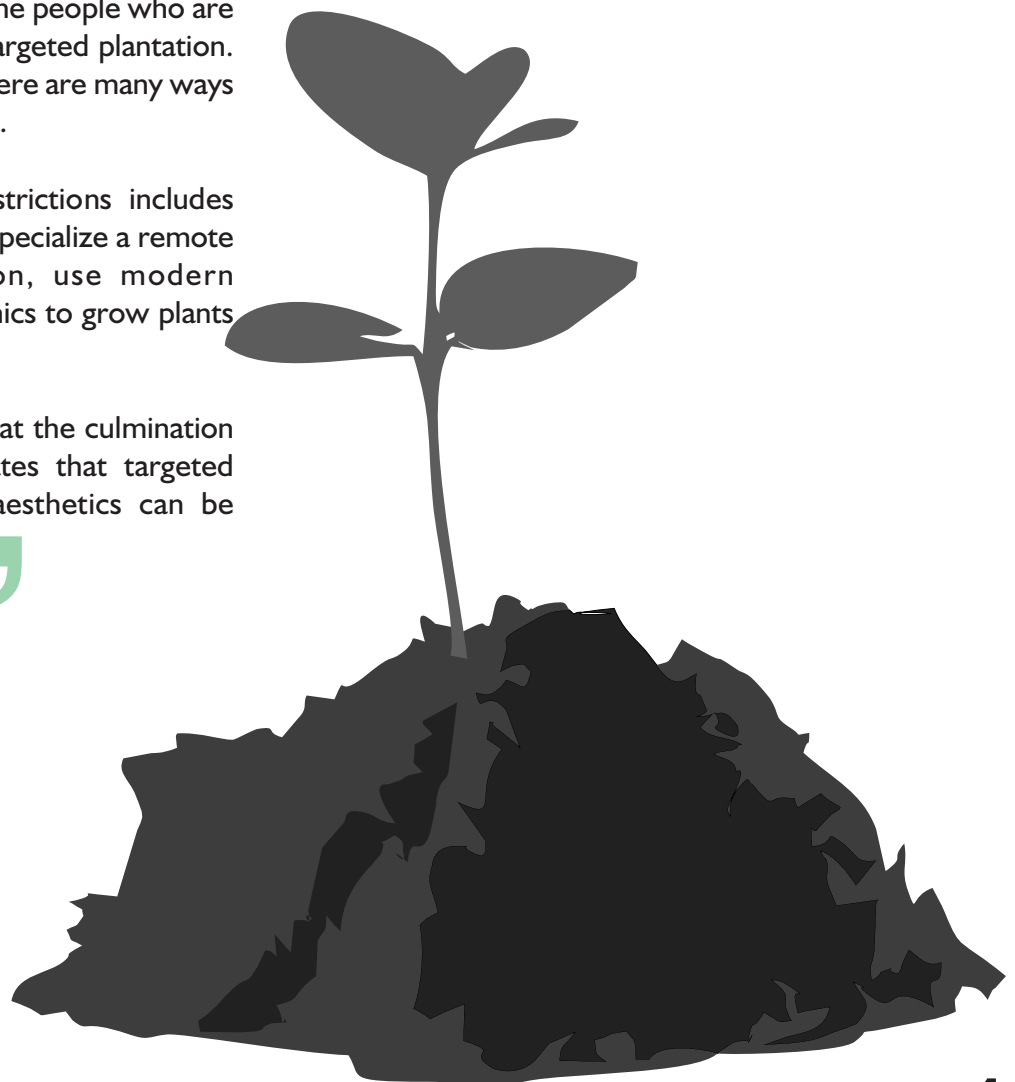
In conclusion, it's affirmed that the culmination of this research demonstrates that targeted plantation for health and aesthetics can be carried out successfully. ”

## **Aim:**

To encourage and aware people about the benefits of targeting plantation for aesthetics and health

## **Objective:**

- For people to be aware of the important role that plants play in improvement of aesthetics and health.
- To familiarize people with alternative methods for targeted plantation to overcome the challenge
- To appreciate and be thankful to the beautiful nature that Allah (swt) has blessed us with



# Assessment and conservation of Marine Organisms in Maldives

B. Atoll Education Center

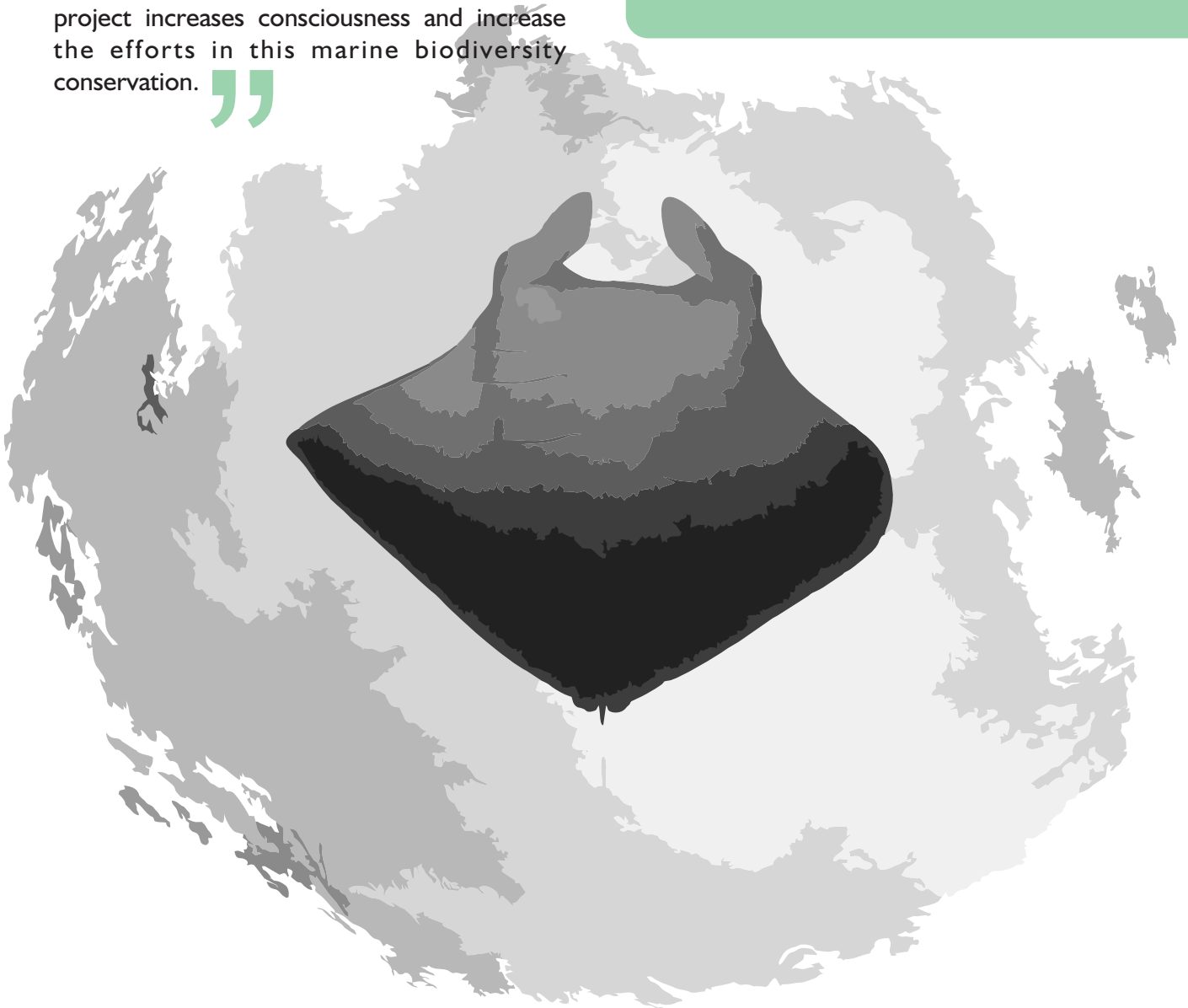
“ The main area of research is based on the conservation efforts by Baa Atoll Biosphere Reserve in Baa. Eydhafushi.

These two mainstays depend directly on the continued maintenance of coastal and marine ecosystems. We have found out that people are underestimating the gravity of the situation and the conservation efforts are not meeting the development efforts being carried out in Maldives. Even though several organisms are being remarkably conserved, it is still not up to the level. The environmental organizations should widen their scope of research and increase the number of projects being carried out. Proper enforcement of laws needs to be ensured by the respective authorities.

In conclusion, it is our sincere hope that this project increases consciousness and increase the efforts in this marine biodiversity conservation. ”

## Protected areas under the biosphere reserve:

1. Hanifaru
2. Mendhoo
3. Maahuruvalhi
4. Angafaru
5. Bathalaa
6. Dhigali-haa
7. Dhigali-giri
8. Olhugiri
9. Mathifaru-huraa
10. Wreck of Cobin
11. Goidhoo Koaru



# Inventory of Coastal Trees and Plants

Ahmadhiyya International School



Plants and trees play a vital role in our daily life even though Maldives is referred as a small country with tiny islands. The islands of Maldives highly rely on trees and plants when compared to rest of the world to remain as a country in the future. Therefore, it is essential to know the inventory of coastal trees and plants in the Maldives.

The coastal area we define as the interface or transition areas between land and sea including large islands and lakes. Coastal trees and plants helps to hold the beach soil from soil erosion and also to reduce the huge negative impact of cyclonic storms, hurricanes, and tsunamis. As a result of this, these tiny small islands appear as islands in the upcoming generation.

The coastal zone is used extensively for a large number of activities such as pleasure and family enjoyment purpose as well. They are also rich in biodiversity and acts as habitats for wildlife. Some of the trees that grows in the coastal areas of Maldives include Iron Wood (Kuredhi), Mangrove Apple (Kuhlhavah), Coconut Palm (Dhivehi Ruh) etc.

In conclusion, due to human impact, some trees and plants are being endangered. So it is indispensable to protect those trees and plants. There is a fear of extinction of coastal trees and plants. Therefore nationwide awareness programs are important for the future of coastal areas in Maldives.



## Importance of coastal trees and plants

- To hold the soil in the coastal area (beach area)
- It reduces the impact of cyclonic storms like hurricanes and tsunamis.
- It acts as a habitat for wildlife.

## Importance of coastal trees and plants for Maldives.

- Maldives is a country with tiny islands.
- 99% is surrounded by sea.
- Low lying nation.
- Such plants are indispensable to prevent from soil erosion.



# MONTH IN REVIEW

October 2015

## 15: Signing for the first phase of Accelerating Sustainable Private Investments in Renewable Energy (ASPIRE) project

Agreement 1: Power Purchasing Agreement between the investor and STELCO, to enable STELCO to buy electricity that will be produced from 1.5 megawatts of solar photovoltaic systems to be installed in Hulhumale' island.

Agreement 2: Implementation Agreement between Ministry of Environment and Energy and the investor for the purpose of providing government support facilitated by the ASPIRE structure.

## 20: Training programme on "Good service practices in refrigeration and air-conditioning"

**Organized:** Ministry of Environment and Energy.  
**Collaboration with:** Maldives National University.

**Participants:** staff of Maldives Airports Company Limited (MACL).



## 22: Contract signed for the installation of 2.5MW solar PV systems

**Contractor:** CCE Oasis Technology Corporation of China

**Works:** design, supply, installation, and maintenance of 2.5 MW of grid-tied solar PV-diesel hybrid systems.

**Location:** Th. Buruni, B. Goidhoo, GA. Villingili, Lh. Kurendhoo and Addu City.

## 04: Design works for the development of sewerage facilities in 6 islands awarded

**Consultant:** Green Tech consultants

**Location:** Hdh. Vaikaradhoo, Sh. Feydhoo, K. Dhiffushi, Ga. Kandu-hulhudhoo, Ga. Maamendhoo, and Gdh. Fares-Maathoda.

## 05: Climate changed adaptation project launched

The Government of Maldives, the World Bank, European Union and the Australian Agency for International Development together launches the Climate Change Adaptation Project under the umbrella of the Maldives Climate Change Trust Fund.

## 07: Minister of Environment and Energy congratulates the newly elected Chair of the Intergovernmental Panel on Climate Change

**Newly elected Chair:** Professor Hoesung Lee from South Korea.

## 07: Groundbreaking of Sewerage System in Th. Dhiyamigili

**Inaugurated by:** Minister of Environment and Energy Thoriq Ibrahim.

**Contractor:** Male' Water and Sewerage Company (MWSC).

## 08: Maldives submits the Fifth National Report on Biological Diversity

The Fifth National Report on Biological Diversity, prepared in accordance with the national obligation under the United Nations Convention on Biological Diversity (CBD).

## 08: Design works for the development of water supply and sewerage facilities awarded

**Consultant:** "Shah Technical Consultants Pvt Ltd"

**Water Supply Facilities:** Ha. Kelaa and N. Landhoo.

**Sewerage Facilities:** Hdh. Naavaidhoo, Ha. Kelaa and N. Landhoo

## 13: Establishment of rainwater harvesting systems in 3 islands

**Islands:** Raa. Rasgetheem, Angulhetheem and Vaadhoo.

## 13: Groundbreaking ceremony of R. Alifushi sewerage system.

**Inaugurated by:** Minister of Environment and Energy Thoriq Ibrahim. The inauguration was held this evening in R. Alifushi. Establishment of Sewerage Facility in R. Alifushi is carried out by Male' Water and Sewerage Company (MWSC), under a design and build contract signed on 18 September 2013.

## 21: Workshop on "Contribution of media in energy sector development"

On the occasion of World Energy Day (22nd October).

## 22: Training Workshop on CITIES

@Customs for the staff of Maldives Customs Service



## 25: Third Global Environment Facility (GEF) Regional Committee meeting

**Purpose:** to discuss on the water resource management projects which are carried out by UNDP and UNEP.

## 25: Contracts signed for the installation of generators in 5 islands

**Contractor:** LTL Projects

**Islands:** Th. Buruni, B. Goindhoo, Ga. Villingili, Lh. Kurendhoo and Addu City

## 27: Contract signed for the establishment of coastal protection structures at G.Dh. Thinadhoo

**Contractor:** Maldives Transport and Contracting Company (MTCC)

**Location:** Baraasil Area of Gdh. Thinadhoo.

# MONTH IN REVIEW

November 2015

## 04: National Waste Management Policy Launched

Launched by: Minister Thoriq Ibrahim.

Objectives of the policy: Managing waste effectively and reduce the amount of waste produced. Establish waste management centers in all inhabited islands.



05: State Minister Abdullahi Majeed reiterates the Maldives' support for the Island Proposal to amend the Montreal Protocol. @ the High-Level segment of the 27th Meeting of the Parties to the Montreal Protocol.

16: "Mitigation of Short-Lived Climate Pollutants (SLCP) is directly linked to the well-being of the public, thereby affecting our everyday lives", State Minister Abdullahi Majeed. @ CCAC's SNAP Initiative Inception workshop.



01: Contract awarded for the operation and maintenance of Sewerage System in Ha.Thuraakunu

Contractor: Fenaka Corporation Ltd.

## 05: Joint-Credit Mechanism (JCM) Promotional Seminar

Seminar inaugurated: by Minister Thoriq Ibrahim.

JCM: facilitates diffusion of leading Low-Carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributes to sustainable development of developing countries.



16: Date extended till 13th December for Energy Efficiency Photography Competition 2015

1st Place: 32" TV, 2nd Place: Samsung Galaxy TAB E, 3rd Place: Samsung Home Theatre System.

16: Training on Operations and Maintenance under the "Increasing Climate Resilience through Integrated Water Resource Management Program" commenced.

Duration: 2 weeks,

Organized by Ministry of Environment and Energy. Collaboration with: MWSC

## 19: Media Brief regarding COP 21

@Ministry of Environment and Energy

## 23: Invitation to bid for provision of Sewerage and Water Supply Facilities

Sewerage: GDh.Gahdhoo

Water Supply and Sewerage: Ga.Kolamaafushi, N.Velidhoo, R.Hulhudhuffaar and B.Thulhaadhoo

Project Finance: Government of Republic of Maldives and through Funds allocated by the OPEC Fund for International Development (OFID) loan.

24: Public companies signed the Declaration of Intent to Contribute to a Climate Resilient, Low Carbon Economy

20 Companies signed.

Minister Thoriq Ibrahim signed on behalf of the Ministry of Environment and Energy.

25: Training on Operations and Maintenance under the "Increasing Climate Resilience through Integrated Water Resource Management Program" concluded.

Organized by Ministry of Environment and Energy. Collaboration with: MWSC





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