

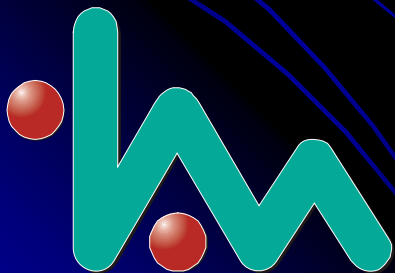
Global Warming and Climate Change:

Impact on SIDS

Ilyas Ahmed

Communications Authority of Maldives

August 2015



Overview

- ➔ **SIDS - Distinctiveness**
- ➔ **Impacts of Global Warming and Climate Change**
- ➔ **Impact on Communications**
- ➔ **Mitigating the Risks**
- ➔ **Consequences**
- ➔ **Emergency Communications**
- ➔ **Minimising the Impact**

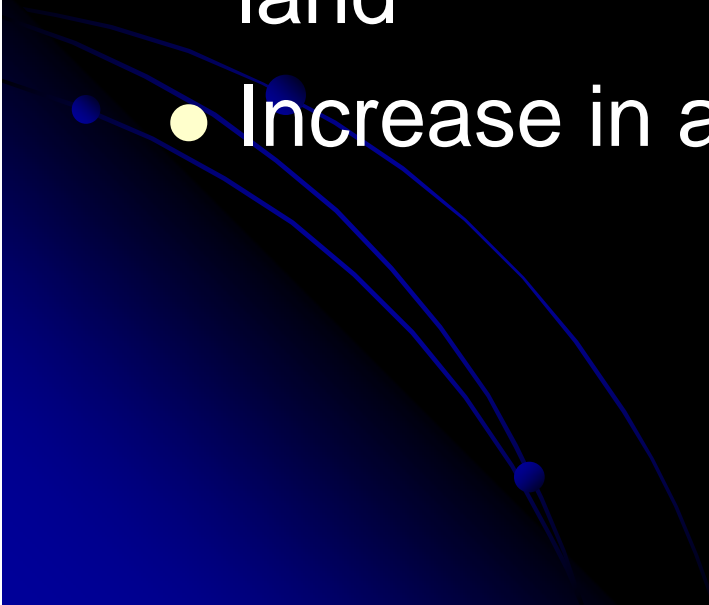
Small Island Developing States - SIDS

Distinctiveness

- Small Population
 - Scattered across vast sea area
 - Very low height above sea level
 - Connectivity via radio networks
 - Low economic activity
 - Many small islands
- 

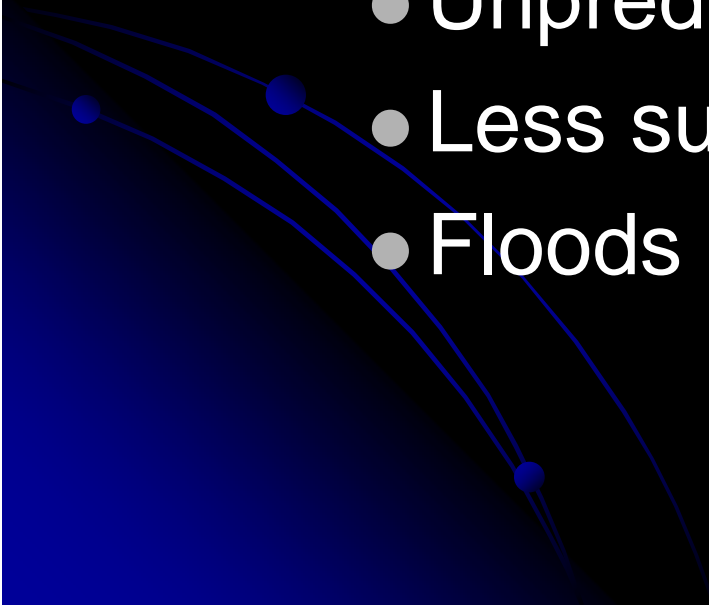
Impacts of Global Warming and Climate Change

Global Warming

- Rise of sea level
 - Erosion of land and reduction of shore land
 - Increase in average temperatures
- 

Impacts of Global Warming and Climate Change

Climate Change

- High Winds
 - Tidal waves
 - Unpredictable weather
 - Less sunshine
 - Floods
- 

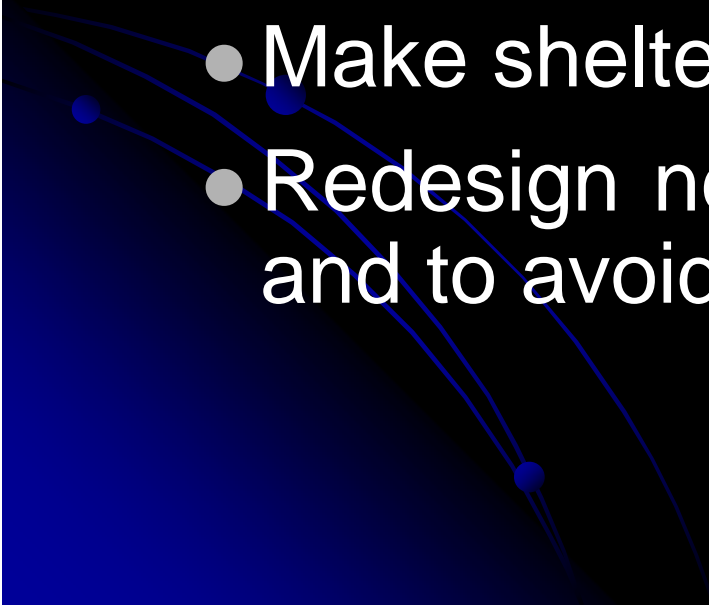
Impact on Communications

- Communication towers often near shore lines
 - Erosion of shoreline damages towers
 - Waves move inland and flood equipment shelters
- High Winds
 - Move antennas and misalign them
 - Sometimes bring down towers

Impact on Communications (2)

- Prolonged periods of rain
 - Damage cable networks and junction boxes
 - Decrease in available solar power
 - Affects radio wave propagations sometimes
- Increase in temperature
 - Disturbs network design and balancing
 - Need for more cooling and air-conditioning
 - Increase in power usage

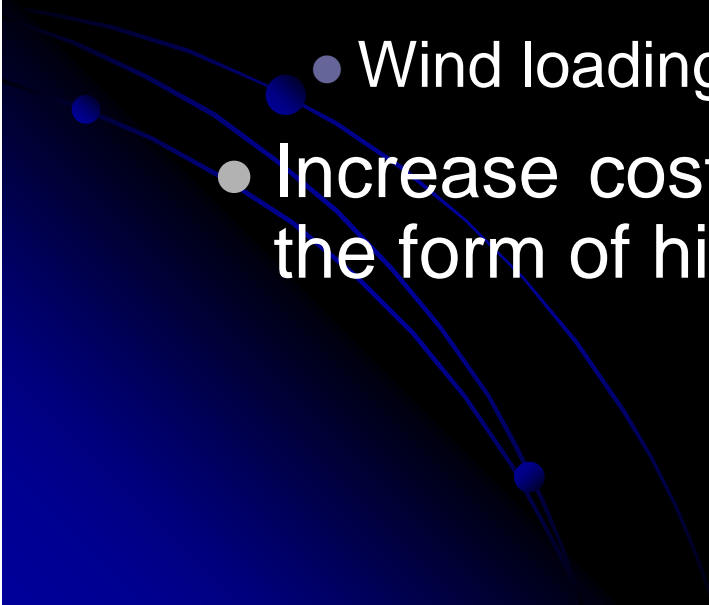
Mitigating the Risks

- Move antenna towers and guy wires inland
 - Raise equipment shelters
 - Raise solar fields from ground level
 - Make shelters water tight
 - Redesign networks to have redundancy and to avoid single point of failure
- 

Mitigating the Risks (2)

- Introduce antenna arrays at different heights
- Increase backup power capacity
- Introduce low power equipment
- Keep backup networks (eg: satellite)
- Have emergency communication facilities
- Undertake measures on global warming and climate change

Consequences

- Increased costs to network operators
 - Allocation of scarce and prime inner land for antenna sites
 - Antennas more closer to resident population
 - Perceived risk of radiation
 - Wind loading noise
 - Increase costs passed down to consumers in the form of high prices
- 

Emergency Communications

- **Have a facilitator for enabling networks and services**
 - Coordinate between the stakeholders
 - Disaster Management Centre
 - Meteorological Office
 - Army, Police
 - Telecom Operators
 - Media

Emergency Communications (2)

- **Priority Calling**

- In emergency and disaster situations, networks get congested
 - Facilitate and enable priority calling
 - Compile and Maintain List of key people for priority calling

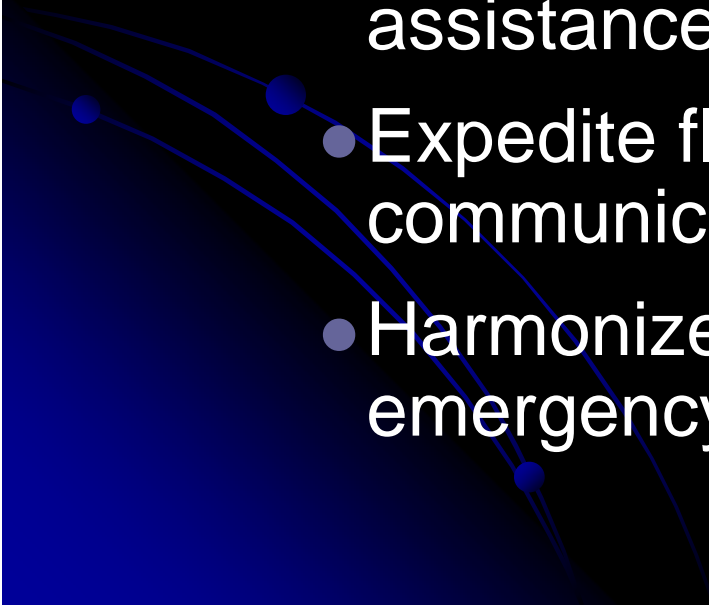
Emergency Communications (3)

- **National Roaming**


- At times of disaster, some networks may fail while some may survive
 - Facilitate national roaming
 - Enable national roaming for key people
 - When national roaming is not available, maintain a stock of active foreign SIMs

Emergency Communications (4)

- **Tampere Convention**

- Coordinate and facilitate the ratification and implementation of the conventions
 - Legal Framework for emergency communications and humanitarian assistance
 - Expedite flow of equipment for emergency communications
 - Harmonized frequency bands for emergency communications
- 

Emergency Communications (5)

- **Be prepared and ready**
 - Conduct drills and exercises at regular intervals
 - Activate backup systems
 - Communicate with the personnel involved
 - Identify the gaps
 - Revise the plans and procedures from the experience gained
- 

Minimising the Impact from Climate Change

Initiatives for Vendors and Manufacturers

- Opt for environment-friendly or Green processes in manufacture & production of equipments and consumer devices
- Create end-products that require low power and less energy consumption
- Introduce recycling mechanism for old computers, phones etc

Minimising the Impact from Climate Change (2)

Initiatives for Service Providers

- Greener technology power sources to maintain telecom networks, data centres etc.
 - Solar, Wind, Wave, etc
- Opt for Network technologies with adaptable performance and energy consumption depending on network load
- Avoid altering the environment
 - cutting trees, clearing shore-line vegetation
 - Blasting reefs

Minimising the Impact from Climate Change (3)

Initiatives for Regulators

- Promote/ Insist on cleaner means of power.
- Insist on Environmental Assessment Study before approving major ICT projects.
- Lobby other sectors and industries to promote environment-friendly ICT usage.
- Conduct Awareness programmes
- Facilitate Tele-services to minimise travelling which leads to reduced Greenhouse Gas emissions

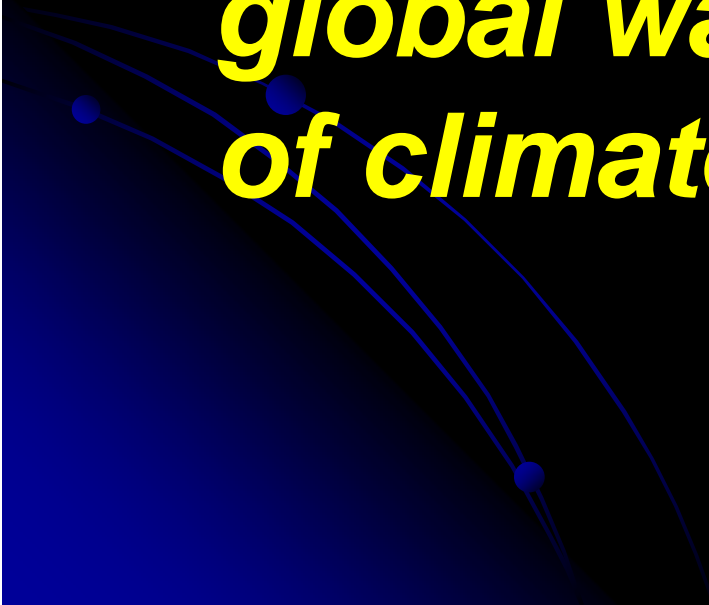
Minimising the Impact from Climate Change (4)

Consumer Initiatives

- Be environmentally conscious when using technology.
 - Switch off PC's and other device when not in use. (Even on 'Standby' mode, when all homes are on standby, a country's power consumption will be huge)
 - Reduce screen brightness of TVs and monitors to required level

So...

What can we SIDS do to address the challenges from global warming and impact of climate change ?



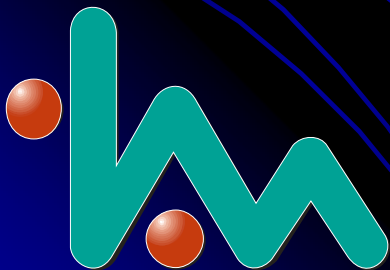
Global Warming and Climate Change is indeed a Global Issue

- *No one country or group of countries alone can fight it*
- *Nor can the ICT industry alone mitigate it*
- *The industry, governments and consumers can take many initiatives to help SIDS have reliable communications in times of global warming and climate change*

Global Warming and Climate Change is Real and it is a Threat to SIDS

***But together, we can fight it
and achieve results***

Thank you 😊



ދިވެހިރާއްޖޭގެ ޖުމްހޫރިއްޔާ ގުޅިގެން
TELECOMMUNICATIONS AUTHORITY OF MALDIVES