

Climate change and coral reef conservation



THE STORY OF MALDIVES

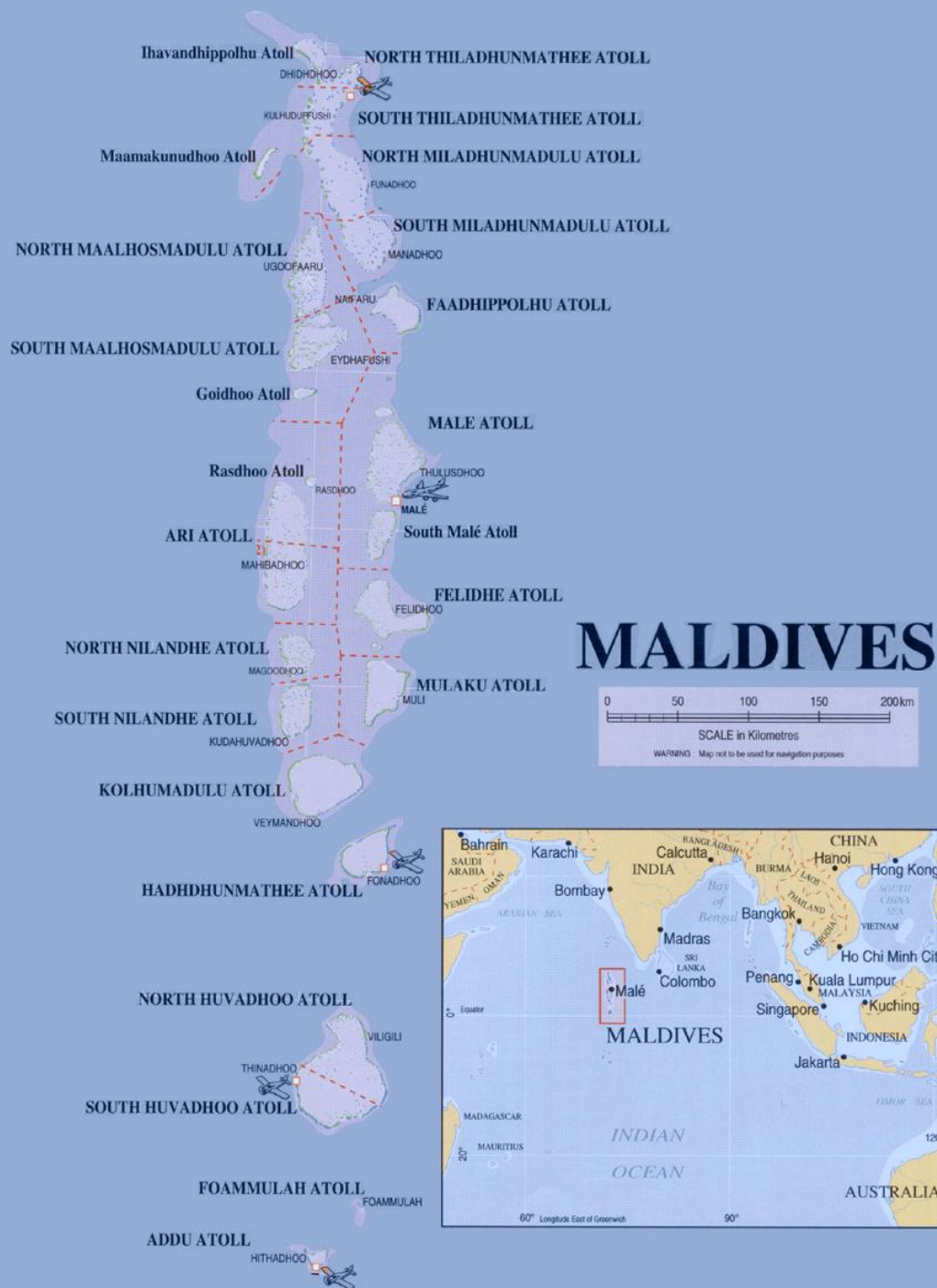
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Significance of ecotourism & coral reefs on regional economy

- Coral reefs are among the most diverse and valuable ecosystems on earth
- provides nutrition, medicine, employment and enjoyment for millions
- Coral reefs provide goods & services of US\$ 375 billion each year
- Tourism revenue generated by coral reefs contribute more than 4% of world's GDP
- Ecotourism – fastest growing sectors of tourism industry, 10-15% annually
- It is also an infinite source of inspiration for modern science,
- An invaluable wealth as a library of information
- A crucial mitigation resource against environmental changes.



Introducing Maldives



- 80% of land just over a meter above sea level
- Only 1-2 % of the country is land
- 1192 beautiful tropical islands
- 194 inhabited islands
- 105 Tourist Resorts
- 60 Industrial/agricultural islands
- Population of 360,759
- Land area: 300 km²
- 6-8% GDP growth annually
- Per capita income of USD 6405

Reefs of Maldives

- Less than 3% of 859,000 SqKm of total area is only land
- Reefs and seas always remain as part of our life style
- Exported cowry shells to use as money in different corners of the world during ancient times
- Corals were used as building material until it was banned
- Coral reef system is the 7th largest in the world
- Representing some 5% of the global reef area
- 21,000 SqKm of reefs are home to 250 species of coral
- Coral reef systems of the Maldives are one of the richest in the world in terms of species diversity



@Mohamed Sifab Saeed



Reefs and marine biodiversity based sectors contribution –Maldives

- 02 main economic industries – Tourism & Fisheries heavily depends on coral reefs and marine ecosystem
- 02 main industries – Tourism & Fisheries
- 71% of national employment
- 49% of public revenue
- 62% of foreign exchange
- 98% of exports
- 89% of GDP
- Reefs provide us protection from natural disasters



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Threats to coral reefs

- Threats from climate change
- Oceanic acidification
- Blast fishing
- Cyanide fishing for aquarium fish
- Overuse of reef resources



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Sustainable management of coral reefs

- Ban on coral mining
- Control measures on harvesting reef fishery
- Regulations on sand mining
- Ban on shark fishery
- Designation of marine protected areas
- Biosphere reserve of Baa Atoll (Hanifaru)
- To designate one of the largest biosphere reserves in the world



Vulnerability of Maldives

- Among the most vulnerable countries to climate change and associated sea level rise
- Over 80% of land area is less than 1 meter above mean sea level rise
- More than 80 inhabited islands face perennial beach erosion
- Extremely high economic dependency on tourism
- Water shortage (27% GDP on transporting to outer island)
- High import dependency
- Wide population dispersal in small islands
- Almost exclusive dependency on fossil fuel (36% GDP)
- Remoteness of the islands



Climate change impacts

- Impacts to dive sites due to reef degradation as a result of rising sea surface temperature
- Damages to tourism infrastructure due to coastal erosion and inundation
- Impacts due to coral bleaching events due to sea surface temperature rise
- Decrease in the value of the product, due to changes to the beach as a result of increase in sea level and wave action
- Loss of tourism value due to coral reef degradation will result profound damage to the economy
- World is to lose one of its favourite diving destinations if climate change trends continue



Natural disasters

- Climate change is expected to increase the frequency, severity and magnitude of natural disasters
- Past occurrences of natural disasters are low
- Indian Ocean tsunami of 2004 caused huge damages
- All inhabited islands and resorts need to be prepared for disasters
- MMS and NDMC is working on disaster preparedness, mitigation and adaptation
- Disaster Act of Maldives in progress
- Vulnerability lies in the low elevation and flat topography of the islands and the wide dispersion of the population
- Climate change is expected to have severe impacts (IPCC predicts 59 cm rise by year 2100)



Meeting disaster challenges

- NDMC established after 2004 tsunami – coordinates all disaster related activities
- Strategic National Action Plan for Disaster Risk Reduction and Climate Change Adaptation 2010 to 2020
- The plan address 4 major areas
 1. Enabling environment for good democratic governance
 2. Empowered and capable communities
 3. Resilient communities with access to technology, knowledge and other resources
 4. Risk-sensitive regional and local development
- Strategic actions are taken as a priority with the limited capacity



Carbon Neutrality

- Low carbon development and green growth are key priorities
- Carbon neutral policy mainly encompasses reduction of carbon emissions
- Emission stands at 0.001% but increases compared to a population of over 300,000 people
- Maldives setting an example to the world
- Road map for carbon neutrality is under development



Programs towards low carbon development

- SREP - US\$ 138 million investment targeted to generate
 - 100 % electricity of 10 islands from renewable sources,
 - 30 % of total energy of 30 islands from renewable sources
- JICA assisted Male' urban area program
 - more than 1% generates from solar energy
- INI Airport to start a BOCM program - deep seawater cooling
- Other programs
 - energy saving of building, duty exemption for renewables, Presidents recognition awards for resorts
- Spends huge amount on importing oil
 - 35% of GDP and accounts US\$ 474 million annually



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Thank you