Maldives Meteorological Service
Republic of Maldives

The Role of Space Technology in Strengthening Nature-Based Solutions

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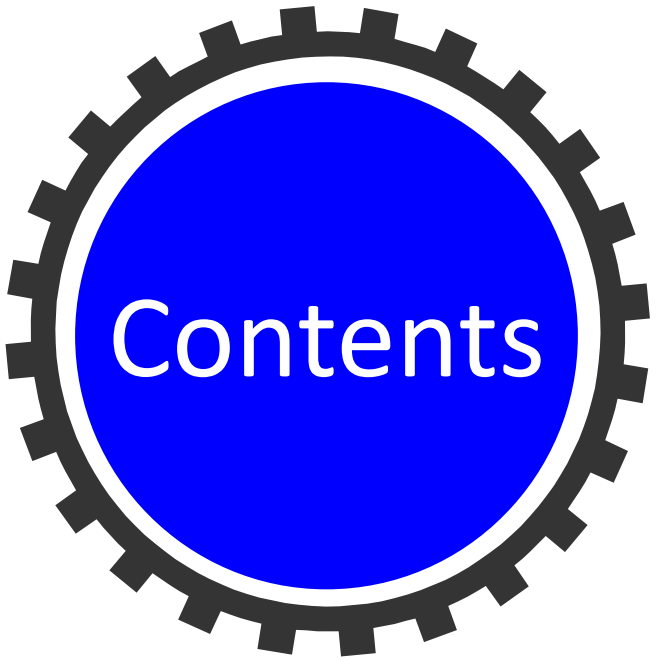


Space-based monitoring to enhance preservation & restoration of ecosystems

Effective strategies for translating satellite-derived insights into enforceable policies to balance environmental protection with economic growth

Partnerships between space agencies, private sector actors & local communities strength nature based disaster management

Role of emerging technologies play in evaluating nature-based solutions for climate resilience

Biggest challenges faced in the role of space technology in strengthening nature-based solutions

Personal introduction

Abdulla Hafiz Abdul Sattar Ali (Maldives) working as an operational meteorologist in the Maldives Meteorological Service (MMS). Main tasks are to monitor, analyse and disseminate weather forecast and weather related warnings to the stake holders. In addition, conduct in-house meteorological related trainings, along with that, work as a weather broadcaster in TV and radio.

My research interest is in the field of enhancing severe weather Nowcasting over the Maldives using satellite applications. Currently located in China, Beijing as a senior research fellow under the "China Belt and Road Initiative Meteorological Scholar Program" . My research work focuses on atmospheric pollutant transport monitoring, marine meteorological analysis, and ocean environment inversion to address the Maldives' needs in meteorological and marine monitoring services.

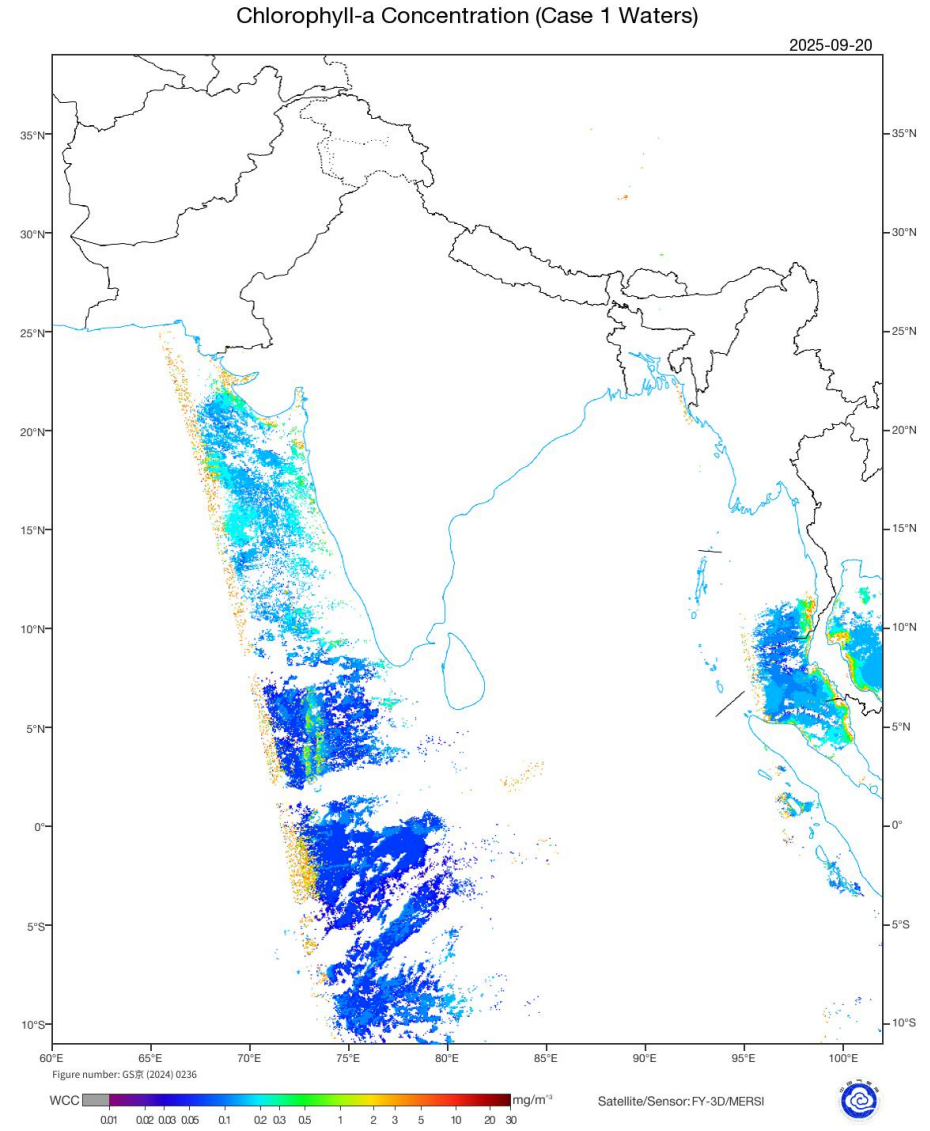
Space-based monitoring to enhance preservation & restoration of ecosystems

- Continues monitoring of the fragile ecosystems using space-based observations.
- Enhancement in the spatial resolution of space-based observations.
- Ecosystems such as mangroves, wetlands & coastal forests monitoring in the Maldives is limited due to technical and financial limitations.

Effective strategies for translating satellite-derived insights into enforceable policies to balance environmental protection with economic growth

- Developing new satellite-derived products for environmental monitoring.

- Translating satellite-derived products into meaningful ways to be used by individuals/communities to enhance their productivity, examples:
  - *Chlorophyll-a concentration product* (China, CMA)
  - *Ocean transparency product* (China, CMA)



Partnerships between space agencies, private sector actors & local communities strength nature-based disaster management

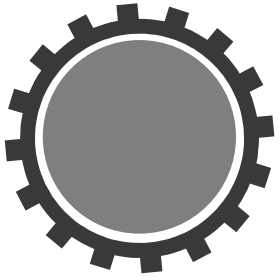
- Open platforms for continues monitoring of the ecosystems using space-based observations, example:
  - *Open source platforms for weather & climate monitoring from different agencies.*

- Basic knowledge based training programs for the local communities, examples:
  - **COMET-MetEd** Education and Training platform.
  - **Weather academy.**
  - **Open online courses** (University of Reading, UK)

Role of emerging technologies play in evaluating nature-based solutions for climate resilience

- AI-powered analytics are the future to handle huge satellite data sets.

- Small satellite platforms will have huge potential due to
  - *Technological innovation*
  - *Manufacturing lower cost*
  - *Individual tasking satellites*
  - *Lower obit for better spatial resolutions.*



Biggest challenges faced in the role of space technology in strengthening nature-based solutions

- Limited technical capacity in space technology in most of the countries.
- Open source satellite data sets have lower spatial resolution.
- Higher spatial resolution data sets are expensive.
- Type of nature-based solutions could be different for different countries. More research needs to be done to identify suitable solutions for individual countries.

Thank You

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