

SUMMARY OF THE WORKSHOP

SUSTAINING WHAT SUSTAINING US - ONE OCEAN, ONE
CLIMATE, ONE FUTURE - TOGETHER" ON THE
OCCASION OF "WORLD OCEAN DAY 2025

JUNE 09, 2025

- Prof. Dr. Vivek Gupta shared his visionary talk on World Ocean Day.
- He welcomed scientists, researchers, and guests of the workshop.
- He shared his concern about plastic pollution and carbon emissions.
- He focused on single-use plastic and the solution to plastic pollution.
- His presentation also focused on sustainability.

SUSTAINING WHAT SUSTAINING US - ONE OCEAN, ONE CLIMATE, ONE FUTURE - TOGETHER



Prof. (Dr.) Vivek Gupta
Amity University, Mauritius

SUSTAINING WHAT SUSTAINING US - ONE OCEAN, ONE CLIMATE, ONE FUTURE - TOGETHER

- Prof. Dr. Tanu Jindal talked about the Southern Ocean expedition. 45 scientists took part in this expedition.
- She discussed projects, domains, and different sustainable campuses of Amity University.
- We have many sophisticated Instruments like GC, HPLC, AAS, etc.
- Amity is developing a campus in Long Island (USA).
- She shared her views on the 10th Indian Scientific Expedition in 2017.
- She talked about the blue economy.



Prof. (Dr.) Tanu Jindal
Director, AIETSM
Amity University Uttar Pradesh

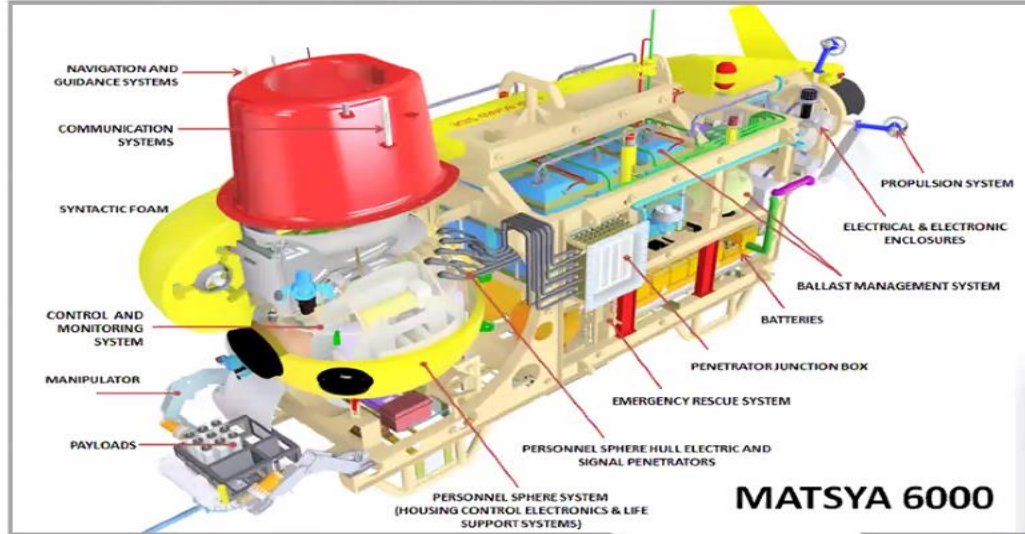
- Prof. Balaji Ramakrishnan presented challenges in marine technologies and the fathoms of NIOT.
- He shared his vision to develop reliable indigenous technologies, harvesting of non-living and living marine resources.
- He presented about the MATSYA 6000 voyage and Sagarpala.
- Samudrajivah (living resources), open sea fish case (North Bay), large-scale culture at seafront campus, hyperbaric culture systems, and deep-sea microbes were part of the presentation.

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Prof. Balaji Ramakrishnan, Director,
National Institute of Ocean
Technology (NIOT), Ministry of Earth
Sciences (MoES), Govt. of India

Matsya – Voyage to Deep Sea



MATSYA 6000

Dimensions: L- 9.8m, W-3.2m & H-5.1m
Air weight. : ~25 t
Total cost: ~320cr

Complex Components & Integration

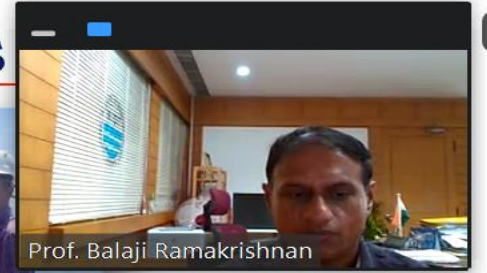
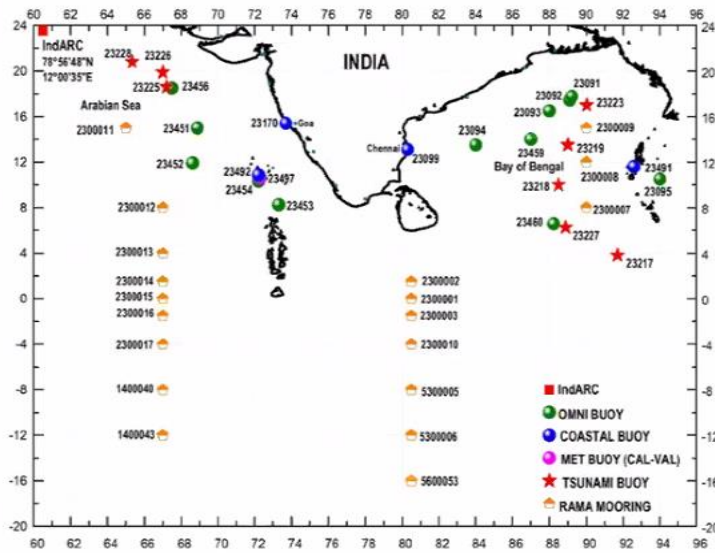
Materials, Syntactic, Steel/Ti...
Electronics, Sensors, Communication
Control systems, Payloads...
Life Support & Emergency...
Ballast, Variable buoyancy, trim...



Sagarapala – Ocean Observations

Comprehensive Operational Programs

Climate:- IndARC...
 Weather:- Drifters, Gliders, AUPD...
 Extreme:- Cyclones, Tsunami...
 Indigenous: STAB, acoustic release, sinker weight recovery (Arctic)



Recording

YouTube

You are viewing Prof. Balaji Ramakrishnan's screen

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Samudrajivah – Living Resources



Seaweed culture at Chidiyatappu Andaman



Large scale culture at Seafront Campus



Open sea fish cage- North Bay

Prof. Balaji Ramakrishnan

MBT

Biomass & Biofuel:-
Seaweed...

Fisheries:- open sea...
Deepsea:- seamounts,
hydrothermal vents...

Indigenous:
Hyperbaric collections,
storing and culturing

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Chat

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Q&A

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7

- Dr. Mitrasen Bhikajee congratulates the Amity team for organizing this wonderful event.
- He presented on advancing oceanographic research.
- He also focused on climate change, sea level rise, and cyclones.
- Dr. Mitrasen Bhikajee said that It is very difficult to continue the research work without the availability of research vessels.

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**Dr. Mitrasen Bhikajee, Chairman,
Mauritius Oceanography Institute**

- Dr. Anoop S. Mahajan presented “How does the Ocean Affect the Atmosphere”.
- He shared his views on the recent Indian Scientific Expedition to the Southern Ocean.
- Ocean-atmosphere exchanges are the main way through which the ocean affects atmospheric processes and vice versa.
- The ocean stores an estimated 91 % of the excess heat energy trapped in the Earth’s climate system by excess greenhouse gases.
- Oceans are the major sources of aerosols.
- Biological activities need carbon dioxide, and overall, oceans are the sink for carbon dioxide.
- Halogen compounds are responsible for several atmospheric processes, including ozone depletion and aerosol formation.
- His presentation’s major focus was on anthropogenic activities.
- Oceans are the major sources of sulphur.

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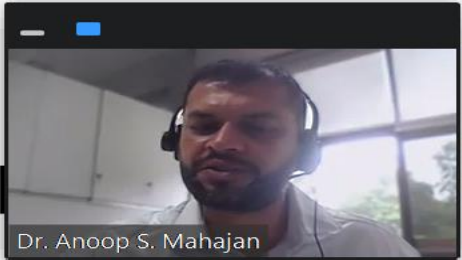
Dr. Anoop S. Mahajan, Scientist F,
Indian Institute of Tropical
Meteorology

Recording

YouTube


You are viewing Dr. Anoop S. Mahajan's screen

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Dr. Anoop S. Mahajan

Sign in



71% of the Earth

Surface of the Earth
by area and proportion

	km ² (million)	%
Pacific Ocean	165.95	32
Atlantic Ocean	91.65	17
Indian Ocean	70.56	14
Arctic Ocean	14.06	3
Southern Ocean & South China Sea	16.76	3
Oceania-Australia	9.00	2
Europe	10.18	2
Antarctica	14.00	3
South America	17.84	3
North America	24.47	5
Africa	30.27	6
Asia	44.58	9

71%
water

29%
land

sizemattersscience.wordpress.com

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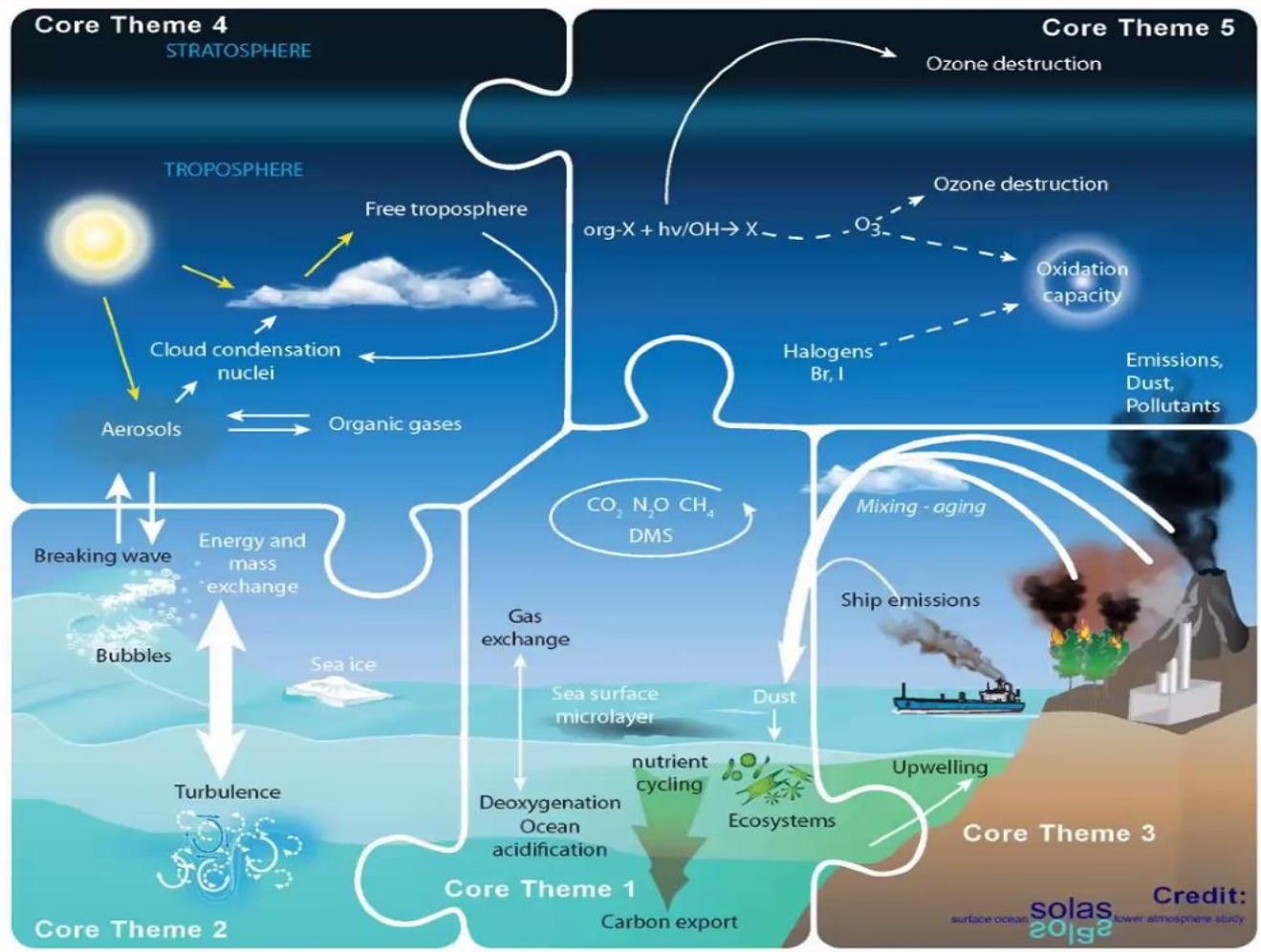
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How does the ocean affect the atmosphere



Surface Ocean-Lower

Ocean-Atmosphere exchange is the main way through which the ocean affects atmospheric processes, and *vice versa*

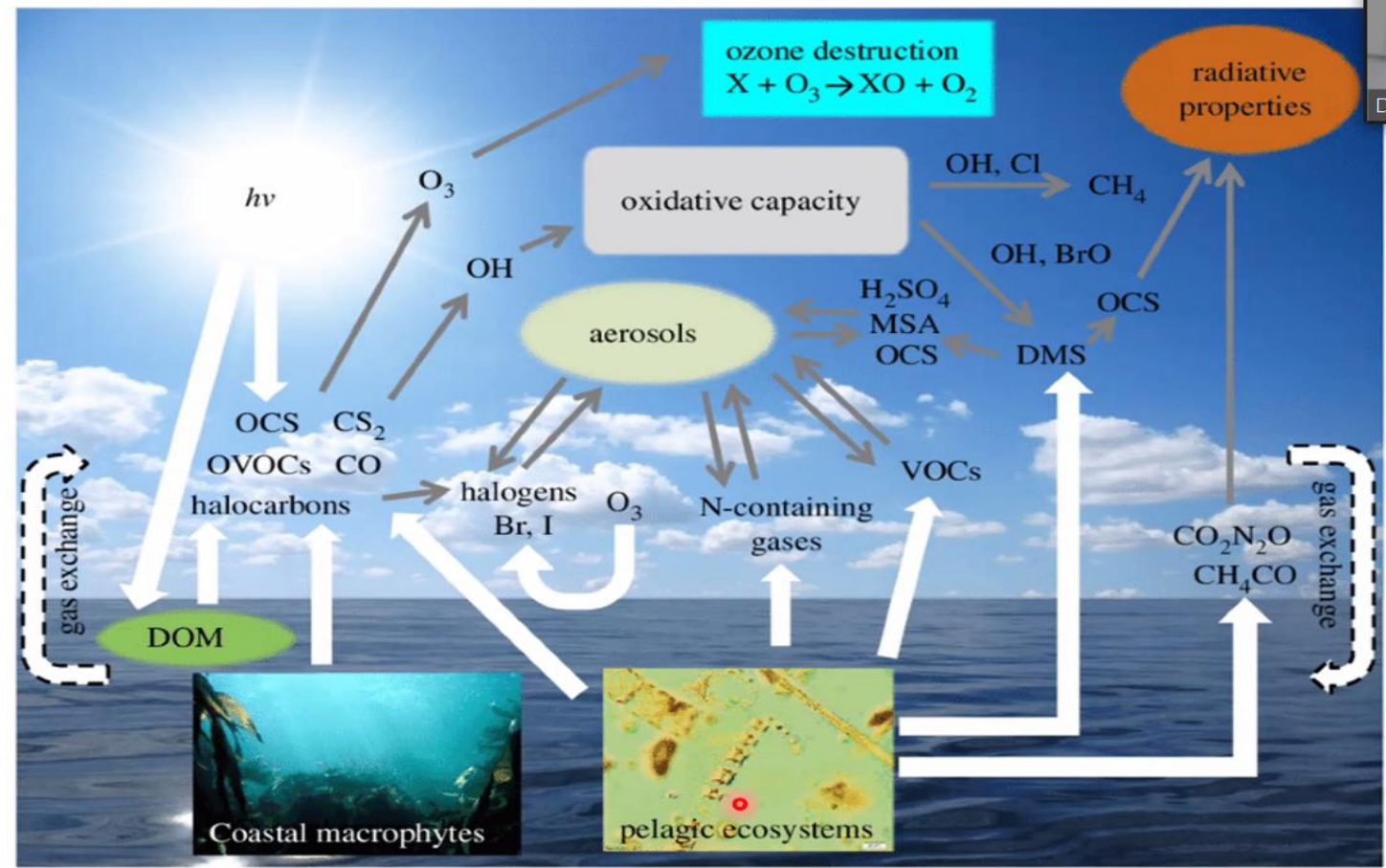
This exchange takes place through:

- 1) Energy Exchange:
Heat and Radiation
- 1) Mass Exchange:
Both natural and anthropogenic aerosols, gases

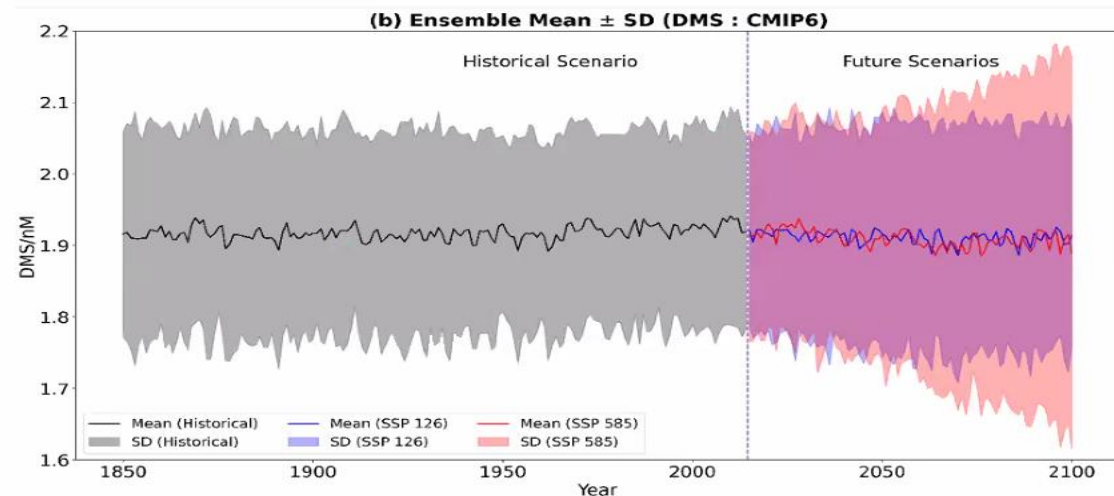
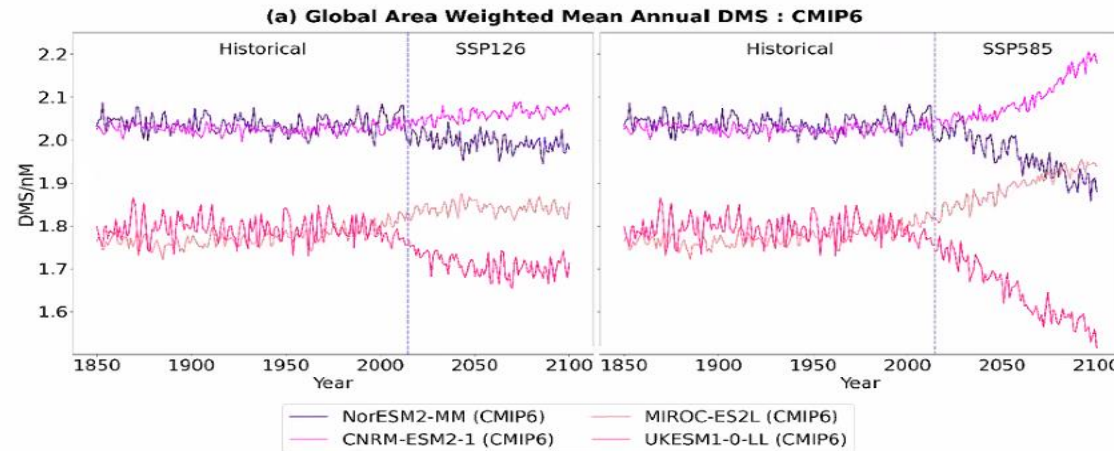
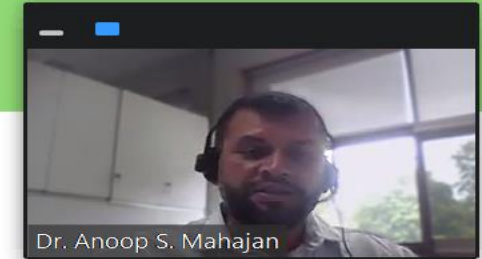


SOLAS Program

Trace gases – examples of other trace g

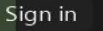


Future Change in emissions



Changes in DMS emission are not certain and models in the IPCC AR6 do not agree on the magnitude and sign!

Bock et al., Biogeosciences, 2021

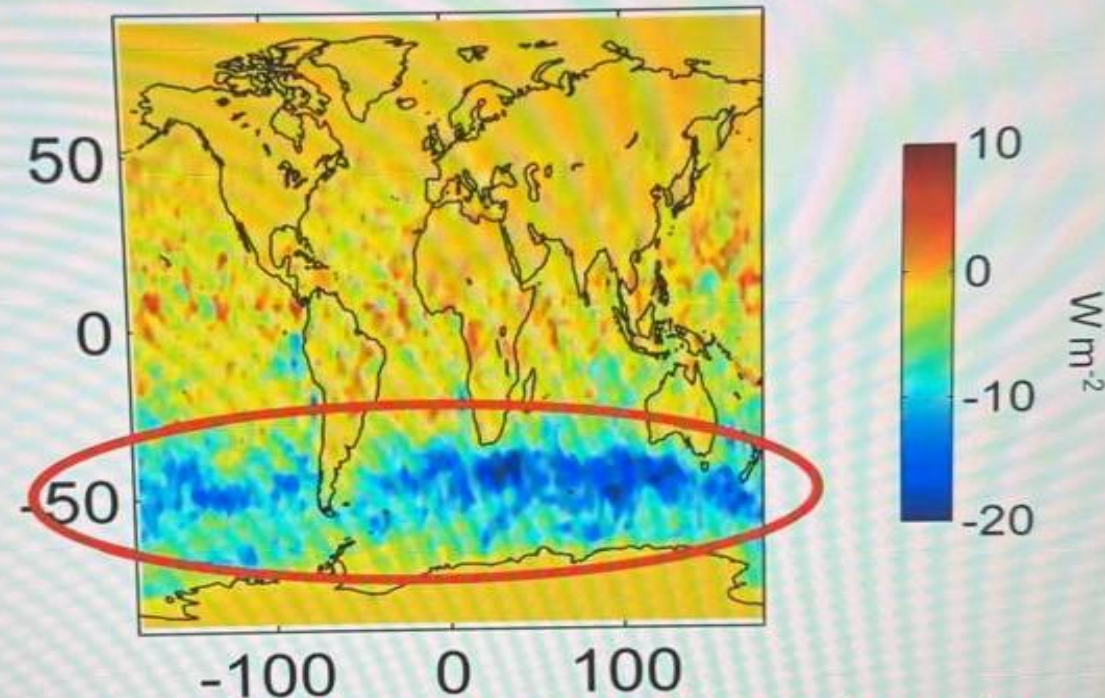


DMS – large radiative impacts

Radiative Forcing because of DMS : Annual mean -1

CO₂ relative to 1750: 1.68 (1.33-2.03) W m⁻²

Mahajan et al., JGR, 2015



Computed using a long-term emission inventory

10% difference in the Southern Ocean can cause large biases

Dr. Anoop S. Mahajan

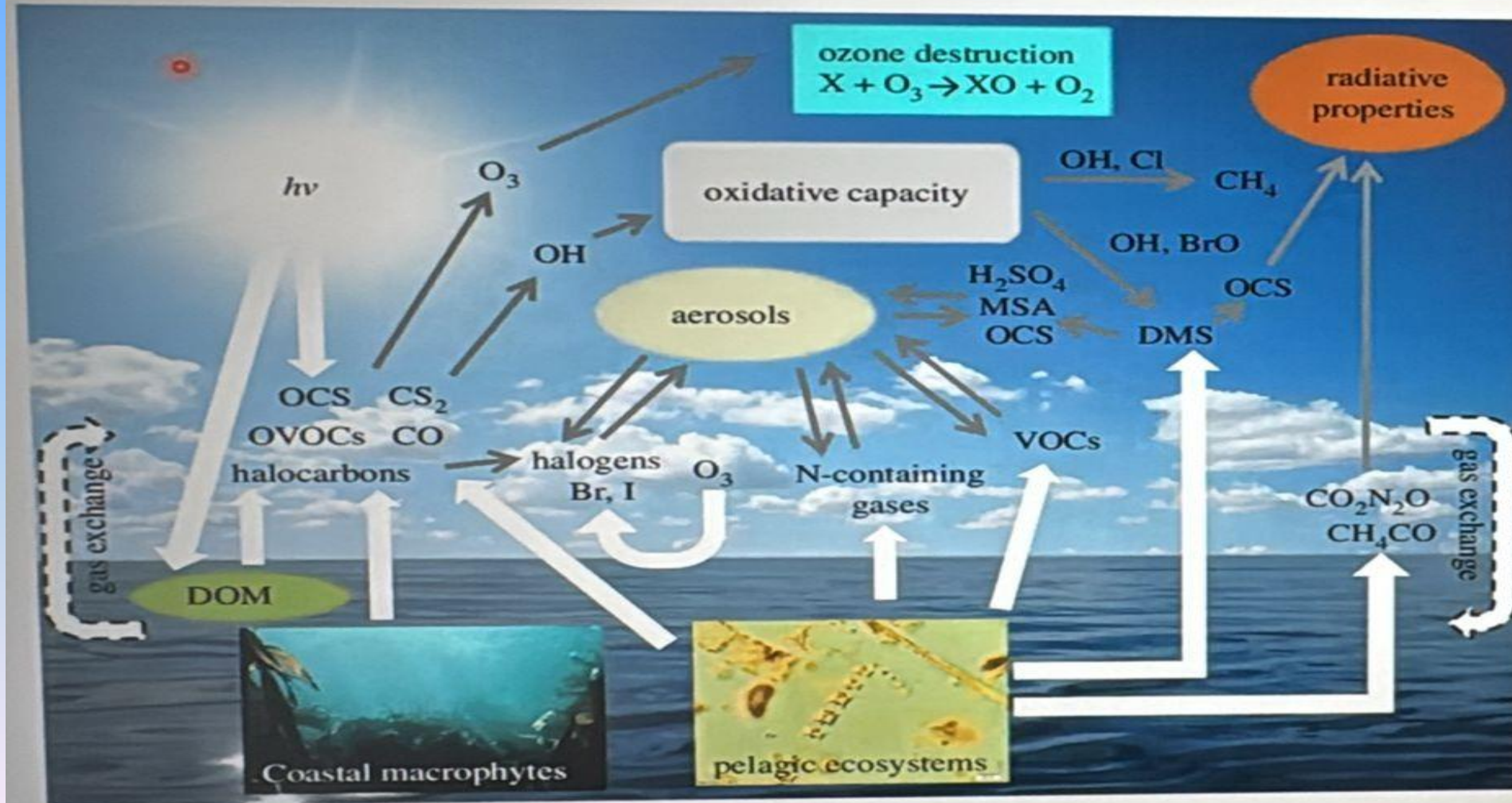
Prof. (Dr.) Tanu Jindal

Krishna Jaiswal

Dr. Abhishek Ch...


Dr. Abhishek Chauhan

Trace gases – examples of other trace gases






Dr. Anoop S. Mahajan



Prof. (Dr.) Tanu Jindal

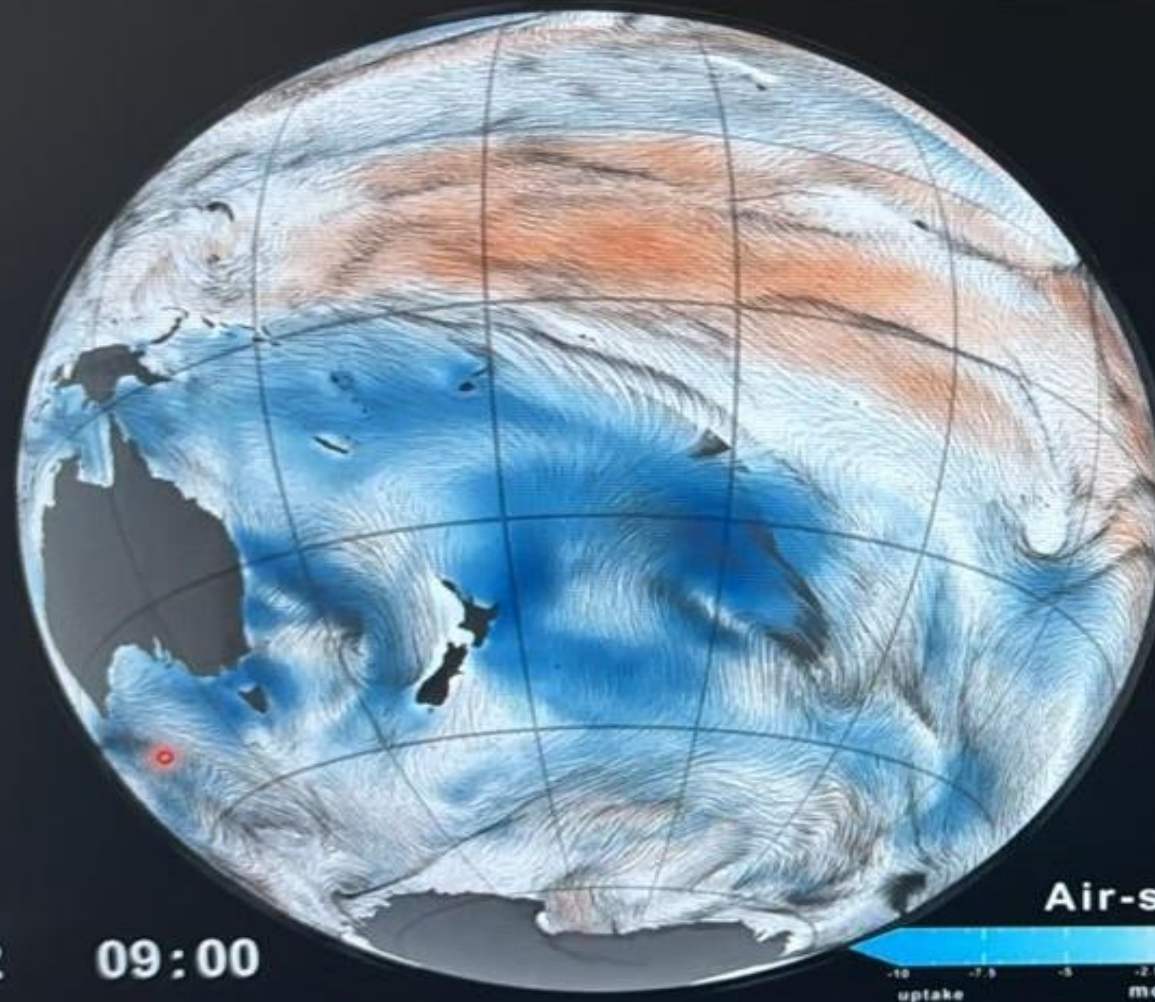


Krishna Jaiswal

Dr. Abhishek Ch...

Dr. Abhishek Chauhan

Trace gases – CO₂ exchange



17 Jun 2012 09:00



Dr. Anoop S. Mahajan

Prof. (Dr.) Tanu...

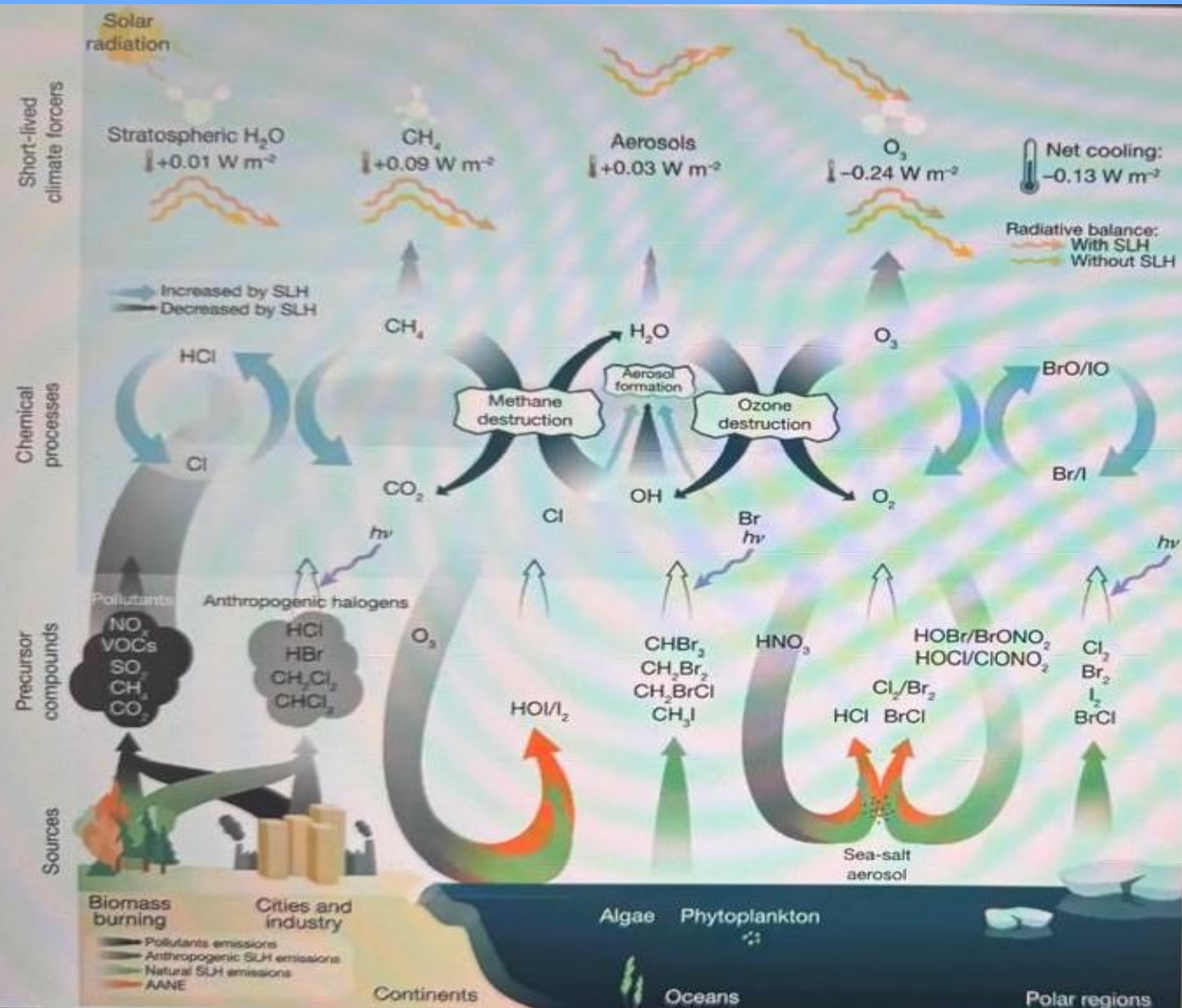
Prof. (Dr.) Tanu Jindal

Krishna Jaiswal

Krishna Jaiswal

Dr. Abhishek Ch...

Dr. Abhishek Chauhan



Net Radiative Forcing

Pre-industrial

-0.08 ± 0.05

Present day

-0.13 ± 0.03

RCP 6.0:

-0.09 ± 0.01

RCP 8.5:

-0.10 ± 0.01

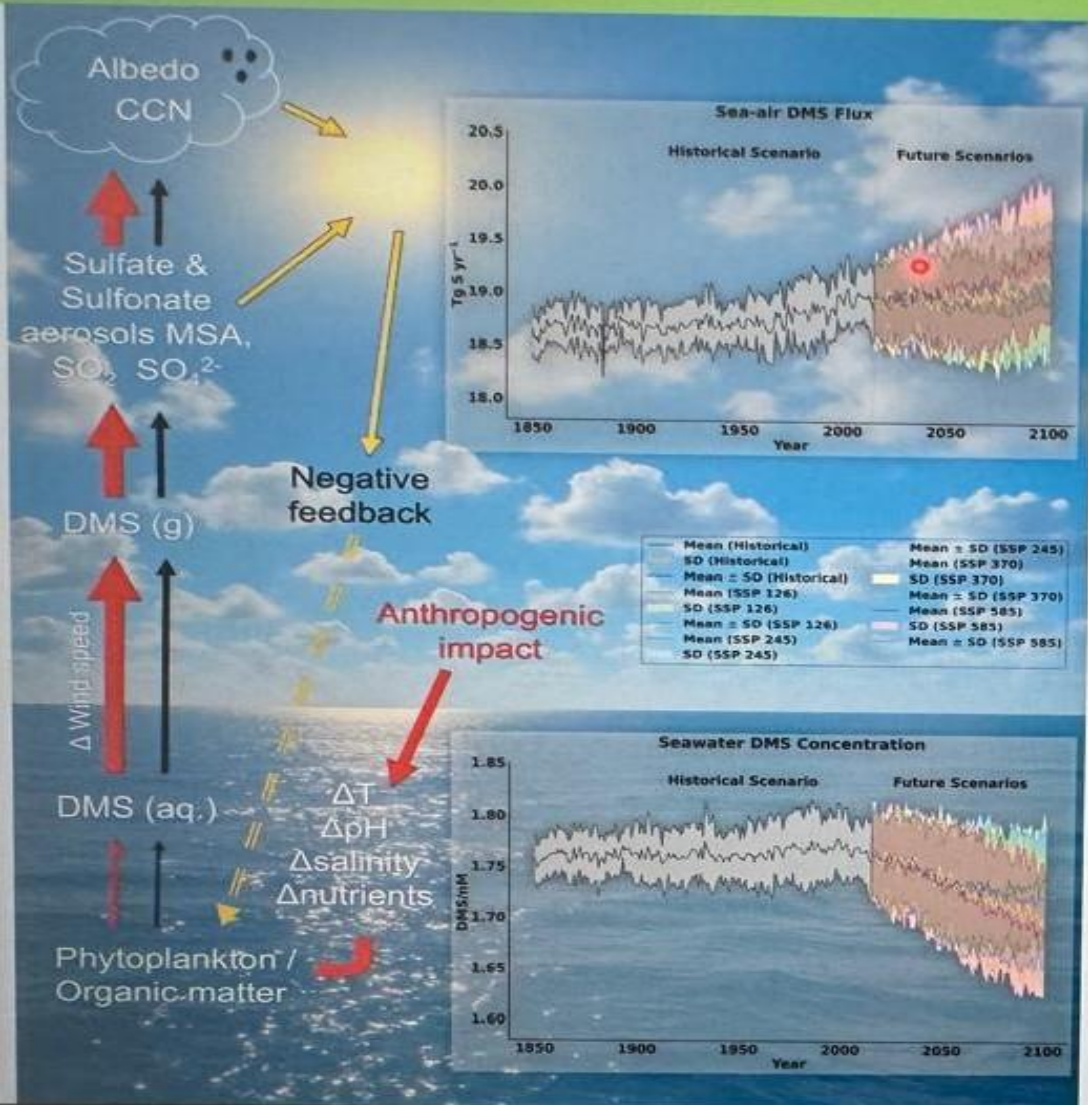
Dr. Anoop S. Mahajan

Prof. (Dr.) Tanu Jindal

Krishna Jaiswal

Dr. Abhishek Chauhan

Future Change in emissions



- This work reduces the large differences observed in previous studies – the model results are more consistent with observations.
- This not only increases our confidence in future changes in DMS emissions but also reduces the current uncertainty in climate-DMS feedbacks in the IPCC AR6.
- DMS concentrations in the ocean are expected to decrease under future warming scenarios.
- Emissions of DMS into the atmosphere are expected to increase due to rising surface wind speeds and surface temperatures.



- Dr. Daniel Marie presented his views on the theme of World Ocean Day.
- He focused on sustainability, policy, climate change, sea level, and ocean protection.
- Sustainable development, ocean acidification, natural products, and the management centre were part of the presentation.

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**Dr. Daniel Marie, Director, Mauritius
Oceanography Institute (MOI)**



- Mr. Mookhesswur Choonee thanked Amity University for the invitation.
- Oceans cover most of 71 % of the Earth's surface and play a vital role.
- Human activities push the marine ecological systems.
- Carbon sink, global climate change, submarines, oil spills, sea level rise, rising temperature, deforestation, overfishing, global warming, and sustainability were part of the presentation.

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**Mr. Mookhesswur Choonee,
Head of GOPIO International**

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Krishna Jaiswal

2 42°C Haze

Search



ENG IN

13:06 09-06-2025

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- Dr. Jagvir Singh presented his views on the theme of World Ocean Day.
- He mentioned the ocean as “Samudra Dev”.
- 75 scientists are working together at 836 places.
- More than 1.2 lakh volunteers are working.
- His presentation was focused on raising awareness of plastic pollution.
- Recycling of plastic was also a major point in his presentation.

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Dr. Jagvir Singh,
Scientist G, Ministry of Earth
Sciences (MoES), Govt. of India



- Dr. T. M. Balakrishan Nair presented “The Ocean We Need for the Future We Want”.
- A global framework to structure and boost scientific efforts at national and international levels to address global and regional sustainable development challenges. 
- He talked about the sustainability of the ocean economy.
- Oil spill, ocean modelling, marine pollution, and blue economy were the major points in the presentation.
- Digital ocean, capacity building, combating marine pollution, sustainable food, ocean hazards, and ocean literacy are the decade challenges.

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Dr. T. M. Balakrishan Nair, Director,
Indian National Centre for Ocean
Information Services (INCOIS)

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Decade Challenge 1: Combatting Marine Pollution

WORLD OCEAN DAY

United Nations Decade of Ocean Science for Sustainable Development 2021-2030

HYPOTHETICAL OIL DRIFT PATTERN (MT-X PRESS PEARL)

MT-X PRESS
Pamunugama
Colombo

SRILANKA

1200hrs_10June2021_IST

0 25 50 100 Nautical Miles

INCOIS

DEPTH (m) = 0
TIME = 06-JUN-2021 22:00

Current Magnitude

- Online Oil Spill Advisory (OOSA)
- INCOIS supports pollution monitoring through ocean modelling
- Integrated models for the dispersion of oil spills and effluents

Dr. T. M. Balakrishnan Nair

Slide 5 of 16 English (India)

1 cm of rain Wednesday

Search

Notes

69%

13:42 09-06-2025

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Ocean Decade Challenges - INCOIS Perspective

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Decade Challenge 4: Sustainable Ocean Economy

Decade Challenge 6: Climate Solutions


Decade Challenge 8: Ocean Hazards and Community Resilience

Decade Challenge 9: Digital Ocean


Slide 10, Slide 10 of 16

Decade Challenge 6: Ocean Hazards and Community

WORLD OCEAN DAY

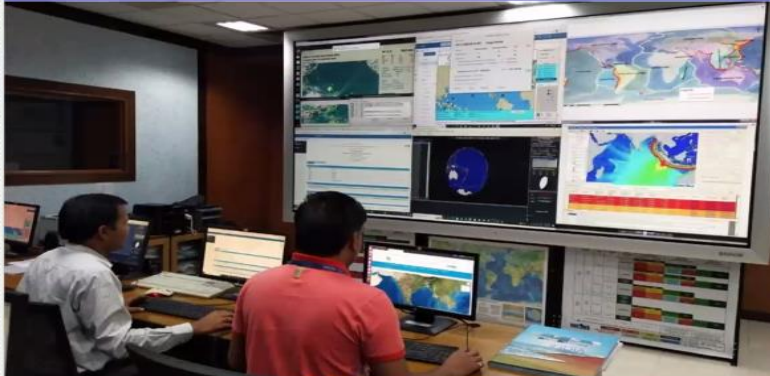


Decade Collaborative Centre
Indian Ocean Region




2021
2030
United Nations Decade
of Ocean Science
for Sustainable Development


Tsunami & Coastal Multi-hazard Warning S




Coastal Foundation - 3D Mapping



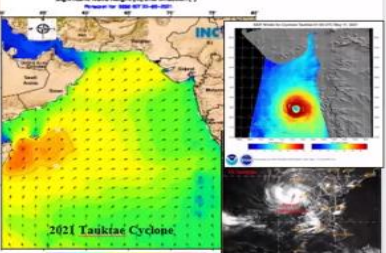
Tsunami Service Provider



Certificate of Recognition
The Community of Nollavali
Nollavali, Odisha, India




Tsunami Threat Map



2021 Tsunami Tsunami

- Tsunami and Storm Surge Early Warning Services
- Probabilistic Tsunami Hazard Mapping and Evacuation Planning
- UNESCO-IOC Tsunami Ready Programme implementation



Dr. T. M. Balakrishnan Nair

Slide 10 of 16

English (U.S.)

Notes Give Feedback to Microsoft

90%

Leave

- Hon'ble Kaviraj Sharma Sukon congratulates the organizer team of the workshop and presents his views on the theme of World Ocean Day.
- Plastic pollution, financing projects, and sustainability were the major points of the presentation.

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Hon'ble Kaviraj Sharma Sukon,
PFHEA
Minister of Tertiary Education,
Science and Research, Republic of
Mauritius

zm Zoom Webinar

Recording

YouTube

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Dr. The Honourable Kaviraj Sharma Sukon, PFHEA

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Q&A

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3

ENG IN

13:55

09-06-2025

- Dr. W. Selvamurthy congratulates the organizer team of the workshop and presents his views on the theme of World Ocean Day.
- He thanks Amity Mauritius for organizing this workshop with Amity Noida.
- He also thanks all speakers.








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**Dr. W Selvamurthy, President, ASTIF
& Chancellor, Amity University
Chhattisgarh**

Dr. Abhishek Ch... Krishna Jaiswal Mr. Mookhessw... Dr. T. M. Balakri... Dr. Daniel Marie Dr. Anoop S. M...

 Dr. Abhishek Chauhan Krishna Jaiswal  Mr. Mookhesswur Cho...  Dr. T. M. Balakrishnan ...  Dr. Daniel Marie  Dr. Anoop S. Mahajan



 Dr. Aseem Chauhan



 Prof. (Dr.) Tanu Jindal



 Jagvir Singh



 Prof. Vivek Gupta Ramnarain

Dr. Abhishek Ch...

Dr. Abhishek Chauhan



Jagvir Singh



Prof. (Dr.) Tanu Jindal

Krishna Jaiswal

Krishna Jaiswal

Mr. Mookhessw...

Mr. Mookhesswur Cho...

Dr. T. M. Balakri...

Dr. T. M. Balakrishnan ...



Dr. Abhishek Ch...

Krishna Jaiswal

Dr. T. M. Balakri...

Dr. Abhishek Chauhan

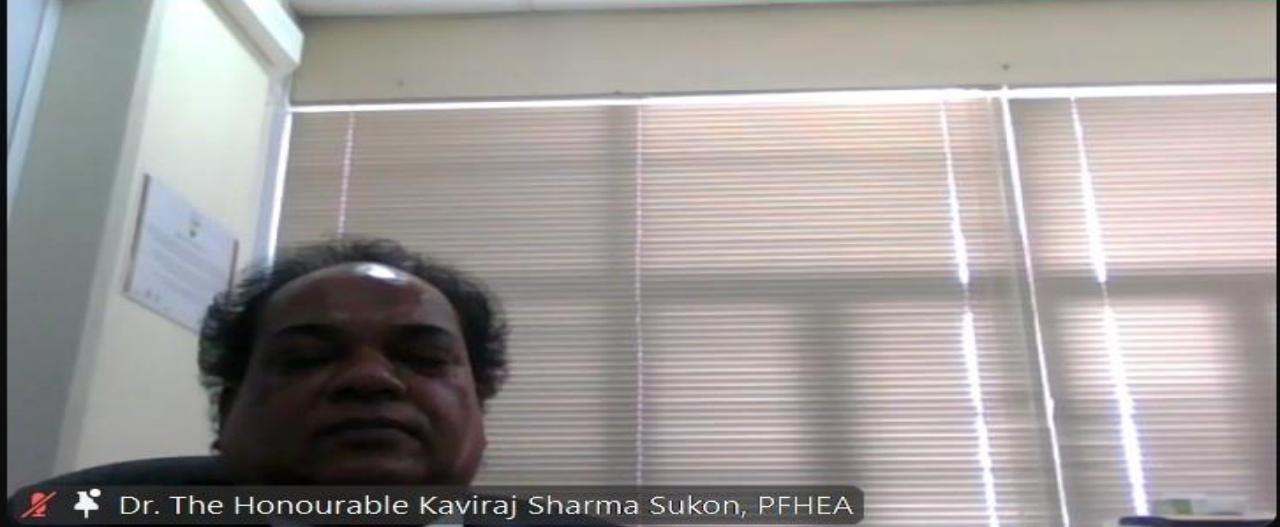
Krishna Jaiswal

Dr. T. M. Balakrishnan ...

Prof. Vivek Gupta Ramnar...

Jagvir Singh

Dr. Mitrasen Bhikajee



Dr. Abhishek Ch... Dr. T. M. Balakri... Mr. Mookhessw... Dr. Anoop S. M... FPO Amity University

Dr. Abhishek Chauhan Dr. T. M. Balakrishnan ... Mr. Mookhesswur Cho... Dr. Anoop S. Mahajan FPO Amity University



Pin Prof. (Dr.) Tanu Jindal



Pin Dr. W. Selvamurthy



Pin Krishna Jaiswal



Pin Dr. The Honourable Kaviraj Sharma Sukon, PFHEA



Pin Dr. Daniel Marie



Pin Jagvir Singh



Pin Dr. Mitrasen Bhikajee



Pin Prof. Vivek Gupta Ramnarain



THANKYOU
