

## 3 Days Online Capacity Building Programme on **COASTAL DISASTER RISK REDUCTION AND RESILIENCE**

Jointly Organised by

**National Institute of Disaster Management (NIDM)**

Ministry of Home Affairs, Govt of India

&

**South Asian Institute for Advanced Research & Development (SAIARD)**

(An Autonomous Academic & Research Institution & Regional Capacity Building Centre of NMCG, Ministry of Jal Shakti & NIUA, Ministry of Housing & Urban Affairs, Govt of India)

on

**2 – 4 February, 2022 at 2.30 – 4.30 PM**

### .....Convenors.....



**Prof. Surya Prakash**  
Head, GMRD, NIDM



**Dr. B. R. Chowdhury**  
Chairman, SAIARD



**Dr. S. K. Dash**  
Sr. Scientist, NCCR,  
Ministry of Earth Sciences, GOI



**Maj. Gen. V.K. Naik**  
Former Sr. Consultant,  
NDMA, GOI



**Prof. Sugata Hazra**  
Professor,  
Jadavpur University

### .....Special Guest Speakers.....



**Dr. K. Samanta**  
IIT Delhi



**Ms Aparna Bera**  
Suresh Gyan Vihar University



**Mr. S. Gulzar**  
Faculty, SAIARD



**Mr. Kumar Abhinay**  
IIT Roorkee



**Dr. H. Kaur**  
NIDM, GOI



**Dr. R. R. Thakur**  
Odisha Space Application  
Centre, Odisha

### .....Speakers.....



**Mr. Arindam Ray**  
Director-Academic  
Affairs, SAIARD



**Ms. Antara Kundu**  
Project Executive, SAIARD



**Ms. Moonmoon Barman**  
Faculty, SAIARD

Day 1 : <https://youtu.be/erzLlBJY9h4>

Day 2 : <https://youtu.be/MQYR4Mt4AD8>

Day 3 : <https://youtu.be/aAo02yn56ZA>

**REGISTRATION LINK**

<https://training.nidm.gov.in/>



**Stay Protected  
from Corona**



Wear your Mask  
Properly



Follow Proper  
Hand Hygiene



Maintain Social  
Distancing



Get  
Vaccinated

## Concept note

The coasts are one of the highly dynamic parts of the earth surface. About half of the world's population (~3 billion people) lives within 200 kilometers of a coastline. Coastal areas have been attractive human settlements as these areas provide abundant marine resources, fertile agricultural land and possibilities for trade and transport. Coastal areas contain world's most sensitive ecosystem like mangroves, wetlands, coral reefs, dunes and beaches. The various natural hazards pertaining to coastal zones are hydro-meteorological disasters (cyclone, wind damage, storm surge, heat and cold waves, heavy rainfall, lightning, droughts, floods), geological disaster (earthquake, tsunami, coastal), biological disasters like epidemics and anthropogenic disasters like stampedes, oil spills and fires besides the potential technological, industrial, chemical and radiological disasters. Adverse climate change impacts and rapid unscientific developments with rise in population are likely to aggravate and magnify the incidences and impacts of these disasters. Hence, it is very important to understand the nature, dynamics, trends and scales of these disasters well for minimizing the risks and enhancing the resilience amongst the affected communities. The conference has been planned with this background in mind.

The 7516 km long coastline of India is threatened by many natural hazards resulting in the loss of life and property. About 40% of the total population of India lives within 100 km of coastline. Data for the period 1980-2000 shows that on an average, annually 370 million people are exposed to cyclones in India. Furthermore, India's coastline has already been affected by the sea level rise (SLR) that has been recorded at a rate of 2.5 mm per year since the 1950s. The east coast of India is more affected by the seasonal tropical cyclones in South West monsoon as well as in the return North East monsoon as compared to west coast. There are 13 coastal states/UTs encompassing 84 coastal districts which are affected by cyclones. Amongst them Andhra Pradesh, Odisha, Tamil Nadu and West Bengal and Puducherry (UT) on the East Coast and Gujarat state on the West Coast are more vulnerable to cyclone disasters as compared to other coastal states and UTs. The major multi hazards that threaten the eastern coast are; tropical cyclones, sea level rise, floods, coastal erosion, and storm surge. Some of the dreadful events that had catastrophic effects include the super cyclone of Orissa in the year 1999 devastated the coastal area of Paradip with storm surges penetrating up to 100 along the river Mahanadi causing extensive damage to human life and property, Indian Ocean Tsunami of 2004 caused loss of human life and damage on property to the coast of Tamilnadu. Similarly, recent cyclones such as Fani, Gaja and Hudhud as well as severe floods have caused massive devastation to its coastal states (Odisha, Andhra Pradesh, Tamil Nadu and Kerala). The August 2018 floods in Kerala, for example, number of completely and partially damaged houses were 2,632 and 11,223, damage to permanent crops was 881 (INR crore), and overall 435 km of roads (179 km of SH & 256 km of MDR) are fully damaged. The total recovery needs of the State were estimated at INR 31,000 crore (USD 4.4 billion), National Conference on Coastal Disaster Risk Reduction and Resilience (CDRR&R)-2020/Background 2 according to the Post Disaster Needs Assessment (PDNA) jointly conducted by the Kerala Government, UN Agencies, World Bank and European Commission. Similarly, the April 2019 cyclone Fani damaged 3.62 lakh houses (2.96 lakh in rural and 66,040 in urban areas), and 100,880 lakh hectare of agricultural land. The assessment estimated the total damage to be worth INR 16,465 crore (USD 2,352 million) and total loss to be worth INR 7,712 crore (USD 1,102 million). The estimated recovery needs are INR 29,315 crore (USD 4,188 million). Studies and the damage assessment report indicate that it will take the coastal states about 5 to 10 years to rebuild and recover. Consequently, there has been a dramatic decrease in the casualty count: over 9,887 in 1999 (IMD, 2000); 64 in 2014 due to cyclone Hudhud (Parliamentary Standing Report-195); and 64 in 2019 due to cyclone Fani (UNICEF, 2019). However, coastal states are facing significant challenges in rebuilding the critical infrastructure lost and damaged, and in recovering from the consequent disruptions caused by disasters. In order to reduce the impact of coastal disasters, Government of India has taken up major projects including National Cyclone Risk Mitigation Project by National Disaster Management Authority (for 13 cyclone prone States and Union Territories (UTs)) and Multi-hazard Vulnerability Mapping by Ministry of Earth Sciences. The projects have the objective to make infrastructure disaster resilient, in harmony with conservation of coastal ecosystems. In India, about 129 institutions are currently working on the ocean and marine related issues.

## **Aim**

The aim of this training programme is to work in the following directions

- To promote the use of coastal risk analysis techniques to guide loss reduction efforts at the State and Local levels.
- To play a vital role in evaluating methods, setting standards, and advancing procedures and guidelines for coastal hazard maps and assessments.
- To provide tools for coastal hazards mitigation and promote basic research on monitoring techniques and aspects of coastal process mechanics.
- To improve education, training and awareness of coastal hazards and mitigation options for decision-makers, professionals, and the general public.
- To integrate and mainstream coastal risk management with development and climate change in a multi-hazard perspective involving interdisciplinary cross-sectoral partnership approach.
- To produce the implementation and management plans that will provide the practical basis for an effective national strategy that can be applied at local levels.
- To support advocacy, policy, guidelines and plans for coastal risk management at different levels among various stakeholders
- To develop workable partnerships with States, District and Local Level Governments and Non-Governmental Organizations as well as with professionals and other stakeholders.

## **Objectives**

- Define the terms/concepts in coastal risk management and provide basic information about coastal
- Describe coastal scenario and mitigation strategy with multi-hazard perspective in state
- Characterize/identify coastal indicators/precursors and related factors affecting coastal occurrence and extents
- Identify the needs, gaps and strategies in coastal databases, inventory & mapping
- Understand the Coastal Hazards, Vulnerability and Risk Assessment, Zonation, Prioritization and Communication for Coastal Risk Reduction
- Learn options for minimizing coastal risks – avoidance, prevention, mitigation (including structural and non-structural measures), preparedness, and response
- Assess coastal damages and losses in a systematic way
- Inform about planning, policy and guidelines on coastal risk management as well as roles/responsibilities/SOPs of stakeholders
- Understand cross-sectoral issues like administrative, technical, legal, financial, and social etc.
- Enlist and use Indian Standards and Codes related to coastal

- Discuss about the possible applications of technology, local resources/ skills, and traditional wisdom in coastal management – Community Based Coastal Risk Management
- Demonstrate through an exercise the process of coastal risk management
- Carry out mock drills for public safety against coastal
- Provide a forum for networking, linkage and coordination among different stakeholders for exchange of ideas, information, knowledge, experiences and resources on coastal risk management

## **Target Groups**

The target group for this programme would be senior officers from departments of Revenue, Disaster Management, Geology and Mines, Geological Survey of India, Town Planning, Public Works Department, Border Roads Organization, Irrigation and Flood Control, Rural and Urban Development, Hydel Sector, Building and Housing Department, State and District Development Authorities, NDRF, Police and Civil Defence, Fire Services, Environment & Forest, Roads and Bridges, Watershed Management, State Science and Technology Council, State Remote Sensing Application Centres, Professionals, and Research, Academic and Community organizations/Public Representatives etc.

**Registration Fees:**NIL

## **Learning Methods**

Online Meeting platform will be used for this programme. All the participants are requested to install “**GOOGLE MEET**” application in your mobile or desktop. The online training would be conducted through power point presentation by the speaker/experts. Lecture recordings will be provided to all the participants.

## **Application Procedure**

Participants have to register through the given NIDM Training Portal [training.nidm.gov.in](https://training.nidm.gov.in) to get the meeting links for the training program.

**Meeting Platform:**Google Meet

## **Feedback and Evaluation**

Before end of the programme, the participants will be provided with online evaluation form in a group. Evaluation form is mandatory for all the participants to be filled.

## ABOUT THE INSTITUTIONS



**The National Institute of Disaster Management (NIDM)** was constituted under an Act of Parliament with a vision to play the role of a premier institute for capacity development in India and the region. The efforts in this direction that began with the formation of the National Centre for Disaster Management (NCDM) in 1995 gained impetus with its redesignation as the National Institute of Disaster Management (NIDM) for training and capacity development. Under the Disaster Management Act 2005, NIDM has been assigned nodal responsibilities for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management. Both as a national Centre and then as the national Institute, NIDM has performed a crucial role in bringing disaster risk reduction to the forefront of the national agenda. The Institute believes that disaster risk reduction is possible only through promotion of a "Culture of Prevention" involving all stakeholders. The Institute works through strategic partnerships with various ministries and departments of the central, state and local governments, academic, research and technical organizations in India and abroad and other bi-lateral and multi-lateral international agencies. NIDM provides Capacity Building support to various National and State level agencies in the field of Disaster Management & Disaster Risk Reduction. The Institute's vision is to create a Disaster Resilient India by building the capacity at all levels for disaster prevention and preparedness.

**South Asian Institute for Advanced Research and Development (SAIARD)**, is an ISO 9001:2015 & MSME (Govt. of India) certified and NITI Aayog, Govt of India registered, premier academic and research institution, has been formed in Kolkata with a motto to spread the arena of research throughout the world particularly focusing on the major issues of the South Asian region.



SAIARD, a Research and Knowledge hub, has started its journey with a broad vision and objectives to promote research, advocacy, education and innovative ideas through publication, various outreach programmes, collaborations and partnerships for sustainable and cognitive development of this region. The basic purpose of this institution is to focus on the all-round academic development especially for our students to find out a platform for their future endeavours. For that purpose, SAIARD adopts a community based approach through various training, education, awareness and entrepreneurship programmes, enriching with the modern phase of technological innovations. SAIARD emphasizes more on policy based research interventions on multi-disciplinary issues related to environment and socio-economic aspects and sharing far-seeing ideas for the betterment of the society and humanity.

# THE TEAM

## Conveners

**Prof.Surya Prakash**

NIDM, Government of India

**Dr Biswajit Roy Chowdhury**

Chairman, SAIARD

## Programme Coordinators

**Mr Arindam Ray**

Director-Academic Affairs, SAIARD

**Ms Antara Kundu**

Project Executive, SAIARD

**Mrs. Moonmoon Barman**

Faculty, Geoinformatics Div., SAIARD

**Ms Jyoti Pasi**

Executive, SAIARD

**Mr Arindam P Gupta**

Executive, SAIARD

**TENTATIVE PROGRAM SCHEDULE WITH PROPOSED SPEAKERS LIST**

**Three Days Online Capacity Building Program on**

**COASTAL RISK MANAGEMENT THROUGH GEOSPATIAL ANALYSIS**

**2 – 4 February, 2022 at 2.30 – 4.30 PM**

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Day-1: 02.02.22		Time: [2:30 – 4:30 pm]
Time	Contents	
Moderator: Ms. Antara Kundu, Project Executive, SAIARD		
2:30 – 3:00 PM	<b>Inaugural Session</b> <ul style="list-style-type: none"> <li>Welcome Address by <b>Mr. Arindam Ray</b>, Director-Academic Affairs, SAIARD</li> <li>Keynote Address <b>Dr Biswajit Roy Chowdhury</b>, Chairman, SAIARD</li> <li>Special Address by <b>Prof. Surya Prakash</b>, NIDM, Govt of India</li> </ul>	
3:00 – 3:20 PM	Special Lecture by <b>Prof. S. Hazra</b> , Professor, Jadavpur University, Kolkata on <b>Sea level and associated changes in the Sundarbans</b>	
3:20 – 3:40 PM	Special Lecture by <b>Mr. K. Abhinay</b> , IIT Roorkee on <b>Coastal hazard evaluation: a review of current techniques and their application in a multi-scale study</b>	
3:40 – 4:00 PM	Special Lecture by <b>R. R. Thakur</b> , Odisha Space Application Centre on <b>Coastal Application using Geospatial technology</b>	
4:00 – 4:30 PM	Q & A Session	
	Vote of Thanks	

<b>Day-2: 03.02.22</b>		<b>Time: [2:30 – 4:30 pm]</b>
<b>Moderator: Ms. Bulu Basak, Faculty SAIARD</b>		
<b>2:30 – 2:45 PM</b>	Brief Introduction of 1 <sup>st</sup> day lecture by <b>Mr. Arindam Ray</b> , Director-Academic Affairs, SAIARD	
<b>2:45 – 3:15PM</b>	Special Lecture on <b>Disaster mitigation – Conceptual issues and practice</b> by <b>Major General Dr. V. K. Naik</b> , Former Sr. Consultant, NDMA, Government of India	
<b>3:15 – 3:45 PM</b>	Special Lecture by <b>Smt Aparna Bera</b> , Suresh Gyan Vihar University, Jaipur on <b>Coastal hazards and Climate refugee: A Case study of Ganga Sagar Island, West Bengal</b>	
<b>3:45 – 4:15 PM</b>	Special Lecture <b>Dr. K. Samanta</b> , IIT Delhi on <b>Coastal erosion and Mitigation strategies: A Case study of Sundarban Deltaic region</b>	
<b>4:15 – 4.30 PM</b>	Q & A Session	
	Vote of Thanks	
<b>Day-3: 04.02.22</b>		<b>Time: [2:30 – 4:30 pm]</b>
<b>Moderator: Mrs. Moonmoon Barman, Faculty, SAIARD</b>		
<b>2:30 – 2:45 PM</b>	Brief Introduction of 2 <sup>nd</sup> day lecture by <b>Mr Arindam Ray</b> , Director-Academic Affairs, SAIARD	
<b>2:45 – 3:10 PM</b>	Special Lecture by <b>Dr. H. Kaur</b> , National Institute of Disaster Management, GOI on <b>Coastal Risk Reduction &amp; Resilient : Govt. of India initiative</b>	
<b>3:10 – 3:30 PM</b>	Special Lecture by <b>Dr. S. K. Dash</b> , Sr. Scientist, NCCR, Ministry of Earth Sciences, Govt. of India on <b>Influence of environmental variables on the distribution and community structure of mesozooplankton in the coastal waters of the eastern Arabian Sea</b>	
<b>3:30 – 4.00 PM</b>	Special Lecture by <b>Mr Shahid Gulzar</b> , Faculty, GIS div., International Institute of Geospatial Science & Technology (IIGST), Kolkata on <b>Delineation of coastal hazard prone areas through geospatial techniques</b>	
<b>4:00 – 4.10 PM</b>	Q & A Session	
<b>4:10 – 4.20 PM</b>	Valedictory Address by <b>Prof.Surya Prakash</b> , NIDM, Govt of India	
<b>4.20 – 4:30 PM</b>	Vote of Thanks	

Website-<https://nidm.gov.in>; [www.saiard.co.in](http://www.saiard.co.in)

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