



Prime Minister's 10 Point Agenda on DRR: Agenda 8

3-day Capacity Building Programme on “LANDSLIDES RISK MANAGEMENT AND GEOSPATIAL TECHNOLOGY”



Monday - Wednesday,
15th - 17th November 2021,
02:30 pm - 04:30 pm

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

Patron



Maj. Gen. Manoj Kumar Bindal, VSM
Executive Director, NIDM

Chairs



Prof. Surya Parkash
Head, GMR Division, NIDM



Dr. B. R. Chowdhury
Chairman, SAIARD

Distinguished Speakers



Prof. V.K. Sharma
Vice-Chairman, SSDMA



Dr. S. K. De
Professor, NEHU



Dr. S. Dayal
Director, CDMP, SAIARD



Dr. B. Mahalingam
Asst. Prof., CUK



Dr. B. Bera
Asst. Prof., SKB University



Dr. K. Bhusan
NESAC, Govt. of India



Dr. Harjeet Kaur
Junior Consultant, NIDM



Dr. Raju Thapa
Junior Consultant, NIDM

Coordinators & Moderators



Mr. Arindam Ray
Director-Academic Affairs, SAIARD



Ms. Antara Kundu
Project Executive, SAIARD



Mr. Anil Kathait
Junior Consultant, NIDM

LIVE ((to)) **YouTube**
STREAMING

Day 1: https://youtu.be/0se_uvoKX5Y

Day 2: <https://youtu.be/cedlfxKz7ds>

Day 3: <https://youtu.be/2q4hwGFMn78>

Organised by:

National Institute of Disaster Management (NIDM),
Ministry of Home Affairs, GOI

&

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)

**3 Days Capacity Building Programme on
LANDSLIDES RISK MANAGEMENT AND GEOSPATIAL TECHNOLOGY**

Jointly Organised by

National Institute of Disaster Management (NIDM)

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on

15 – 17 November, 2021 at 2.30 – 4.30 PM

Concept note

Landslides occur in all hilly terrains in response to a wide variety of terrain conditions and triggering processes like heavy rainstorms, cloudbursts, earthquakes, floods and haphazard human activities. As per an estimate more than 5000 people are buried alive under landslide debris and economic losses of the order of more than US\$ 4 bn are suffered every year globally (ICL, 2010). Continent-wise, Asia suffers the maximum damages/losses due to landslides and among the Asian countries, south Asian nations are the worst sufferers and even among south Asian countries India is one of the most affected by landslides. According to the spatiotemporal assessment of Global Fatal Landslide Database (GFLD) from 2004 to 2016 by Froude and Petley (2018), globally 55,997 people were killed in 4,862 distinct landslide events (excluding landslide events due to seismic activities). Asia, with a percentage of 75, tops the list of continents with the highest number of the landslide events. In India, nearly 15% of its territory is prone to various degrees of landslide hazard (GSI, 2001), frequently affecting the human lives, livelihood, livestock, living places, structures, infrastructure, and natural resources in a big way.

In addition to direct and indirect losses, landslides cause significant environmental damage, societal disruption and strategic concern. It is estimated that annually on an average about 300 lives are lost and costs the country an approximately Rs. 300 crores every year. Bansal and Mathur, 1976 reported that annually Rs. 350 millions are lost due to failure of transport and communication by the landslides. Bartarya and Valdiya, 1989 estimated that almost 50% of the landslides occur along the roads. Valdiya, 1987

reported that the incidences of landslides increase by 25 to 345 times due to road construction activities whereas Gupta (1990) estimated that each kilometer of road in hills require displacement of 40 to 80 thousand cubic metre debris. Froude and Petley (2018) reported that in India 28 percent of the total landslides are as a consequence of construction activities, most by any country followed by China with only 9 percent. Sometimes landslides occur as a consequence of other disasters like earthquakes, floods, cyclones, lightning, cloudburst, forest fires, dam/lake bursts etc. In such cases, landslide losses are normally included with the primary disaster and are not dealt separately.

With growing population, urbanization and human interventions in terms of developmental activities over unstable slopes, landslides pose an increasing risk to human lives, structures, infra-structures and environment. Changing climatic conditions like global warming, snow and glacial melting, erratic and uneven rains, extreme temperature conditions etc. are also adding to these risks to even unexpected areas. Large scale deforestation along with faulty management practices have led to high vulnerability to landslides in many regions of the country. Human activities relating to expansion on unsafe locations, unscientific mining, haphazard construction of roads, dams and river training works ignoring natural features contribute to increased intensity of landslides. The absence of large scale landslide hazard maps leads to people being caught unaware especially when the first time landslides strike.

As individual landslides usually affect limited areas and people, damage resulting from landslide hazards were not recognized as a problem of national importance and were not addressed on a national basis. The absence of coordinated national approach to mitigating the detrimental effects of landslides resulted in a reduced ability of the States and Local Government agencies to apply the important lessons learnt, often at considerable expense, as a result, the need for a national strategy was been strongly felt and worked upon by the National Disaster Management Authority through Guidelines on Management of Landslides and Avalanches (2009), National Landslide Risk Management Strategy (2019) and National Disaster Management Plan (2019). Strengthening the process of landslide assessment, investigation, mapping and management will have far reaching effects in reducing landslide losses.

Aim

The aim of this training programme is to work in the following directions to make the hilly terrains and coastal areas free of landslide disasters.

- To promote the use of landslide 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 landslide hazard maps and assessments.
- To provide tools for landslide hazards mitigation and promote basic research on monitoring techniques and aspects of landslide process mechanics.
- To improve education, training and awareness of landslide hazards and mitigation options for decision-makers, professionals, and the general public.
- To integrate and mainstream landslide 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 landslides 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 landslides risk management and provide basic information about landslides
- Describe landslide scenario and mitigation strategy with multi-hazard perspective in state
- Characterize/identify landslides indicators/precursors and related factors affecting landslide occurrence and extents
- Identify the needs, gaps and strategies in landslide databases, inventory & mapping
- Understand the Landslide Hazards, Vulnerability and Risk Assessment, Zonation, Prioritization and Communication for Landslide Risk Reduction
- Learn options for minimizing landslides risks – avoidance, prevention, mitigation (including structural and non-structural measures), preparedness, and response
- Assess landslides damages and losses in a systematic way
- Inform about planning, policy and guidelines on landslide 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 landslides
- Discuss about the possible applications of technology, local resources/ skills, and traditional wisdom in landslides management – Community Based Landslides Risk Management
- Demonstrate through an exercise the process of landslide risk management
- Carry out mock drills for public safety against landslides
- Provide a forum for networking, linkage and coordination among different stakeholders for exchange of ideas, information, knowledge, experiences and resources on landslides 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, Hydrel 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

To participate in the training programme, get yourself register at NIDM training portal (<https://training.nidm.gov.in/>) and enroll for the event. **It is mandatory to enroll in the NIDM training portal to be eligible for the certificate.** 80% attendance each day is also compulsory for the certificate.

Meeting Platform: Microsoft Team

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

Patron

Major General Manoj Kumar Bindal, VSM
Executive Director, NIDM, Government of India

Chairs

Prof. Surya Parkash
Head, GRM Division, NIDM, Government of India
&
Dr. Biswajit Roy Chowdhury
Chairman, SAIARD

Convener

Dr. S. Dayal
Faculty & Director, Centre for Disaster Management & Planning, SAIARD

Programme Coordinators

Mr. Arindam Ray
Director-Academic Affairs, SAIARD

Ms. Antara Kundu
Project Executive, SAIARD

Mrs. Moonmoon Barman
Faculty, Geoinformatics Div., SAIARD

Mr. Anil Kathait
Junior Consultant, NIDM

PROGRAM SCHEDULE

Three Days Online Capacity Building Program on
LANDSLIDES RISK MANAGEMENT AND GEOSPATIAL TECHNOLOGY
15 – 17 November, 2021 at 2.30 – 4.30 PM

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Day-1: 15.11.21	Time : [2:30 – 4.30 pm]
Time	Contents
Moderator: Ms Antara Kundu , Project Executive, SAIARD	
2:30 – 3:00 PM	Inaugural Session <ul style="list-style-type: none"> Welcome Address by Mr Arindam Ray, Director-Academic Affairs, SAIARD Keynote Address Dr Biswajit Roy Chowdhury, Chairman, SAIARD Special Address by Prof. Surya Prakash, Professor, NIDM, Government of India Inaugural Address Major General Manoj Kumar Bindal, VSM, Executive Director, NIDM, Government of India
3:00 – 3:20 PM	Keynote Lecture by Dr. V. K. Sharma , Vice-Chairman, Sikkim State Disaster Management Authority, Sikkim
3:20 – 3:40 PM	Special Lecture by Prof. Sunil Kr De , Professor, North Eastern Hilly University, Shillong on A Geomorphological investigation of Gurpisey Landslide in Eastern Himalayas, Namchi, South Sikkim
3:40 – 4:00 PM	Special Lecture by Prof. Biswajit Bera , Asst. Professor, SKB University, West Bengal on A Geotechnical Evaluation of the Sichey Landslide of Gangtok of SikkimHimalayas
4:00 – 4:30 PM	Q & A Session
	Vote of Thanks

Day-2: 16.11.21		Time : [2:30 – 4:30 pm]
Moderator: Mr. Anil Kathait, Jr. Consultant, GMR Div., NIDM		
2:30 – 2:45 PM	Brief Introduction of 1 st day lecture by Mr Arindam Ray , Director-Academic Affairs, SAIARD	
2:45 – 3:15PM	Special Lecture by S. Dayal , Faculty & Director, Centre for Disaster Management & Planning, SAIARD on Landslide hazard evaluation: A Review of Current Techniques and their Application in a Multi-scale Study	
3:15 – 3:45 PM	Special Lecture by Dr Harjeet Kaur , Junior Consultant, NIDM, Govt. of India on Landslide Risk Assessment – A Case Study	
3:45 – 4:15 PM	Special Lecture Dr. Kuntala Bushan Scientist, Department Of Space, Government of India, North Eastern Space Application Centre on Landslide Hazard Zonation Using RS & GIS Techniques	
4:15 – 4.30 PM	Q & A Session	
	Vote of Thanks	
Day-3: 17.11.21		Time : [2:30 – 4:30 pm]
Moderator: Mrs. Moonmoon Barman, Faculty, SAIARD		
2:30 – 2:45 PM	Brief Introduction of 2 nd day lecture by Mr Arindam Ray , Director-Academic Affairs, SAIARD	
2:45 – 3:10 PM	Special Lecture by Dr. B. Mahalingam Assistant Professor, Department of Geography, School of Earth Science Central University of Karnataka on Capability of LiDAR derived Parameters in Landslide Susceptibility Mapping	
3:10 – 3:30 PM	Special Lecture by Mr. Anil Kathait , Junior Consultant, NIDM, Govt. of India, Govt. of India on A Case Study of Kotrupi Landslide 2017 Himachal Pradesh	
3:30 – 4.00 PM	Special Lecture by Mr. Raju Thapa , Junior Consultant, NIDM, Govt. of India on Enhancing Resilience through LEWS: An approach to Disaster Risk Reduction	
4:00 – 4.10 PM	Q & A Session	
4:10 – 4.20 PM	Valedictory Address by Prof. Surya Prakash , NIDM, Govt of India	
4.20 – 4:30 PM	Vote of Thanks	

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