



International Workshop on **Geoethics with focus on Geohazards and Mining Disasters**



**Thursday, 14th October 2021
02:00 pm - 04:00 pm**

Organised by

National Institute of Disaster Management (NIDM)

Ministry of Home Affairs, Govt. of India

in collaboration with

**CSIR-Central Institute of Mining and Fuel Research and
International Association for Promoting Geoethics (IAPG)**

India Chapter

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CONTENTS

1. INTRODUCTION.....	2
2. OBJECTIVES	2
3. SUMMARY OF THE WEBINAR	2
4. KEY TAKEAWAYS.....	5
5. PARTICIPANT'S PROFILE	7
6. PROGRAMME SCHEDULE	7
7. Poster	8
8. LIST OF PARTICIPANTS	9

1. INTRODUCTION

Geoethics embrace the various dimensions of the relationship between human and the earth. Geoethics deals with the ethical, social and cultural implication of Earth Science research and practice, providing a point of intersection for geoscience, sociology and philosophy. It will promote the professional ethics amongst geoscientist through integrity, competence, dignity and devotion to service.

To celebrate International Geoethics Day, National Institute of Disaster Management (NIDM) Ministry of Home Affairs, Govt. of India in collaboration with Central Institute of Mining and Fuel Research (CIMFR) and International Association for Promoting Geoethics (IAPG) India Chapter organised International Workshop on “Geoethics with focus on Geohazards and Mining Disasters”, Thursday, 14th October 2021, 02:00 pm - 04:00 pm.

2. OBJECTIVES

The aim of the International workshop was to raise the awareness of the geoscience community and society as a whole about the importance of ethical, social and cultural aspects of geoscience knowledge, research, practice, education and communication.

3. SUMMARY OF THE WEBINAR

Inaugural Session



Dr. Vincent Cronin Professor, Geosciences Department, Baylor University in his opening remarks provided insights on International Association for Promoting Geoethics that was constituted in 2012. IAPG is an international, scientific, multidisciplinary platform, created to widen the discussion on ethical issues related to

the Geosciences. It is becoming an important space in which many geoscientists can share experiences, ideas, reflections and information on geoethical issues. IAPG has network of more than 2716 members in 129 countries. The sole ethical principle that has allowed science to exist is that the truth must always be conveyed. To protect public safety we need to follow the scientific community's ethical norms, standards, and best practises. Any engineering geologist's

ultimate client is society. The public's safety and well-being must be prioritised, and we must endeavour to adhere to sustainable development principles.

Prof. Surya Parkash Head, GMR Division, NIDM Geoethics in Geohazards and Mining Disasters. Our unethical behaviour will be deterred by ethics, and we will know what to do and what not to do in the correct sense. It will give us with a structure of support for our members. Scientists' ideas may differ, and they should be free to voice their own, but science has a



foundation, and we cannot make statements without verification and confirmation. We need to develop a set of concepts and rules to guide and assist our behaviour in a constructive way, so that our contributions serve society rather than hurt it. The majority of individuals conflate ethical standards with following social customs, religious convictions, and the law. Geoethics is concerned with the ethical, social, and cultural implications of Earth Science study and practise, and serves as a nexus for geology, sociology, and philosophy.

Deliberations



Dr. Gopal Dhawan Founder & Chairman Dr. Dhawan Academy of Geologist delivered a talk on Geoethics for tunnel investigation and risk management in Himalaya. Highlighting the issues related to tunnelling he said that conventional investigation provide limited understanding of the

ground and geology for most of the tunnel length is unknown. To reduce percentage of unknowns along tunnel route we need to improve investigation and adopt a pragmatic approach for risk assessment and risk sharing. The systematic investigation must establish perceived risks during construction of a tunnel but there are limitations for assessment of various risks. Adequate geological investigations and testing is essential for identification of potential geological and geotechnical risks. There is need to prepare risk management plan for difficult reaches. Provision for construction stage investigation for unknowns and for mid-course correction in contract.

Dr. S. K. Wadhawan, Director General (Retd.), GSI provided insights on geoethics and mining disasters. Dr. Wadhawan discussed critical mineral commodities through western civilization. Modern societies are dependent on miner-based products. Energy technology, information and communications technology,



GEOETHICS AND MINING DISASTERS

DR. SUDESH KUMAR WADHAWAN
Former Director General, Geological Survey of India
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consumer electronics, infrastructure, logistics and food production all increasingly rely on an ever-widening array of minerals and metals. Responsible mining demonstrably respects and protects the interests of all stakeholders, human health and the environment, and contributes discernibly and fairly to broad economic development of the producing country and to benefits local communities while embracing best international practices and upholding the rule of law. Bribery and corruption are global problems and complicity is not specific to developing nations. Promote energy savings and increase the use of renewal energy sources such as solar panels and wind to reduce carbon dioxide emissions. As mining is a major energy user, it needs to develop new technologies to improve its energy efficiency.



Dr. A. K. Verma Associate Professor, IITBHU Varanasi talked about the geoethics and geohazards and highlighted genesis of geoethics from Indian perspective. Geoethics consists of research and reflection on the values which underpin appropriate behaviours and practices, wherever human activities interact

with the Earth system. It deals with the ethical, social and cultural implications of geoscience knowledge, education, research, practice and communication, providing a point of intersection for Geosciences, Sociology, Philosophy and Economy. While discussing geoethical issues in landslide hazard zonation the speaker highlighted the causative and controlling factors for different types of landslides hazard been found to be different depending on the material involved in the movement as well as the failure process. Most of approaches use same factors and same methodology for landslide prediction. These kind of landslide hazard or susceptibility zonation maps cannot be used reliably by the planners, administrators, development agencies, communities and other stakeholders.

Mr. Anil Kathait Junior Consultant, NIDM

discussed ethics of disaster research. Ethics will deter our unethical behaviour and we will know what to do what not to do in a correct sense. In disaster research, we consider hazard vulnerability, capacity, risks, and strategies to remove or minimise susceptibility and disaster risks, as well as the impacts of disasters on communities and ecosystems, as well as ways to improve response and recovery times. Research into disasters can be the difference between life and death. It aims to save lives while also preserving our built environment and nature. Disaster research can be disciplinary, with each field focusing on a different type of disaster. On the other hand, the research might be multi-disciplinary, with geologists and engineers working together to find a solution for how to survive inside a building during an earthquake or how to increase infrastructure's resilience so that it can withstand any calamity. Policymakers, administrators, and local communities must all contribute to disaster research.



4. KEY TAKEAWAYS

- The sole ethical principle that has allowed science to exist is that the truth must always be conveyed.
- To protect public safety we need to follow the scientific community's ethical norms, standards, and best practises.
- Any engineering geologist's ultimate client is society. The public's safety and well-being must be prioritised, and we must endeavour to adhere to sustainable development principles.
- Our unethical behaviour will be deterred by ethics, and we will know what to do and what not to do in the correct sense.
- Scientists' ideas may differ, and they should be free to voice their own, but science has a foundation, and we cannot make statements without verification and confirmation.
- We need to develop a set of concepts and rules to guide and assist our behaviour in a constructive way, so that our contributions serve society rather than hurt it.
- The majority of individuals conflate ethical standards with following social customs, religious convictions, and the law.
- Geoethics is concerned with the ethical, social, and cultural implications of Earth Science study and practise, and serves as a nexus for geology, sociology, and philosophy.

- To reduce percentage of unknowns along tunnel route we need to improve investigation and adopt a pragmatic approach for risk assessment and risk sharing.
- The systematic investigation must establish perceived risks during construction of a tunnel but there are limitations for assessment of various risks. Adequate geological investigations and testing is essential for identification of potential geological and geotechnical risks.
- There is need to prepare risk management plan for difficult reaches. Provision for construction stage investigation for unknowns and for mid-course correction in contract.
- Modern societies are dependent on miner-based products. Energy technology, information and communications technology, consumer electronics, infrastructure, logistics and food production all increasingly rely on an ever-widening array of minerals and metals.
- Responsible mining demonstrably respects and protects the interests of all stakeholders, human health and the environment, and contributes discernibly and fairly to broad economic development of the producing country and to benefits local communities while embracing best international practices and upholding the rule of law.
- Bribery and corruption are global problems and complicity is not specific to developing nations.
- Promote energy savings and increase the use of renewal energy sources such as solar panels and wind to reduce carbon dioxide emissions. As mining is a major energy user, it needs to develop new technologies to improve its energy efficiency.
- The causative and controlling factors for different types of landslides hazard been found to be different depending on the material involved in the movement as well as the failure process.
- Most of approaches use same factors and same methodology for landslide prediction. These kind of landslide hazard or susceptibility zonation maps cannot be used reliably by the planners, administrators, development agencies, communities and other stakeholders.
- Research into disasters can be the difference between life and death. It aims to save lives while also preserving our built environment and nature.

5. PARTICIPANT'S PROFILE

The webinar on International Geoethics Day was joined by participants from all over the country. 118 participants attended the webinar on Cisco Webex Platform.

YouTube Link: https://youtu.be/5II_Am8ZnNQ

6. PROGRAMME SCHEDULE

Time	Dignitary/Resource Person	Title of Talk
Inaugural Session		
02:00-02:10	Dr. Vincent Cronin Professor, Geosciences Department, Baylor University	Special Address
02:10-02:15	Prof. Surya Parkash Head, GMR Division, NIDM	Keynote Address
Technical Session		
02:15-02:40	Dr. Gopal Dhawan Founder & Chairman Dr. Dhawan Academy of Geologist	Geoethics for Tunnel Investigations in Himalaya
02:40-03:00	Dr. S. K. Wadhawan Director General (Retd.), GSI	Geoethics and Mining Disasters
03:00-03:25	Dr. A. K. Verma Associate Professor, IITBHU Varanasi	Geoethics and Geohazards
03:25-03:35	Mr. Anil Kathait Junior Consultant, NIDM	Ethics of Disaster Research
03:35-03:45	Interactions, Discussions, Q & A session	
Valediction Session		
03:45-03:50	Dr. Autar Krishen Raina Sr. Principal Scientist, CSIR-CIMFR	Concluding Remarks
03:50-03:57	Prof. Surya Parkash Head, GMR Division, NIDM	Valedictory Address
03:57-04:00	Mr Anil Kathait Junior Consultant, NIDM	Vote of Thanks

7. Poster



Prime Minister's 10 Point Agenda on DRR: Agenda 5 & 8



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02:00 pm - 04:00 pm

Patrons



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



Dr. Pradeep K Singh
Director,
CSIR-CIMFR

Inaugural Dignitaries



Prof. Vince Cronin
Co-Chair, US Section, IAPG
Geosciences Department,
Baylor University



Prof. Surya Parkash
Head, GMR Division, NIDM
National Coordinator IAPG
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Distinguished Speakers



Dr. Gopal Dhawan
Founder & Chairman,
Dr. Dhawan Academy of Geologist

Dr. S. K. Wadhawan
Director General (Retd.),
GSI



Dr. A. K. Verma
Associate Professor,
IITBHU Varanasi

Mr. Anil Kathait
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Valediction Dignitary



Dr. Autar Krishen Raina
Sr. Principal Scientist, CSIR-CIMFR

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Dr. Neelratan Singh
Senior Scientist, CSIR-CIMFR



https://youtu.be/5II_Am8ZnNQ

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Chapter



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Stay Protected
from Corona



Wear your Mask
Properly



Follow Proper
Hand Hygiene



Maintain Social
Distancing



Get
Vaccinated

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