



भारत सरकार
GOVERNMENT OF INDIA
भारतीय भूवैज्ञानिक सर्वेक्षण
GEOLOGICAL SURVEY OF INDIA
केंद्रीय मुख्यालय
CENTRAL HEADQUARTERS



6TH OCTOBER
**INTERNATIONAL
GEODIVERSITY
DAY**
THE DIVERSITY
SUSTAINS THE LIFE



Report on

1st International Geodiversity Day, 6th October 2022

पहला अंतर्राष्ट्रीय भू-विविधता दिवस (६ अक्टूबर, २०२२)

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6th International Geoethics Day, 13th October 2022

एवं छठा अंतर्राष्ट्रीय भू-नैतिकता दिवस (१३ अक्टूबर, २०२२)

Celebrations

Organised by/ द्वारा आयोजित

GEOLOGICAL SURVEY OF INDIA

भारतीय भूवैज्ञानिक सर्वेक्षण

13-14 October 2022

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Report on 1st International Geodiversity Day, 6th October 2022 & 6th International Geoethics Day, 13th October 2022 Celebrations, held on 13-14 October 2022, GSI, CHQ

I. Executive Summary

Geological Survey of India (GSI), Central Head Quarters, Kolkata celebrated the 1st International Geodiversity Day & 6th International Geoethics Day during on 13-14 October 2022, GSI, CHQ.

This was a kickoff event under the aegis of Azadi Ka Amrit Mahotsav (to be concluded in August 2023)- celebrating & commemorating 75 years of Indian independence. The celebration revolves around the central theme, "Geotourism Potential of India and its Development".

On this occasion a two day programme was chalked out.

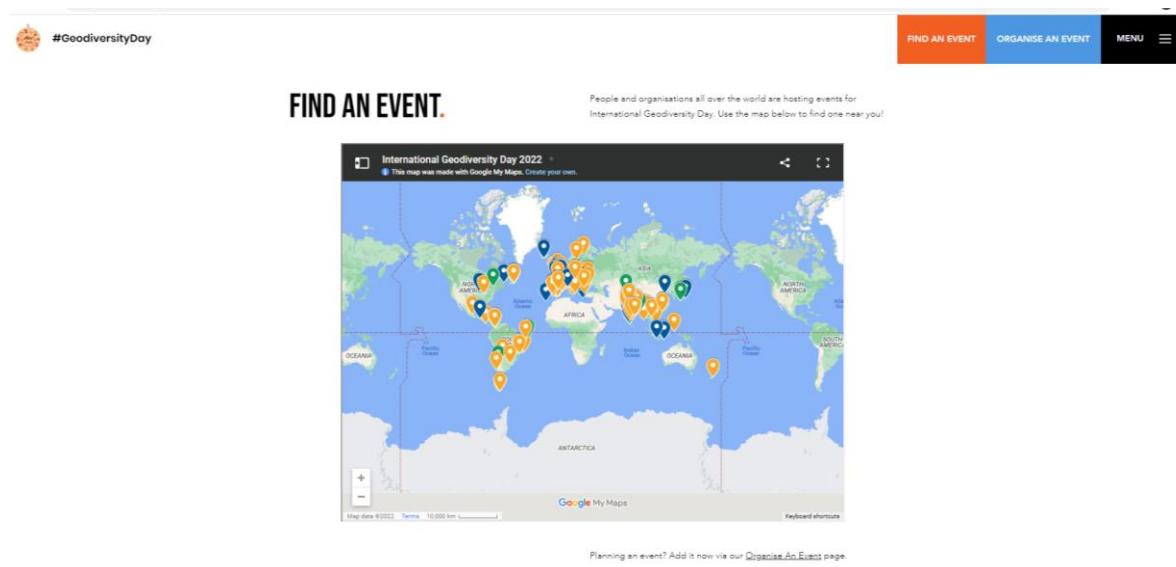
During the first day of the programme i.e., on 13th October 2022 about 27 nos. of students/ scholars and other dignitaries joined GSI in a heritage walk to Victoria Memorial and GSI gallery at Indian Museum. The scholars and students were apprised about the concept of Geodiversity and Makrana Marble, India which features in Global Resource Heritage Stone database recognised by International Union of Geological Sciences. Few of the excellent cultural landmarks of India viz., Tajmahal, Agra, Victoria Memorial, Kolkata are built with this marble or geoheritage stone. By visiting the geological galleries at Indian Museum the scholars and students also learnt about various aspects of geosciences. Both the visits were conducted with the objective of creating awareness, outreach and capacity building.

A workshop, titled "Nurturing Geodiversity: A Road to Sustainable Development" was held at the Conference Hall, Kyd Street, GSI, CHQ and online on 14th October 2022. A series of talks on various aspects of geodiversity, Geoheritage, Heritage Stones, Geotourism & Geoparks, Geoethics by eminent geoscientists from India were organised. More than 200 participants from India and abroad attended the programme online and offline. This was followed by a panel discussion. The programme was aimed at assessing the present status vis-s-vis chalking out a future road map for geosites and geotourism development in India. The august gathering attending the workshop unanimously agreed that legislation for conservation of geosites and development of geotourism in India is need of the hour. For furthering the cause it was also proposed by the stakeholders to formulate a national network involving them wherein GSI should take the lead as the national custodian [by charter of functions] for delineation and conservation/ maintaining geoheritage resources in the country.

Both the programmes were held under the chairmanship of Dr. S Raju, DG, GSI. The events were concluded successfully.

II. Introduction:

In recognition of the role of Geodiversity – the holistic representation of the earth's non-living materials and processes, both occurring at surface and earth's interior, UNESCO during its 41st General Conference in Paris with 193 member States attending it, on 22nd November 2021 proclaimed 6th October of each year to be celebrated as International Geodiversity Day. UNESCO Global Geoparks around the world Exceptional examples of geodiversity are preserved in. This proclamation was in recognition of the vital importance of geoscience in solving major challenges being faced by the humanity today. Accordingly, the 1st International Geodiversity Day (IGD) was celebrated around the world during October 2022.



Further, aimed at raising 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, the International Geoethics day which has close relevance in conservation of geodiversity was also scheduled on 13th October 2022.

The geoheritage/ geosites, geotourism sites depicts significant aspects of geodiversity and they are such destinations that need sustainable development and conservation for the sake of posterity. Geological Survey of India (GSI) with its illustrious legacy of 171 years on geoscience development in Indian subcontinent, has a major role to play in conserving the geodiversity of the country through its various initiatives. GSI has identified and declared thirty two (32) numbers of National Monuments/ Geoheritage sites in the past. These geotourism sites found its place in various publications, audio-visual media and social media handles. Presently, the process is underway to declare GSI as the nodal organisation for conservation/ maintenance of the Geoheritage sites of India. GSI has recently published the interactive map on geotourism sites (90 nos.) of India on its portal www.gsi.gov.in. Further, a wide array of rocks and fossil exhibits populate GSI'S museums across the country. Further, Geological Survey of India took a resolution for generating public awareness, outreach and conservation programme for the geosites/ geotourism sites of India under the aegis of Azadi ka Amrit Mahotsav, Celebrating & Commemorating 75 years of Indian independence (up to August 2023). The celebration revolves around the theme - "Geotourism Potential of India and its Development". As a kick-off event, GSI celebrated the **1st International geodiversity day and 6th international Geoethics day on 13-14 October 2022 at GSI, CHQ.**

GSI beheld the two day programme to be an ideal platform to deliberate on various aspects of sustainable and ethical development of earth resources and conservation of the geo-diversity.

III. Programme for Day 1, on 13.10.2022: Heritage Walk

The first day programme involved heritage walk to Victoria Memorial and GSI gallery at Indian Museum.

The celebration was inaugurated by Dr. S. Raju, Director General, GSI on 13.10.2022 FN at Conference Hall, 15 Kyd street, CHQ, Kolkata. Shri Satyabrata Guha, DDG, GSI (Retired) joined in as guest of honour and trip coordinator for the day. Twenty seven (27) numbers of students/ scholars from various schools/universities attended the programme with utmost enthusiasm.



Dr. S Raju, DG, GSI addressing the gathering on day 1 of the celebration

Dr. Snigdha Ghatak, Director, PSS- P&M 3 welcomed the gathering and invited Director General for his inaugural remarks. Dr.S.Raju, DG, GSI elaborated the students and the august gathering about the importance of the day, its societal implication and its connection with Geology. He suggested the students to keep up their spirit high and to work hard for achieving their goals in whatever field they wish to. He also informed the students regarding the new recruitments at GSI for the year 2023-24 and invited the aspirants to join the organization and work for the Nation with pride. This followed by the address of Shri M.M.Powar, ADG (ADSS), GSI and Shri Satyabrata Guha, (Rtd.) DDG, GSI to the students.

Short videos on GSI's history, Geotourism sites of India were played for the gathering to broad base their understanding on GSI and for the days' programme.

The ceremonial inauguration of the event took place before GSI, 29 J L Nehru building wherein 75 balloons (containing tricolour of Indian flag) were released by DG, GSI and Shri M M Powar, ADG, ADSS.

Subsequently, the students/ scholars and other dignitaries were taken to Victoria Memorial, located in Central Kolkata to participate in the (geo) Heritage walk.

Victoria Memorial, located in Central Kolkata was built between 1906 and 1921. Built in the memory of Queen Victoria, it stands in 64 acres of gardens and is now a museum under the control of the Ministry of Culture.



Inauguration of Day 1 programme by Dr. S Raju, DG, GSI & Shri M M Powar, ADG, ADSS

Built with Makrana Marble from Rajasthan which has bagged the prestigious tag of Global Heritage Stone Resource (GHSR) from International Union of Geological Sciences from India, the Victoria Memorial speaks for an array of processes of earth and modern cultural evolution. The GHSR designation is a useful title to promote the sustainable use of natural stones worldwide. GHSR recognition gives visibility to important Earth resources, present in almost all the heritage buildings and monuments whose conservation depends also on the intimate knowledge of the stone nature, geological frame, sources, production history, behaviour within the environment and conservation practices. The concepts of geosites, geoheritage sites, geodiversity, geotourism and ethical practices for nurturing the heritages of the country was presented during the walk by Shri Satyabrata Guha, DDG, GSI (Retired).



The heritage walk at Victoria Memorial

Shri Guha, also elaborated on the Makrana Marble, its geographical disposition and usage of the stone in various architectural splendours of India. The characteristic of the other potential heritage stone resources were also discussed in detail while taking a walk around the memorial. The gathering was also made aware about the importance of protecting these geo-cultural objects.



Shri Satyabrata Guha explaining the scholars/ students about geodiversity

During the post lunch session, the students were taken to the Indian Museum to show the rock specimens, fossils, minerals collected during the Field seasons by the GSDI officials. The scholars/ students visited Siwalik Fossil Gallery, Invertebrate Fossil Gallery & Rock and Mineral Gallery along with officers and staffs of Curatorial Division. The history of the Indian Museum was briefed to the students and they were exposed to various important and significant geological exhibits/ display of Vertebrates, Invertebrates and Plant fossils of different geological ages. The officers of GSI also explained the significance of different rock, minerals, ore samples and exhibits housed in Siwalik, Invertebrate and Rock & Mineral gallery of Indian Museum.



Visit to Indian Museum

The heritage walk to the memorial and Indian museum were completed successfully and feedbacks received from the students/scholars were very encouraging. The students/scholars expressed their appreciation, satisfaction and have indicated the usefulness of these sessions in future. Requests were received to conduct such programmes by GSI at frequent intervals with more nos. of students/ scholars onboard.

The day ended with a vote of thanks to the trip coordinator and the scholars/ students.

IV. LIST OF PARTICIPANTS FROM GSI (Day-1)

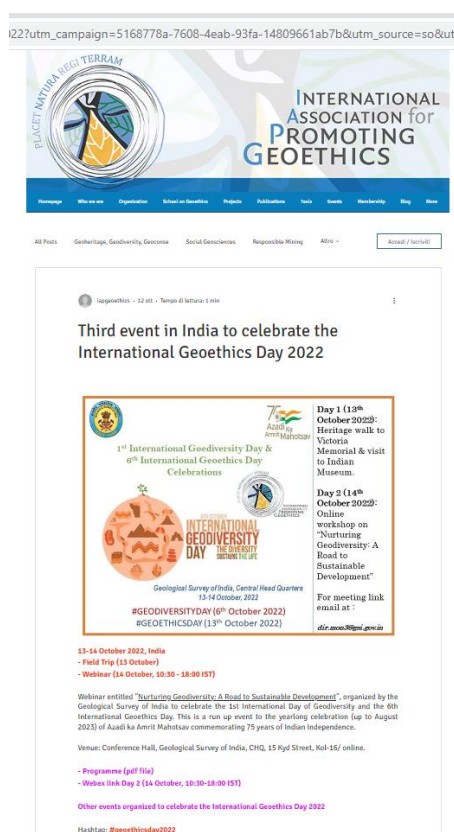
Sl.No.	Name	Designation
1	Dr. S.Raju	DG, GSI, CHQ
2	M.M.Powar	ADG,ADSS, CHQ
3	Satyabrata Guha	Rtd. DDG, GSI
4	Dr. Snigdha Ghatak	Director, MoN-III, CHQ
5	Pradeep Mukherjee	Director, M-IIIC, CHQ
6	Nabanita Nandy	Director, M-IIIB, CHQ
7	Amitabh Bhattacharya	Director, Curatorial, CHQ
8	H.M.Mishra	Director, CHQ
9	Dr. R.K.Singh	Joint Director, CHQ
10	Geetanjali Rana	Sr.Geologist, MoN-III, CHQ
11	Diptansu Sengupta	Sr.Geologist, MoN-III, CHQ
12	Rupesh Kumar	Sr.Geologist, MoN-IV, CHQ
13	Avik Manna	Sr.Geologist, MoN-1
14	Koyel Bhatta	Sr.Geologist, Curatorial, CHQ
15	Ashis jha	Sr.Geologist, Curatorial, CHQ
16	Asesh Karmakar, photographer	LIA, Curatorial, CHQ
17	Manjira Ghosal	School of Oceanographic studies, Jadavpur University
18	Madhusree Biswas	School of Oceanographic studies, Jadavpur University
19	Sayani Mazumder	School of Oceanographic studies, Jadavpur University
20	Debolina Kundu	School of Oceanographic studies, Jadavpur University
21	Sk Tanveer Rahman	Asutosh College
22	Manab Saha	Asutosh College
23	Swarnabha Basu	Asutosh College
24	Abhishikta Maity	Asutosh College
25	Shumaila Reyaz	Asutosh College
26	Subhendu Mandal	Asutosh College
27	Imon Guchhait	Jadavpur University
28	Ipsita Saha	Jadavpur University
29	Anwesha Nasreen	Jadavpur University
30	Palash Das	Jadavpur University
31	Apratim Nanda	Jadavpur University
32	Subhajit Ghoshal	Jadavpur University
33	Sukanya Sit	Jadavpur University
34	Hrishabh Mandal	Presidency College
35	Anikate Chowdhury	Presidency College
36	Sagnik Dutta	Presidency College
37	Pramita Ghosh	Presidency College
38	Moubani Majumder	Presidency College
39	Ankita Basak	Presidency College
40	Aditya Chowdhury	St.Thomas Day school
41	Akash Chowdhury	St.Thomas Day school
42	Shourjya Nandi	Techno India Group Public School
43	Suraj Prakash Singh	Asutosh College

V. Programme for *Day 2 on 14.10.2022*: online workshop on “Nurturing Geodiversity: A Road to Sustainable Development”

An online workshop on “Nurturing Geodiversity: A Road to Sustainable Development” was held at the Conference Hall, Kyd Street, GSI, CHQ and online during the second day of celebrating the 1st International Geodiversity Day and 6th International Geoethics Day by Geological Survey of India, under the chairmanship of Dr. S. Raju, Director General, GSI on 14th October, 2022.

The program was featured in GSI portal, social media handles of GSI (https://m.facebook.com/story.php?story_fbid=pfbid029yCPQW45LGN2Xwa53icjrQXYLYZKon3rCkHAFqkzciGL2ELW2mUYtkb94zpCCyEAl&id=100064326324409&sfnsn=wiwspwa&extid=a
<https://twitter.com/GeologyIndia/status/1580066433576599553?t=ce5wR77amzID-8iOFkxmfg&s=08>).

Further the event was showcased at <https://www.geodiversityday.org/find-an-event> and IAPG web channel.



Reports on this event was published in regional/ national dailies.

The **proceedings of the workshop** is as under.

VI. Proceedings of the (Online) workshop on “Nurturing Geodiversity: A Road to sustainable Development”, held on 14th October, 2022, 10:30 a.m at GSI, CHQ on occasion of celebrating 1st International Geodiversity Day and 6th International Geoethics Day

An online workshop on “Nurturing Geodiversity: A Road to Sustainable Development” was held at the Conference Hall, Kyd Street, GSI, CHQ and online during the second day of celebrating the 1st International Geodiversity Day and 6th International Geoethics Day by Geological Survey of India, under the chairmanship of Dr. S. Raju, Director General, GSI on 14th October, 2022.

The list of participants at the Conference Hall is at Appendix-2. More than 100 nos. of dignitaries joined the workshop online (over webex platform).

2. The workshop commenced with the inaugural session.

2.1. Dr. Snigdha Ghatak, Director, PSS-P&M welcomed the participants of the workshop with a brief on International Geodiversity Day and International Geoethics Day. She also mentioned that the programme is being held as a run up to the year-long celebration of Azadi ka Amrit Mahotsav.

2.2. Shri M M Powar, Additional Director General and Head of the Department, GSI, CHQ in his opening remarks highlighted on the significance of Geodiversity and its ethical exploration in the backdrop of UN sustainable development goals set for 2030.

2.3. Dr. S Raju, DG, GSI in his opening remarks mentioned that Geological Survey of India had declared 32 nos. of geoheritage sites in the past and has been playing a pivotal role in conservation and promotion of country's geoheritage resources. He mentioned that with proactive role of GSI and State Government, the Cretaceous Type section at Tamilnadu could be conserved wherein land has been allocated to GSI. He emphasized that such efforts are promising and GSI shall shortly write to all chief Secretaries of the states as a measure for securing lands for significant geosites. In this request, an added parameter would be to safe keep 5mx5m area in each mining areas for the sake of posterity. He stated that, GSI web portal has launched Geotourism Map of India on 15th August 2022 featuring 90 nos. of geoheritage/ geotourism sites. He mentioned that, GSI is taking pro-active measures in establishing geological museums (Gwalior), geological parks (Jabalpur). Referring to his recent discussion with Geoheritage Task Group Chair, International Union of Geological Sciences (IUGS) he mentioned that, India is yet to make its journey on to the UNESCO Global Geopark Network (GGN) and efforts shall soon be initiated for recognition of at least two geological superlatives and its surrounding areas under the aegis of GGN.

2.4. The following two books/ journals were released by Dr. S. Raju, DG, GSI, Shri M M Powar, ADG & HOD, Shri P C Das, DDG, MIII B (addl.) & C and Shri Pradeep Singh, Director (Tech.), MoM.

- i. “Contribution of Geological Survey of India in search of Coal”
- ii. “Indian Journal of Geosciences, Volume 76, No. 2, April-June, 2022”

2.5. The inaugural session ended with release of the posters on “Geoheritage and Geotourism sites in India” by Shri M. M. Powar, ADG & HoD, GSI, CHQ and Shri Asit Saha, DDG, PSS, GSI, CHQ.

3. Five technical sessions on i. Geodiversity, ii. Geoheritage, iii. Heritage Stones, iv. Geotourism- Geoparks & v. Geoethics were scheduled subsequently during the day. The key points discussed during the various sessions by the eminent geoscientists of the country are as under.

3.1. The key note address on “Nurturing Geodiversity: A Road to Sustainable Development” was delivered by the Guest of Honor , Dr. O. N. Bhargava, Honorary Professor, Punjab University. He highlighted on the geomorphological and geological diversity of India, with an emphasis on the diversity of rock types, geological textures, geological structures as well as tectonic, paleontological and geochronological diversity of the country. He raised his concern regarding the destruction of spectacular geological features due to unplanned construction works throughout the country. He opined that these precious geological features should be archived. He recommended that for each state a committee comprising representatives of GSI, the University, and the State Geology department be constituted. All proposals of road building/widening and civil structure be submitted to this committee to ensure that no geotreasure is lost/obliterated.

4. During the second session on Geo-heritage, Shri Asit Saha, DDG, PSS, GSI, CHQ, apprised the august gathering about the “Geoheritage and National Monuments in India: Role of GSI”. He mentioned that the geosites are under various stages of maintenance and that the ownership of geoheritage sites (by Govt./private or PSU) or the lack of it is the major problem in its conservation. He mentioned that GSI has recently published “Geotourism hotspots of India” during virtual 36th IGC. Some of these sites have already been declared as UNESCO world heritage sites and earned popularity in global context. A step forward towards conservation of the geosites requires coordinated efforts of the stakeholders by creating awareness, formulation of necessary legislation, organisational strengthening of GSI by creating separate workforce at central, regional and state levels (by establishing state level curatorial divisions). A true collaborative efforts between GSI and State Governments, institutions and NGO’s is called for in this regard.

4.2. Shri Satyabrata Guha, DyDG (Retired.), delivered a talk on “Rahr Bengal Geoheritage Trail: Prospect and proposition”. His talk highlighted the geological, cultural, linguistic and architectural significance of the Rahr Bengal (Gongoni, Mogolmari, Kurumbera Fort, Pathra Temple and Bishnupur) and the Geotourism potential of this trail that can be tapped.

5. During the third technical session on “Heritage stone”, Dr. Gurmeet Kaur, Associate Professor, Punjab University, spoke about “Potential Heritage Stones of India with Special Reference to Makrana Marble”. She explained how significant the different heritage stones are with respect to geoheritage and development of geotourism of a place as these man made monuments can be considered as the laboratory for earth science students. She further mentioned the potential of other lithotypes of the country like yellow sandstone, Deccan basalt, Charnockite and Vindhayan Sandstone, to be considered as heritage stones from India in addition to Makrana Marble which is

already a part of Global Heritage Stone Resources (GHSR). Lastly she raised her concern regarding the deterioration, restoration and preservation of Makrana Marble and other potential heritage stones.

5.2. The second and last speaker of the session, Dr. S. K. Wadhawan, DG (Retired.), GSI, explained the potential for the Laterites of Peninsular India to be considered as heritage stone, mentioning its wide usage as building material for historical monuments like Madikeri Fort as well as recent constructions as airports. He further mentioned that the cultural significance, wide-spread occurrence and stratigraphic significance of the stone should be taken into consideration for declaring it as heritage stone.

6. Post lunch, during the technical session on “Geotourism and Geoparks”, Dr. Snigdha Ghatak, Director, PSS: P&M-3, GSI, CHQ, delivered a talk on “Geotourism in India: a Prologue”. Briefly describing the geological and geomorphological superlatives of India and their potential for being developed as geotourism destinations she mentioned that, a national framework for developing geotourism and Geoparks is a prerequisite. Following the international best practices and legislative framework, geosite needs identification, categorization and assessment (following a SoP) for developing these as geoparks or sustainable geotourism destinations. She also mentioned that this year, India has organized maximum numbers of events on occasion of Goediversity day.

6.2. Dr. Pradip Mukherjee, Director, Mission-IIIC, GSI, CHQ, demonstrated the geotourism map service of India available on OCBIS portal of GSI and how general public will be able to access it.

6.3. Professor Viswas Kale, Professor (Retired.), Pune University, delivered a talk on “Geomorphosites in India: Their inventory, evaluation, promotion and conservation”. Describing briefly the diversity of the geomorphosites of India including Himalayan, granitic, Deccan Trap, desert, alluvial and coastal landscapes, he mentioned that preparation of detailed inventory along with status of damage for each geoheritage sites is an absolute requirement for geo-conservation and geotourism promotion. He referred to four fundamental pillars for assessing the geomorphosites to be part of Global geoparks includes, whether it is a geological heritage of international value, it's management, visibility & networking. As per International Union for Conservation of Nature (IUCN) protected area category list, he preferred putting the geomorphosites under Category three - that concerns natural monument or feature.

6.4. Dr. M. S. Bodas, DDG (Retired), GSI, delivered a talk on “Geotourism destinations in Maharashtra: few case studies”. He presented the geotourism potentials of Lonar Crater, Ajanta & Elora caves and Panchgani- Mahabaleswar Plateau, Nighoj Potholes, Wadhadham Fossil park. Each site was assessed using certain parameters for developing geotourism. He also mentioned various measures to take geotourism forward in Maharashtra viz., stake holder collaboration (viz., delivering lecture on geoheritage sites at staff training college Moosurie for the would be collectors), identifying additional geosites etc. He raised his concern regarding non-committal response from district administration at present.

6.5. Dr. Rajasekhar Reddy, INTACH & Professor (Retired.), Andhra University, elaborated on the geotourism potential of Vishakapatnam under two stretches viz., Visakhapatnam- Bheemupatnam & Bora-Araku sectors. Briefly describing the major geotourism sites of Vishakapatnam including Rishikonda beach, Tenneti Park, Erra Matti Dibbalu national geoheritage site, Borra caves, Bauxite hills of Araku and seven important springs, he mentioned that the major challenges are the abuse of geoheritage sites by unethical tourism and lack of government actions for protection of geosites. He requested GSI to take a lead in this regard. He also proposed the case of Vishakapatnam as “Urban Geopark” in India.

6.6. The last speaker of the session, Dr. Pradeep Singh, Director (Tech.), Ministry of Mines, delivered a talk on “Conservation of Geoheritage Sites in India”. He mentioned that as the national custodian [by charter of functions] it is bounden duty of GSI to delineate and maintain the geoheritage sites in India. He narrated the techno-administrative history about declaration of geoheritage sites in India and the journey for developing a legal framework for conservation of geoheritage sites in India which is underway. He mentioned that owing to the difficulty for creating separate authority for geoheritage management, the bill (along with official note) that has been drafted now follows certain simple parameters (as in AMASR ACT 2010) with GSI as the nodal organization. He depicted the GSI efforts in formulation of geopark at Jabbalpur, Erra Matti Dibbalu National Heritage site and Geoscience museum, Victoria building, Gwalior.

7. The audio-visual received from the International Association of Promoting Geoethics (<https://www.geoethics.org>) was run at the outset of the technical session on geoethics. In this video by Prof. Silvia Peppoloni & Dr. Giuseppe Di Capua (International Association for Promoting Geoethics) was mentioned that, with the growth of urban civilization, a barrier between nature and the human world has been built. The role of Geotourism in raising also the awareness on Geoethics should increase with time for a more responsible interaction between human beings and nature. Prof. Peppoloni further mentioned that the geotourist, through sensory, emotional, and rational perceptions can become the fulcrum where the ontological unity between the perceptive and the rational world is reconstituted.

7.2. The next speaker of the session, Prof. Surya Parkash, Professor, NIDM & IAPG India Chapter, explained that Ethical Criteria, Responsibility and Geoscientific Knowledge are the three pillars of Geoethics. He mentioned that risk communication, dissemination of information and better coordination and collaborative system is an absolute necessity for preservation of geosites. He demonstrated the significance of 10 principles in risk management for the maintenance of Geoethics, by giving emphasis on education and social responsibility.

7.3. The next speaker of the session, Dr. M. K. Devarajan, Vice President, Exploration, Supreme Gold Corporation, discussed regarding the Geoethics in Mineral Exploration. In his speech he compared the necessary rules and regulations required for the geoscientists in the first world countries and in India. He mentioned that registration as mining exploration geologist is a mandatory thing for many first world countries as in Australia and USA. He mentioned that “Jorc Code” is followed in these countries and minimum standard for exploration reports are maintained regarding the

transparency, materiality and competence of the associated geoscientists. Where in India NACRI code of ethics is followed.

7.4. Dr. Debahuti Mukherjee, Director, GSI, the last speaker of the session briefly discussed the requirement of geoethical practices during the fossil sampling for paleontological exploration. She further mentioned vandalism and mindless breakage and unrestrained developmental activity are major concern for the destruction of geosites.

7.5. Shri Ravi Kumar Vundavalli, Director (Retired.), GSI, prior to panel discussion, delivered a brief talk regarding the digital signage for national geological monuments. He briefly commented on the check list of digital signage and its implication on geotourism. For more details on Digital Signages for NGMs, he requested to visit <https://youtu.be/rRv-gNV5btw>.

8. At the outset of the “Panel Discussion” Dr. S. Raju, thanked all the speakers and mentioned about GSI’s recent contributions regarding the creation of national geoscience museum at Gwalior and a geological park at Madhya Pradesh. He requested the delegates present for panel discussion to represent their views based on the discussion took place throughout the day.

8.2. In response to this request, Sugata Hazra, Professor, Jadavpur University, explained the relationship between Geo- and Biodiversity and proposed to promote geotourism in already established biopark. In this regard, he mentioned about Sundarban deltaic system, blooming chernockite and khondalite areas of peninsular India, Andamans, stating that these world heritage bioparks can also be tagged as geoparks as geology of the area has major contribution in the biodiversity of the land.

8.3. Sunil Kr Dey, Professor, NEHU and President International Association of Geomorphologists, explained that landform and topography of an area are the major factors for considering it as geotourism site. To make a geotourism site sustainable, detailed scientific, social information should be available for the general public. He mentioned that to spread more awareness slogan competitions, field trips and exhibitions of geodiversity should be organized. He further stated that as preservation of geosites and geotourism is not a single discipline work, an integrated route should be taken.

8.4. Ravi Kumar Vundavalli, Director (Retired.), GSI, mentioned that the Geotourism is the end product of all the work starting from its declaration, development & conservation and includes all aspects of study related to culture, archaeology, biodiversity etc. He said, to boost geotourism, there should be more photos videos, drone footages and geoscientific knowledge available for each geosites including the mobile devices with GPS information regarding the roads and routes leading to geotourism sites. He further proposed Jabalpur to be a geopark as it possesses exceptional geology, tribal heritage, rock paintings and dinosaur fossils.

8.5. Sh. M. S. Bodas, DyDG (Retired), GSI, as panelist, highlighted the major factors necessary for conservation of geoheritage sites. He mentioned, formulation of Act is immediate requirement for conservation. According to him the technocrats should be educated regarding such conservation and many related organizations should work in collaboration. He stated that construction of roads are necessary to boost geotourism, but balance between infrastructural development and preservation of geodiversity

should be maintained. He further mentioned that geo tours should be conducted keeping in mind all kinds of geotourists including common people, potential geoscientists as well as expert geoscientists. He also expressed that specialized museum on different geological formations should be build, mentioning that building one National Geoscience Museum should be the beginning not the goal. He suggested that leading organizations and individuals should be identified immediately to carry on the necessary works.

8.6. Dr. S. P. Shukla, ADG, STSS, GSI, CHQ, raised his concern regarding the effects of climate change on geoheritage sites. He also mentioned that more care needs to be taken during the building of engineering structures in Himalaya and Lahul-Spiti. Pointing towards the lack of awareness about geodiversity among people and students, he suggested that NCERT and UGC should include chapters on the topic in respective study materials. He also suggested that bill regarding the conservation of geoheritage site should include a clause that prior to any infrastructural development in these areas, consent from GSI and other related organizations has to be taken beforehand.

8.7. The next panelist, Dr. N R Ramesh, appreciating the effort taken up by GSI, mentioned that some of the 36th IGC field trip areas can be considered as the place of geopark/geosites. He also suggested that many virgin areas in North East India can be considered as geoheritage sites. He precisely mentioned that Yamma cave of Karnataka should be considered as Geo-archeological site.

8.8. Prof. Jan Harff, Chair, Marginal Sea Task Group, DDE appreciated India's efforts and initiatives regarding the conservation of geodiversity of the country. But he mentioned that these challenges are not limited to India only; similar endeavors should be taken up worldwide. He further mentioned that lot of works related to the preservation of geodiversity in coastal areas and its relationship with the humans is yet to be explored and this aspect need to be considered.

8.9. Dr. S K Wadhawan emphasized that a National Committee needs to be put in place including members from GSI and other stakeholders. He further explained the difference between geodiversity and geoheritage sites. He said that museum is exsitu geohritage sites. He complemented GSI for organising the event and requested GSI to take lead in Geoheritage development in India.

8.10. Prof. Alhuwalia, Chandigarh University suggested that students at the grass root level, e.g., Panchayat School should be made aware of the issues related to geodiversity and geology should be linked with environmental sciences in the curriculum. He further mentioned that GSI should rope in the retired experts in their future endeavors related to geoheritage and geotourism.

8.11. Prof. D M Banerjee, INSA appreciated the commendable work of GSI in geoheritage development in the country. He however insisted to increase the outreach of GSI' s work and create a common platform for all to interact with GSI taking the primary lead. He suggested to utilize the human resources from the universities for furtherance of the work of Geological Survey of India. He further emphasized that collaborative ventures between universities and GSI in required to overcome the challenges related to the conservation of geodiversity.

8.12. Dr. Rajasekhara Reddy, INTACH mentioned that the 32 nos. of geoheritage sites declared by GSI needs to now expand and GSI should take the lead in conservation of geoheritage sites across the country taking other stakeholders onboard. INTACH has been consistently engaged in organizing heritage walks, seminars and other outreach programmes.

8.13. Dr. Pradeep Singh, Director (Tech.), Ministry of Mines, mentioned that soon the legislation shall be brought in. He further mentioned that land acquisition by the government is required for the preservation of geosites, as most of the sites might not attract much tourists and may not be self-sustainable. Therefore, it might be the social responsibility of the government to maintain the sites.

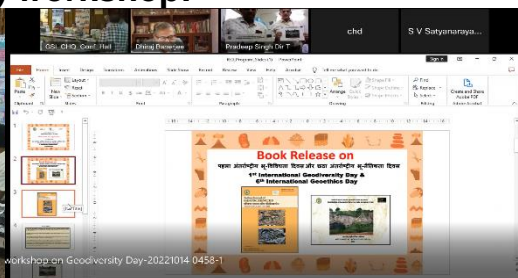
8.14. Dr. S. Raju, DG, GSI, declared that a cabinet note regarding the geoheritage sites is expected shortly. He also expressed that GSI, GSI is already working in collaboration with various stakeholder and open to suggestions and further collaboration for development of Geosites and Geoparks in india.

9. The discussion ended with the vote of thanks by Smt. Nabanita Nandy, Director, GSI, CHQ.

VII. Glimpses from the (online) workshop:



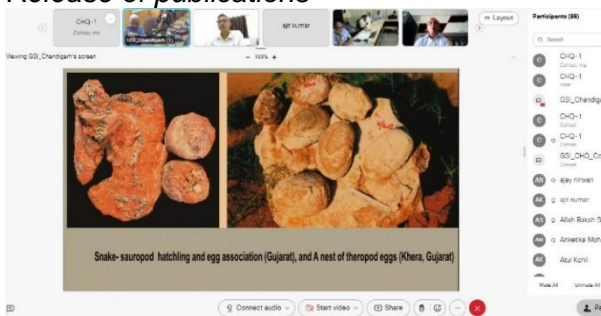
Inaugural address by DG, GSI



Release of publications



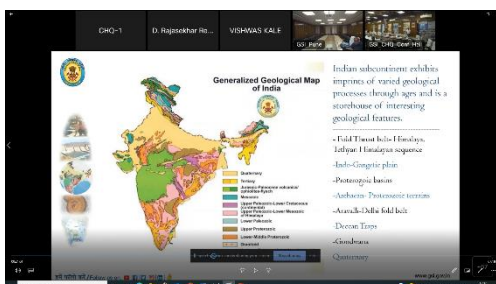
Release of Geotourism and geoheritage sites of India posters



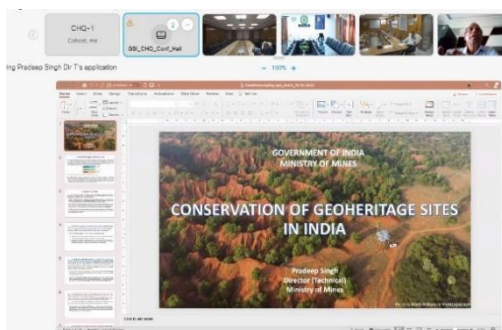
Key note address by Dr. O N Bhargava



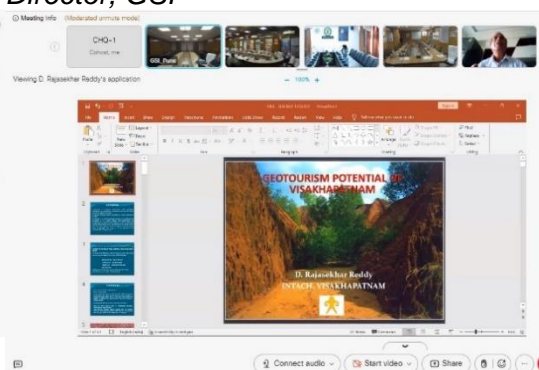
Presentation by Shri Asit Saha, DDG, GSI



Presentation by Dr. Snigdha Ghatak, Director, GSI



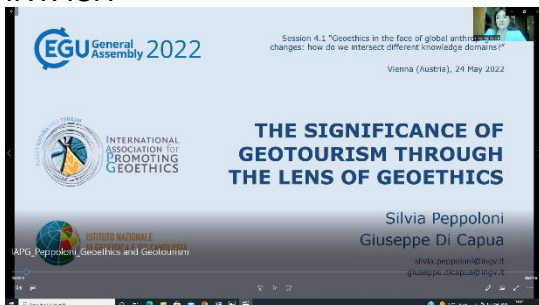
Presentation by Shri Pradeep Singh, director [Tech], Ministry of Mines



Presentation by Dr. Rajasekhara Reddy, INTACH



Presentation by Prof. Viswas Kale



(Recorded) Presentation by Prof. Sylvia Peppoloni & Prof. Giuseppe Di Capua, IAPG



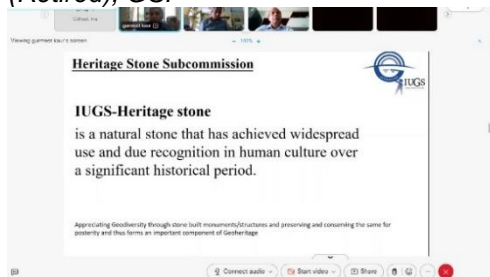
Presentation by Prof. Suryaprakash, NIDM



Presentation by Dr. M K Devarajan



Presentation by Shri Satyabarata Guha, DDG (Retired), GSI



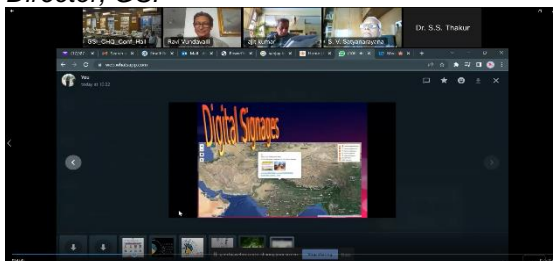
Presentation by Dr. Gurmeet Kaur



Panelist: Prof. Sugata Hazra, Jadavpur University



Panelist: Prof. S K De, NEHU



Presentation by Dr. Debahuti Mukherjee, Director, GSI



Panelist: Dr. N R Ramesh, Addl. Director General, GSI (Retired)



Panelist: Prof. Jan Harff, Chair, Marginal Seas Task Group, DDE



Panelist: Dr. S K Shukla, ADG, STSS, GSI



Panelist: Dr. S K Wadhawan, DG, GSI (Retired)



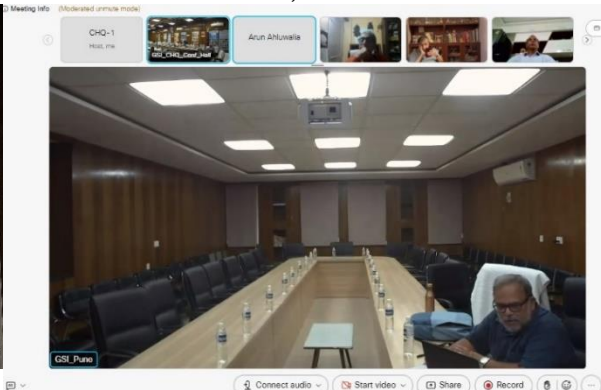
Panelist: Prof. D M Banerjee, INSA




Panelist: Prof. Aluwahlia,



Panelist: Shri Pradeep Singh, Director [Tech], Ministry of Mines




Panelist: Dr. M S Bodas, DDG (Retired), GSI



Museum of Natural History

Dr Jack Matthews



Dr Jack Matthews

Jack Matthews <jack.matt>
Sat 10/8, 5:16 PM

You forwarded this message on 10/9/2022 10:17 AM


Dear Friends,

As organisers of International Geodiversity Day events in India, I wanted to express my own appreciation for your hard work and support in making this first iteration of IGD so successful. While there are certainly more events occurring around the world than are registered on our website, from the data we have, India has hosted more events than any other country, and this is a testament to your commitment. It is also a clear expression of the international significance of India's geological heritage, and the interest of the Indian people in celebrating this fact.

Thank you once again, and I am excited to see what you have planned for International Geodiversity Day 2023!

With all good wishes,

Jack Matthews



Letter of Appreciation for Indian initiatives on Geodiversity Day

VIII. LIST OF PARTICIPANTS FROM GSI (Day-2) at Conference Hall, GSI, CHQ

Sl.No.	Name	Designation
1	Dr. S.Raju	DG, GSI
2	Pradip Singh	Director, Tech., MoM
3	M.M.Powar	ADG,ADSS
4	Satyabrata Guha	Retd. DDG, GSI
5	Asit Saha	DDG, PSS, GSI
6	S.P.Shukla	DDG, IAIGC, CHQ
7	S.K.Som	DDG, M-IVA, CHQ
8	P.C.Dash	DDG, M-IIIB & M-IIIC
9	Dr. Snigdha Ghatak	Director, MoN-3
10	Pradip Mukherjee	Director, M-IIIC
11	Nabanita Nandy	Director, M-IIIB
12	Amitabh Bhattacharya	Director, Curatorial
13	Ashis Nath	Director, MoN-4
14	Subhasis Roychaudhuri	Director, MoN-1
15	R.L.Sarkar	Director, MoN-6
16	Nirod Kumar Nayak	Director, MoN-5, CHQ
17	Dr. Debahuti Mukherjee	Director, CHQ
18	Kasturi Chakraborty	Director, CHQ
19	Shreemati Gupta	Director,CHQ
20	R.Balaji	Director,DIC, HRD, CHQ
21	Sanjeev Bhattacharya	Director, CHQ
22	Maitry Roy Moulik	Director, Curatorial, CHQ
23	Susmita Gupta	Director, M-IIIB, CHQ
24	Shri. Ajay Agarwal	Chief Engineer
25	Benudhar Behera	Director, Curatorial, CHQ
26	Smt.Linashree Dalbehera	Director, Geodata
27	Shuva Sankha Ganguly	Suptdg.Geophysicist, MoN-1, CHQ
28	Geetanjali Rana	Sr.Geologist, MoN-III
29	Diptansu Sengupta	Sr.Geologist, MoN-IIIC
30	Avik Manna	Sr.Geologist, MoN-1
31	Rupesh Kumar	Sr.Geologist, PRM cell
32	Koyel Bhatta	Sr.Geologist, Curatorial
33	Ashish Jha	Sr.Geologist, Curatorial
34	Kaushik Rajbanshi	Sr.Geologist, Curatorial
35	Asesh Karmakar	LIA, Curatorial

Appendix 3: Programme



Celebration on occasion of

1st International Geodiversity Day (6th October 2022)
&
6th International Geoethics Day (13th October 2022)

A run up event to the yearlong celebration (up to August 2023) of Azadi ka Amrit Mahotsav- commemorating 75 years of Indian Independence. This celebration by Geological Survey of India (GSI) revolves around the theme- “Geotourism Potential of India and its Development”.

Dates: 13-14 October 2022

Venue: Conference Hall, Geological Survey of India, CHQ, 15 Kyd Street, Kol-700016

Programme

Day 1: 13.10.2022

Time	Activity
10:00-10:15	Inauguration
10.15-10.30	Arrival at Victoria Memorial, Kolkata
10.30-12.30	Heritage Walk at Victoria Memorial, Kolkata (Trip co-ordinator: Satyabrata Guha, Deputy Director General, GSI (Retired) and other officers from GSI, CHQ)
12:30 to 14:00	Lunch Break
14:00-15:30	Visit to GSI Gallery at Indian Museum

Trip details: Victoria Memorial, located in Central Kolkata was built between 1906 and 1921. Built in the memory of Queen Victoria, it stands in 64 acres of gardens and is now a museum under the control of the Ministry of Culture.

Built with Makrana Marble from Rajasthan which has bagged the prestigious tag of Global Heritage Stone Resource (GHSR) from International Union of Geological Sciences from India, the Victoria Memorial speaks for an array of processes of earth and modern cultural evolution.

The GHSR designation is a useful title to promote the sustainable use of natural stones worldwide. GHSR recognition provides visibility to important Earth resources, present in almost all the heritage buildings and monuments whose conservation depends also on the intimate knowledge of the stone nature, geological frame, sources, production history, behaviour within the environment and conservation practices. The concepts of geodiversity, geotourism and ethical practices for nurturing the heritages of the country shall be presented during the walk by one of the pioneer geoscientists and story teller on occasion of the above celebrations. The open atmosphere, close to the nature will offer a perfect locale for knowledge enrichment and a trip experience to cherish forever.

Participants: Twenty (20) seats for university, college and school students on first cum-first-serve basis.

Pick up and drop off at: GSI, 15 Kyd Street, Conference Hall, Kolkata-700016; Participants to report at 9:30 AM /Contact: Director, P&M 3, dir.mon3@gsi.gov.in



Day 2: 14.10.2022

Online workshop on Nurturing Geodiversity: A Road to Sustainable Development

Venue: Conference Hall, Geological Survey of India, CHQ, 15 Kyd Street, Kol-16/ online (link is given below)

Duration (IST in hrs.)	
10:30- 10:35	Welcome by Snigdha Ghatak, Director, GSI
10:35-10:40	Opening remarks by M M Powar, Additional Director General & HOD, GSI
10:40-10:45	Opening remarks by S Raju, Director General, GSI
10:45-10:50	Opening remarks by Vivek Bharadwaj, Secretary, Ministry of Mines
10:50-11:00	<ul style="list-style-type: none"> Book/publication release- Contribution of Geological Survey of India in search of Coal Indian Journal of Geosciences, Volume 76, No. 2, April- June 2022 Inauguration of poster on Geoheritage/Geotourism sites by S Raju, Director General, GSI
	Topic/ Session
	Session 1: Geodiversity
11:00- 11:30	Inaugural talk- <i>Nurturing Geodiversity: A Road to Sustainable Development</i> – O N Bhargava, Honorary Professor, Punjab University
	Session 2: Geoheritage
11:30- 11:50	<i>Geoheritage and National Monuments in India: Role of GSI</i> – Asit Saha, Deputy Director General, GSI
11:50-12:00	<i>Digital (signage) for National Geological Monuments</i> – Ravi Kumar Vundavalli, Director, GSI (Retired)
12:00-12:20	<i>Rahr Bengal Geoheritage Trail: Prospect and proposition-</i> Satyabrata Guha, Deputy Director General, GSI (Retired)
	Session 3: Heritage Stones
12:20-12:40	<i>Makrana Marble: Potential Heritage Stones of India with special reference to Makrana Marble-</i> Gurmeet Kaur, Assistant Professor, Punjab University
12:40-13:00	<i>Laterite- A Potential Heritage Stone Resource from Peninsular India-</i> S K Wadhawan, Director General, GSI (Retired)
13:00- 13:30	Q&A session
13:30-14:30	Lunch Beak
	Session 4: Geotourism & Geoparks
14:30-14:50	<i>Geotourism in India: a prologue</i> – Snigdha Ghatak, Director, GSI
14:50-15:00	<i>Geotourism Map of India-</i> Nabanita Nandy & Pradip Mukherjee, Director, GSI
15:00- 15:20	<i>Geomorphosites in India: Their inventory, evaluation, promotion and conservation-</i> Viswas Kale, Professor, Pune University (Retired)
15:20-15:30	<i>Geotourism destinations in Maharashtra: few case studies-</i> M S Bodas, Deputy Director General, GSI (Retired)

15:30- 15:50	<i>Geotourism potential of Vishakapatnam-</i> Rajsekhar Reddy, INTACH & Professor (Retired), Andhra University
13:50- 16:10	<i>Conservation of Geoheritage Sites in India-</i> Pradeep Singh, Director Technical, Ministry of Mines
	Session 5- Geoethics
16:10-16:20	<i>Geotourism through the lens of Geoethics</i> – Sylvia Peppoloni, Professor, IAPG (Audio-visual)
16:20-16:40	<i>Geoethics toolkit for sustenance of geodiversity-</i> Surya Prakash, Professor, NIDM & IAPG India Chapter
16:40-17:00	<i>Geoethics in mineral exploration</i> – M K Devarajan, Vice President, Exploration, Supreme Gold Corporation
17:00-17:05	<i>Geoethics and Palaeontology</i> – Daniel De Miguel, IAPG (Audio-visual)
17:05-17:15	<i>Fossil sampling and Geoethics</i> - Debahuti Mukherjee, Director, GSI
17:15-18:00	Panel discussion & summing up (including Q&A) Panellists: S Raju, DG, GSI M M Powar, HOD & ADG, ADSS, GSI Neloy Khare, Scientist – “G”, Ministry of Earth Sciences Sugata Hazra, Professor, Jadavpur University Sunil De, Professor, NEHU & President, IAG Ravi Kumar Vundavalli, Director, GSI (Retired) M S Bodas, DyDG, GSI (Retired) Other Stakeholders
18:00	Vote of Thanks

Rapporteur: Geetanjali Rana/ Diptansu Sengupta, Senior Geologists, GSI

Meeting Link:

<https://gsi-chq.webex.com/gsi-chq/j.php?MTID=m444bc0b44d6b3feefb1f4101fe8d65bd>
Thursday, Oct 14, 2022 10:00 am | (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi
Meeting number: 2511 449 0729
Password: 8144
Join by video system: Dial 25114490729@gsi-chq.webex.com
You can also dial 210.4.202.4 and enter your meeting number.
Join by phone: +65-6703-6949 Singapore Toll
Access code: 251 144 90729

Contact:

Dr. Snigdha Ghatak Director,
Planning and Monitoring 3
Geological Survey of India
Central Head Quarters,
Kolkata
Email: dir.mon3@gsi.gov.in

Organising Committee: Dr. Snigdha Ghatak, Director; Smt. Nabanita Nandy, Director; Shri Pradip Mukherjee, Director; Shri Amitava Bhattacharya, Director; Smt. Geetanjali Rana, Senior Geologist; Shri Diptansu Sengupta, Senior Geologist and others