

Report

XXI INTERNATIONAL UNION FOR QUATERNARY RESEARCH (INQUA) CONGRESS 2023 ROME, ITALY: INDIA'S SUCCESSFUL BID TO HOST THE INQUA CONGRESS IN 2027

July 14–20, 2023

Founded in 1928, the International Union for Quaternary Research (INQUA) is a global network of over 5,000 scientists working across 50 countries who focus on studying changes in the environment during the glacial and interglacial periods of the most recent period (Quaternary; the last 2.58 million years to the present). The INQUA Congress is held every fourth year since the inception. The XXI congress was held at Sapienza University of Rome, Italy from July 14–20, 2023 with the principal theme of “Time for Change”. The participation of 2783 delegates from all over the globe was seen at the XXI INQUA Congress 2023. The researchers presented their research findings in a variety of sessions organised within the seven major themes: 1. From Natural Processes to Geohazards; 2. Landforms, facies Architecture and Sequence stratigraphy; 3. Quaternary environments and Human evolution: fossil record, phylogeny, palaeobiology, palaeoecology and cultural models; 4. Ecosystems and biogeography from the latest Pliocene to “Anthropocene”; 5. Climate record, processes and models; 6. The Quaternary time machine; and 7. Time for Change in Quaternary Sciences.

During the scientific sessions, Quaternary researchers delivered their new results, and between these sessions, plenary sessions took place. Prof. Carlo Doglioni from Sapienza University, Rome, discussed the gradients of the Quaternary Earth. Prof. Inger Greve Alsos of the Arctic University Museum of Norway spoke about the Ancient Sedimentary DNA. Prof. Julie Brigham-Grette, Department of Geosciences at the University of Massachusetts Amherst gave an insightful keynote lecture on the topic of “Pliocene-Quaternary Evolution of the Arctic: The messy transition from Forest to Tundra and now our return”, and Prof. Pradeep Srivastava from IIT Roorkee, India, gave a captivating talk on the geology of floods in the Himalaya.

In addition to the plenary and scientific sessions, the congress featured a diverse array of expert workshops and short courses designed for students, early career researchers (ECR), and any interested researchers. Ten workshops and four short courses were conducted in total. Each day of the

congress was structured to include three poster sessions and fourteen parallel sessions. The congress featured numerous workshops covering topics such as the Neotoma Palaeoecology Database: Encouraging Accessible Quaternary Research; Rebuilding the Anatolian Peninsula's explosive Quaternary Volcanic Past: Consequences for Volcanic Hazard Evaluations in Turkey; utilising biotic assemblages to reconstruct historical climates. Additionally, special meetings of INQUA commissions such as HABCOM, PALCOM, SACCOM, TERPRO, and others took place during the congress. A conference titled Recent Developments in Landslip Science: Implications for Geomorphic Modelling, Hazard Assessment, and Palaeoclimate Proxy Systems was held.

In INQUA Rome, the Indian delegation was well-represented under the leadership of Prof. D.M. Banerjee, Chair of INSA for the National Committee for IUGS and INQUA. Dr. M. Mohanti and Dr. Usha Dixit from Department of Science and Technology, New Delhi; Dr. Vandana Chaudhary Scientists from Ministry of Earth Sciences, New Delhi along with other eminent scientists Dr. Vandana Prasad, BSIP, Lucknow; Dr. Pradeep Srivastava, Indian Institute of Technology (IIT)-Roorkee; Dr. Rahul Mohan, NCPOAR, Goa; Dr. Hema Achyuthyan, IOM, Anna University, Chennai; Dr. Anupama Krishnamurti, French Institute, Pondicherry; Prof. Shanti Pappu, Sharma Centre for Heritage Education, Chennai; Dr. Javed Malik, IIT-K; Dr. Trailukya Borgohain, Oil India Limited; Dr. Anupam Sharma, Dr. Binita Phartiyal, Dr. Santosh K. Shah, Dr. Firoze Quamar, Dr. Swati Tripathi, Dr. Nivedita Mehrotra, from BSIP, Lucknow; Dr. Parth Chauhan, IISER Mohali, Dr. Rajani Panchang, SPPU, Pune; Dr. Prabhin Sukumaran, CHARUSAT, Gujarat; Dr. Kapasa Lokho, WIHG, Dehradun; Dr. Linto Alappat, Christ College, Irinjalakuda, Kerala; Dr. Ekta Gupta, Shoolini University, Solan; Dr. Nupur Tewari, IIT-M; Dr. Tejpal Singh, CSIR-CSIO, Chandigarh; Dr. Naveen Chauhan, PRL, Ahmedabad; Dr. Rayees Shah, Kashmir University, Kashmir; Dr. Sijin Kumar AV, Central University of Kerala are a few to name. Over 100 Indian researchers presented their research work in various sessions.

In the council meeting of INQUA, the Indian bid to host the XXII INQUA Congress was presented by Dr. Binita Phartiyal from BSIP, Lucknow. The efforts and presentation made a significant impression on the International Quaternary Council, leading to India being successfully awarded the bid to host the prestigious congress in Lucknow, Uttar Pradesh. The European Union, with the majority of voting countries, went unanimously for India. During the General Assembly



Some photographs of the Indian Delegation at INQUA-2023

Meeting, Prof. Thijs Van Kolfschoten, the then President of INQUA, extended his gratitude to the Indian delegation. He expressed appreciation for their efforts in hosting the upcoming INQUA Congress and wished India well for the successful organization of the event. The acceptance speech for hosting INQUA 2027 in India was delivered by the Indian Ambassador to Rome, Dr. Mrs. Neena Malhotra IFS. In her speech, she accepted the award on behalf of India. The next INQUA Congress is scheduled to take place in Lucknow from 01-07 February 2027, and it will be led by Prof. Pradeep Srivastava as President, Dr. Rahul Mohan as Vice President, and Dr. Binita Phartiyal as Organizing General Secretary. The

theme of INQUA India is “Quaternary Science as Societal Services.”

Researchers working on various aspects of Quaternary Science were well appreciated by the research findings presented by scientists from the Birbal Sahni Institute of Palaeosciences, Lucknow. BSIP representatives at INQUA-Rome include scientists Drs. Anupam Sharma, Binita Phartiyal, Santosh Kumar Shah, Swati Tripathi, Manoj M.C. and Md. Firoze Quamar under the leadership of Dr. Vandana Prasad then the director BSIP. Many young researchers were present at the event. Indian delegates from all over the country gave presentations on their research on subjects pertaining to

diverse areas of paleo-ecology. Several research students from BSIP received funding from SERB, New Delhi and INQUA for attending the congress.

Together with Prof. Pradeep Srivastava, Dr. Binita Phartiyal chaired a session titled “Quaternary Climate, Landscape and Surface Processes in Mountain Belts.” In the session titled “Late Quaternary Desertification, Landscape Changes, palaeoclimate, and human adaptation”, Dr. Binita Phartiyal gave an informative talk. Dr. Anupam Sharma, Senior Scientist, BSIP presented a talk entitled “Geochemical and Clay Mineralogy Characterization of Ganga Flood Plain sediments: Insights to weathering and sediment provenances.” Dr. Swati Tripathi presented an oral presentation dealing with the dietary analysis of the wild Yak from the western Himalayas using pollen and other proxy records and possible causes of its survival during the Pleistocene-Holocene climatic transition. In an interactive session, she also gave a poster about historical climate changes on Majuli Island (Assam), which is thought to be the largest river island in the world.

Dr Santosh Kumar Shah outlined the research that was done to examine hydroclimatic variability over 1532 years (489-2020 CE) by utilising tree-ring oxygen isotope datasets from the south eastern Tibetan Plateau. Based on pollen and other proxy records, Dr. Md. Firoze Quamar presented the unique record of the Indian Summer Monsoon rainfall (ISMR) variability during the Last Glacial Maxima from the Chhattisgarh State (central India). Dr. Manoj M.C. discussed the variability of ice-rafted debris during glacial and interglacial periods and its implications for paleoceanography in the western Indian sector of the Southern Ocean. Indian participants convened various sessions and led several workshops along with presenting their work in oral and poster sessions.

The young scientists seized the opportunity to engage in conversations, debates, and the exploration of potential collaborations with experts in their respective fields. This interaction aimed to foster meaningful connections and lay the groundwork for potential future collaborations that could be

further explored and developed. The young Indian delegates were introduced to the latest technologies in the Quaternary field and received invaluable training from the workshops they attended. Delegates had their publishing-related questions addressed by editors and representatives from various publishing houses during the congress. Experts from well-known publishers like Elsevier, Springer, and others were available to provide insights and answer queries. Several of the Indian young delegates were elected and felicitated in the different commissions of INQUA with newer responsibilities for the next four years. These appointments and the Indian bid victory at the INQUA Council are a matter of great pleasure and success. It also displays our strength in Quaternary science.

Indian deputed scientists took part in the Indian Expo stall and provided information about the location, suggested field trips within India, and further elaborated on the idea of holding the XXII INQUA Congress in the country in 2027. They also attempted to persuade researchers worldwide to support India's bid to host the next INQUA Congress. Future pathways for Indian scientists were discussed in a special meeting with Prof. D.M. Banerjee and Dr. Vandana Prasad, who addressed the delegation from India. The oral and poster presentations by the Indian delegates at INQUA, Rome were undoubtedly inspiring and likely provided a significant boost to their research endeavors. The exposure and engagement at an international platform like INQUA would have offered valuable insights and ideas for enhancing techniques and exploring new proxies.

In the concluding session of the congress, Dr. Binita Phartiyal, the Organising General Secretary of INQUA - 2027, showcased the INQUA - winning proposal documentary. During this presentation, she emphasised that India offers research opportunities covering the whole range of the Quaternary Period. Recent years have seen India make great strides in Quaternary science, contributing significantly to our understanding of Earth's processes and their particular geological settings and challenges. Indian researchers hope to encourage scientists from around the world to visit India and



Group Photograph

investigate its Quaternary history and processes by providing a sneak peek of Quaternary sites through the INQUA-2027 Congress. She extended an invitation to delegates worldwide to visit India and take in the country's rich historical and cultural legacy on behalf of the Indian Quaternary Fraternity.

With proactive support for capacity building and collaboration in their programmes, INQUA 2027 will provide us with the chance to integrate and disseminate Indian science and expertise with SAARC and BIMSTEC countries. We see it as an excellent opportunity for India to take on its share of the responsibility for these regions' capacity development and, eventually, build a base of goodwill.

Possible impact of INQUA 2027 on Indian research

As the largest platform for Quaternary Science researchers, INQUA aims to introduce attendees to a wide range of research topics, careers in the Quaternary community, and networking opportunities with interdisciplinary and international researchers. Winning the bid to host INQUA in India is a great honour for our nation, and the Indian Quaternary Researchers bear the responsibility of organising and running the upcoming congress with success. Among the

SAARC nations, this is the first INQUA Congress to be held in the Indian Subcontinent. Exciting research opportunities will be provided by this Quaternary Conference, which will enable us to showcase the geological and cultural heritage of the region. This allows the sharing of concepts, information, and experience to advance geological research technology. Additionally, this chance will support our efforts to inform the public about the dissemination of knowledge sustaining and bridging science. Our pillars of encouragement and financial support, including the Department of Science and Technology, New Delhi, Ministry of Earth Sciences, and Indian National Science Academy, New Delhi, have consistently fortified our ideas since the initial stages of planning for the bid. Their unwavering support has been instrumental in winning the bid and now in the successful organization of INQUA India in 2027. This event holds historical significance as the first of its kind in the subcontinent since the inception of INQUA in 1928.

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