

A report on the International conference on “Communication and Dissemination of Traditional Knowledge (CDTK-2024)”

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The CSIR-National Institute of Science Communication and Policy Research (NIScPR) organised a two-day International Conference on Communication and Dissemination of Traditional Knowledge (CDTK-2024) in collaboration with Gurugram University at the Gurugram University, Haryana on November 13-14, 2024. This hybrid event brought together experts from across the globe to explore the role of traditional knowledge in shaping sustainable futures. The conference, supported by the Council of Scientific and Industrial Research (CSIR) and the Anusandhan National Research Foundation (ANRF). Spotlight sessions delved into multiple fields with the potential of TK. Panel discussions also tackled ethical considerations and the integration of traditional practices into modern frameworks.

The conference was inaugurated by Prof. K. K. Aggarwal (President, South Asian University, New Delhi), Dr. Shekhar C. Mande (Distinguished Professor, Savitribai Phule Pune University, Pune & Former Director General, CSIR and Secretary, DSIR), Prof. Dinesh Kumar (Vice Chancellor of Gurugram University), and Prof. Ranjana Aggarwal (Director, CSIR-NIScPR). Prof. Dinesh Kumar welcomed all the delegates expressing his enthusiasm for the upcoming discussions on Indian cultural legacies and their modern adaptations. In her address, Prof. Ranjana Aggarwal, emphasized the importance of the SVASTIK initiative and shared its impact through the dissemination of engaging stories across multiple languages. Keynote lecture was delivered by Dr. Mande, who emphasized on the synergy between traditional knowledge and modern science, and the Chief Guest, Prof. K. K. Aggarwal, advocated for interdisciplinary approaches and global recognition of traditional knowledge (TK). Both leaders called for a paradigm shift in viewing TK not merely as an ancient relic but as a vital contributor to contemporary innovation. SVASTIK publications, including abstract book and digital flipbooks in Hindi and Punjabi “Treasure of Indian Traditions: A Journey through Scientifically Validated Indian Traditional Knowledge” were also released during the inaugural ceremony.



Fig. 1 (a) Lamp lighting at the event, (b) book launch by the eminent guests

The first session of *Shiksha Evam Darshan*, bridging past and present by integrating pedagogies and philosophies in modern education, commenced under the chairmanship of Prof. V. P. N. Nampoori from

University of Cochin, Cochin. His talk facilitated enriching discussions on education, philosophy, and sustainable knowledge transmission. The keynote speaker, Prof. B. N. Jagatap, Senior Professor at IIT Bombay, explored the ancient Indian education system in relation to modern practices. He highlighted the importance of inclusive education and a holistic learning approach encompassing engagement, exploration, explanation, elaboration, and evaluation. Prof. Raj Nehru, Vice Chancellor of Shri Vishwakarma Skill University, offered insights into the psychological and philosophical aspects of education, referencing concepts from *Pratyabhijna Hridayam*, a key text of Kashmir Shaivism. He emphasized the role of self-awareness, emotional intelligence, and self-realization in fostering harmony. Dr. Ganti S. Murthy, National Coordinator, IKS, discussed the transformative potential of ancient education models, emphasizing their relevance to modern educational frameworks and aligning with the Government of India's efforts to rejuvenate traditional knowledge systems.

The Panel discussion on "Ethics in Traditional Knowledge Research and Communication," chaired by Dr. Arvind Ranade, Director of NIF, Gandhinagar, tackled three pivotal themes: defining traditional knowledge (TK), research methodologies, and ethical communication. Dr. Ranade emphasized the need for equitable practices in patenting TK and addressing the disparities between the Global North and South. Panelist included, Dr. Viswajanani Sattigeri (CSIR-TKDL, New Delhi) advocated for sensitivity towards local communities in codifying TK, ensuring equitable acknowledgment in IPR contexts., Dr. Rashmi Sharma (DST, New Delhi) highlighted the digitization of ancient manuscripts and validation of TK, linking scientific rigor to holistic well-being research, Dr. C. S. Aravinda (Bhāvanā Magazine, Bengaluru) discussed the role of traditional mathematical storytelling in preserving ancient knowledge, and Dr. Sujit Bhattacharya (CSIR-NIScPR, New Delhi) called for utility models to document grassroots innovations and legislative frameworks to protect cultural expressions.

The session on *Paramparik Krishi Evam Bhojan: Science behind Traditional Agriculture and Cuisine* was chaired by Dr. Yelloji Rao Mirajker, International Convener of the GIST Forum, and co-chaired by Prof. Amarjeet Kaur Malhotra. The session had invited lectures by Ms. Barsha Lekhi (UNESCO) who raised questions about modern dietary habits, urging alignment with Ayurveda's holistic principles; Dr. T. R. Ramaprasad (CSIR-CFTRI, Mysuru) who shared CSIR-CFTRI's efforts in transforming traditional food knowledge into marketable products under the *Ayush Ahaar* initiative; and Dr. Sudesh K. Yadav (CSIR-IHBT, Palampur) who highlighted sustainable agricultural practices and the critical need to address land degradation and groundwater depletion.

Prof. Amogh Gupta, Former Chairperson, SPA, New Delhi, chaired the session on *Vastukala: Harmonizing Traditional Architecture with Modern Design*. Keynote speaker of the session was Prof. Ramesh Srikonda (Director, SPA, Vijayawada) who highlighted climate-responsive designs in traditional Indian architecture, referencing examples such as Kerala's Nalukettu and Rajasthan's Havelis. Dr. N. Gopalakrishnan (Former Director, CSIR-CBRI) discussed the geometrical ingenuity of traditional domes and their modern interpretations using advanced tools.

In a session on *Prachin Rasayan, Dhatukarm, Ganit evam Bhautiki-Integrating Ancient Sciences into Modern Disciplines* chaired by Prof. B. N. Jagatap, experts revisited India's contributions to fields such as metallurgy, mathematics, and physics. Keynote speaker, Prof. V. P. Nampoore introduced "*Bhoota Samkhya Method*" and the "*Katapayadi* number system" along with the mathematical contributions of Madhava of the Kerala School. Prof. Vibha Tripathi (BHU, Varanasi) examined the potential revival of traditional iron technologies, Dr. Ramanuj Narayan (Director, CSIR-IMMT) explored sustainable mineral processing techniques rooted in traditional practices, and Shri R. Gopu (Varahamihira Science Forum, Chennai) shed light on algebra concept in India and also linked historical innovations in geometry to Harappan-era practices.

A workshop on traditional knowledge communication was conducted by Dr. Charu Lata, Dr. Paramananda Barman and the *SVASTIK* team. The workshop started with a brief on the *SVASTIK* initiative and focused on documenting and sharing traditional knowledge through publications, international conferences, and multilingual digital platforms. Hands-on workshop emphasized creating engaging, interactive content to popularize traditional wisdom.

On the second day of the conference, the *Arogya Vidya* session was chaired by Prof. Bhushan Patwardhan National Research Professor-AYUSH, SBPPU, Pune. He urged healthcare professionals to transcend personal egos and focus on the interests of patients, advocating for the adoption of exemplary healthcare practices to serve humanity. Prof. Mohammad Idris, former Dean and Head of the Faculty of Ayurveda and Unani Medicine at the University of Delhi, acknowledged the significant contributions of all keynote speakers during the session. Dr. Rabinarayan Acharya, (DG, CCRAS), stressed the necessity for an inclusive, integrated, and affordable healthcare framework that can inform future health policies, highlighting various policies supported by the National Health Policy and WHO strategies. Dr. N. Zaheer Ahmed, (DG, CCRUM), emphasized the importance of Unani healthcare, advocating for its preventive measures and the significance of scientific validation in research. Finally, Dr. N. J. Muthukumar (DG, CCRS) highlighted the potential of incorporating Siddha practices into contemporary healthcare, showcasing CCRS achievements in research and the introduction of digital tools to enhance healthcare communication across various platforms.

The session titled “*Jal, Paristhithiki Evam Paryavaran*” was chaired by Dr. Virendra M. Tiwari, Director of CSIR-NEIST, Jorhat, and co-chaired by Prof. Dharmendra Kumar from Gurugram University. This session underscored the vital role of Traditional Ecological Knowledge (TEK) in sustainable development. Prof. Saroj K. Barik from NEHU, Shillong, delivered a compelling presentation on TEK's applications in biodiversity conservation, sustainable design, and climate adaptation. He illustrated the synergy between traditional and scientific ecological knowledge using examples from northeast India, including sustainable bamboo forest management and the ecosystem services of sacred groves like Asha Van. Additionally, Prof. Sharad Jain, former Director of the National Institute of Hydrology, traced India's hydrological heritage from the Indus Valley Civilization to Vedic literature, highlighting ancient hydraulic engineering marvels and emphasizing the enduring relevance of traditional water conservation practices in addressing contemporary resource challenges.

The session on *Arogya Vidhya-II- Reviving Ancient Healing Traditions* explored the integration of Yoga, Homeopathy, and Sowa Rigpa into modern healthcare chaired by Dr. A. Raghu (Dy DGHS (Ayush) MoHFW, Delhi). Dr. Sunil S. Ramteke (DDG, CCRH) discussed the global acceptance of homeopathy, its preventive therapeutic strategies, and its unique case recording methodology. Meanwhile, Dr. I. N. Acharya emphasized the mental health benefits of yoga, particularly pranayama and meditation, supported by research showcasing its impact on stress reduction and immune enhancement. Dr. Padma Gurmet (Director, NISR, Leh), elaborated on Sowa Rigpa, a Himalayan medical system, its diagnostic techniques, and the integration of trans-Himalayan medicinal plants.

The session on *Aushadhi Vidya* featured diverse insights into drug development and was chaired by Dr Chandrabhash Narayan, Director, Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram. Dr. Wend Wendland (WIPO, Geneva) presented the *WIPO Treaty on Genetic Resources and Associated Traditional Knowledge*, emphasizing transparency and the role of databases in protecting intellectual property. Dr. Abdul Kareem (TDU University, Bengaluru) showcased the development of an Ethnobotanical Herbal Pharmacopoeia, detailing methodologies for baseline surveys, geospatial analysis, and community-based validation. These efforts exemplify the importance of documenting and preserving traditional knowledge for future applications. Dr G Geetha Krishnan, WHO Traditional Knowledge Centre, Jamnagar articulated the promotion of traditional medicine through the lens of evidence-based communication, critical thinking, and health literacy.

Prof Vibha Tripathi, chaired a panel discussion on the “Scientific Validation of Traditional Knowledge: Challenges and The Way Forward”. The event brought together experts to discuss how traditional knowledge can be integrated into various fields, including healthcare, agriculture, education, and sustainable living with the necessity of preserving TK while adapting it to contemporary issues. Panellists included Prof (Dr) Rama Jayasundar (NMR Division, AIIMS, New Delhi) who highlighted three primary research objectives: validating evidence, integrating traditional knowledge into modern scientific practices such as drug discovery, and enhancing healthcare systems through research, Dr. Uthra Dorairajan (DDGVD College, Chennai) who stressed the urgent need to improve science education in Kerala, identifying challenges in creating engaging materials that align with NCERT standards, and Dr. Rabindra N. Padariya, (Joint Director (Ext.) IARI, Delhi) who emphasized the importance of interdisciplinary collaboration and community-based validation for authenticating

Traditional Knowledge. Panellists also discussed the legal and ethical challenges surrounding traditional knowledge, highlighting the importance of collaborating with local governments and stakeholders to effectively preserve indigenous practices.



Fig. 2 (a,b) Sessions headed by distinguished speakers (c) panel discussion, (d,e) discussion between participants and judges at poster and oral presentation, (f) exhibitions at CDTK event

The concluding session of the conference was marked by profound reflections and a reaffirmation of sustainability and tradition. Prof Ranjana Aggarwal welcomed the chief Guest, Padma Bhushan Prof Anil P Joshi, HESCO Dehradun, and Guest of Honor Prof Vibha Tripathi, BHU. Prof Aggarwal gave a warm recognition to all the experts and contributors of CDTK-2024 as well. Prof Dinesh Kumar acknowledged the collaborative efforts between Gurugram University and CSIR-NIScPR, stressing the urgent need for sustainable practices over material affluence. Prof. Joshi delivered an inspiring address, emphasizing the preservation of Indian traditions amidst Western influences. Dr. Charu Lata summarized the conference's achievements and highlighted the valuable contributions of exhibitors. Dr. Dhirender Kaushik proposed a heartfelt vote of thanks, emphasizing collaboration and future engagement.



Fig. 3 (a) Valedictory session at CDTK-2024 event, (b) VC of Gurugram University, (c) Chief Guest-Padam Bhushan Prof Anil P Joshi, (d) Director of NIScPR

Over 490 attendees from 19 Indian states, two union territories registered/participated for the conference, alongside international representation from the USA, Nepal, and Switzerland. With 103 selected presentations (29 oral and 74 poster) from 134 submissions, the event underscored the multidisciplinary nature of traditional knowledge. The conference also boasted of a vibrant exhibition pavilion where various CSIR labs including CSIR-IHBT, CSIR-CIMAP, CSIR-CDRI, CSIR-IMMT, CSIR-NIScPR and NIScPR-SVASTIK participated with great enthusiasm and showcase their TK-centric technologies and knowledge products.

In conclusion, all the scientific sessions, oral and poster presentations, and the exhibition pavilion, encapsulated the core themes of the conference, celebrating its accomplishments while reiterating the essential importance of traditional knowledge across various disciplines. Delegates were left inspired to carry on the momentum, with the influential recommendations from eminent experts encouraging a commitment to impactful and meaningful efforts in the future.

The major recommendations from CDTK 2024 are as follows:

- Traditional knowledge content may be included as a mandatory course in educational syllabi at all levels to facilitate knowledge dissemination across India and other countries.
- All traditional knowledge-based publications may be submitted to CSIR-NIScPR to prevent repetitive information distribution, optimizing time and resources.
- Folk health systems may be integrated with modern healthcare, identifying practitioners and the standards governing their practices. For this institutional support mechanism, including clinical establishments, hospitals, and dispensaries in rural areas may be explored.
- Foster awareness of both traditional and modern healthcare systems through the dissemination of trustworthy information to the population.
- The economic potential of traditional knowledge and practices should be enhanced starting from the grassroots level, thereby raising awareness among local communities about the valuable resources they possess.
- Promotion of critical thinking in the community through social media and scientific communication may be focused upon to effectively address the fast-paced spread of fake news, fabrication and misinformation.
- Sustainable traditional farming techniques may be strategized and adopted.
- Marketing of flavorful products sourced from the rich variety of the traditional Indian diet while also bringing attention to the benefits of foods that are often undervalued till date may be supported.
- Sufficient evidence base through systematic data synthesis of scientifically sound and robust clinical studies of traditional medicine systems may be generated. The data should be accessible for all and also due attention should be given attention in development and revision of standard operative procedures (SOPs) for functional integration.
- To develop a strategy for cross referral of patients among AYUSH and contemporary medicine facilities in order to codify the Indian Knowledge systems under a broader spectrum.
- To utilize traditional knowledge as a means of advancing the economy through the development of start-ups and innovative projects.