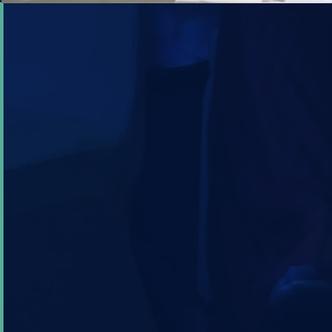


GEOSMART INDIA 2023

17 – 19 OCTOBER 2023, HICC
HYDERABAD, INDIA



GEOSPATIAL INFRASTRUCTURE AND DIGITAL TWIN: POWERING NATIONAL ECONOMY



REPORT 2023



Conference Overview

GeoSmart India's 23rd edition, produced and centred and staged by Geospatial World, has successfully showcased the immense potential of geospatial technologies converging with emerging sectors across the Indian economy. Highlighting areas such as agriculture, water resources, mineral exploration, land management, space economy, and urban development, the event garnered substantial support from government ministries, state departments, industry leaders, public policy influencers, civil society, end-user communities, and global organizations. This collaboration facilitated a platform for knowledge exchange, industry trend awareness, and enhanced cooperation.

This edition emphasized geospatial technology as a transformative catalyst in the emerging era, where productivity, efficiency, transparency, and compliance are paramount. The precise measurement, risk monitoring, modeling, and management of geospatial information emerged as critical components for positive change.

By uniting government bodies, technology pioneers, startups, and more, GeoSmart India provided a platform for national dialogues, fostering an ecosystem aimed at shaping a progressive future for India, or Bharat.

With the theme "Geospatial Infrastructure and Digital Twin: Powering National Economy," the vision for GeoSmart India 2023 revolves around bolstering India's stride towards a Trillion-Dollar Economy. Geospatial infrastructure and digital twins play a pivotal role in enabling informed decision-making across sectors, thereby empowering the national economy. This symbiotic relationship connects people, processes, data, and technology to achieve sustainability. To realize the 'Amritkaal' vision and transform India into a digitally advanced, sustainable nation, it's imperative to unite stakeholders and build a real-time knowledge infrastructure, leveraging the potential of digital technologies in tandem with geospatial advancements.



The geospatial industry is forecasted to reach \$1 trillion but if you analyse its versatile sectoral uses and applications, it has already crossed A Trillion Dollar Mark. - **Sanjay Kumar, Founder and CEO, Geospatial World**



Conference Achievement

- Hosted Grassroots Program on Relevance of GIS and Mapping with Local Villagers Across Country
- Industry-Specific Sessions on Land, Agriculture, Water, Space, Urban Development, and Mineral and Explorations
- Discussed Pressing Issues & Way Forward – Disaster Management, Environment and Climate Change, ESG and Credit Linkages to Empower Economy
- Highlighted TechSustain India Highlighting Technology Driving Sustainable National Development through Innovation
- Policy, Capacity Building and Women in Geospatial Discussions
- Government Ministerial Participations from Department of Science and Technology, National Remote Sensing Centre, Survey of India, Telangana State, and So Many More
- Participation from UAE, Saudi Arabia, Japan, USA, Singapore, Sweden, Austria, and more

Conference Highlights

12+

Programs

60+

Sessions

30+

Plenary Talks

20+

Awards

200+

Presentations

2000+

Participants

40+

Countries

60+

Exhibitors

59

Start-Ups

25+

Academic
Institutes

520+

Private
Organizations

162+

Government
Bodies

Countries



Austria



Bahrain



Bermuda



Bhutan



France



Germany



Iceland



Italy



Japan



Korea-South



The
Netherlands



Russia



Singapore



Sweden



Taiwan



United Arab Emirates



United
Kingdom



United States
of America

Conference Objectives

- Interactive and Collaborative Forums
- Policy and Technology Leaders Forum
- Best Practices, Success Stories and Inspiring Start-ups
- Exchange and Knowledge at National, Regional and Global Levels
- Connecting Communities of Technologies and Embracing Indian Economic Sectors
- Converging Process and Practices
- Demonstrating Value and Utility of Geospatial Infrastructure in Emerging Technologies



Sanjay Kumar



Rajan Aiyar



Agendra Kumar



Vishal Dhupar



G Asok Kumar

Inaugural Session

The begin of the season first session by **Sanjay Kumar, Founder and CEO, Geospatial World** addressed by stating "The geospatial industry is forecasted to reach \$1 trillion but if you analyse its versatile sectoral uses and applications, it has already crossed A Trillion Dollar Mark."

He continued, that the post-COVID-19 era has triggered a significant paradigm shift, giving rise to a profound transformation. Various ecosystems are converging to establish a sophisticated geospatial infrastructure. Digital twin technology and geospatial infrastructure are not just channels for innovation; they are the essential catalysts

driving future growth into unexplored territories.

"Every output is dependent on productivity, efficiency, transparency, and compliance. All of our sustainability goals hinge on monitoring, transparency and compliance." He concluded by stating that in the past few years, there have been a lot of enabling space and geospatial policies, however now there is a need to go beyond policies towards comprehensive strategies.

Rajan Aiyar, Managing Director at Trimble India, emphasizes the transformative power of geospatial data, describing it as "IT data on steroids" due to its integration of field positioning. Mr.

Aiyar underscores the pivotal role of geospatial information across industries, citing its applicability from agriculture to mining. He positions "positioning" as the fifth utility, following water, fire, electricity, and the internet, with Continuously Operating Reference Stations (CORS) as a game-changer, democratizing positioning and accelerating geospatial infrastructure adoption.

Highlighting the significance of a Common Data Environment for decision-making, he notes the role of the fifth utility in creating digital twins. In his conclusion Mr. Aiyar advocated for the responsible, innovative, and collaborative

management of geospatial data infrastructure. **Agendra Kumar, Managing Director, Esri India** said, "The national geospatial policy has focused not only on Digital Twins but also on fostering education amongst people for the technology. When you create geospatial infrastructure technologies in private entities, governments, it becomes a system of systems." He also spoke at length about the Indo ArcGIS that has streamlined the Indian Content with 800 layers of data put together.

Vishal Dhupar, Managing Director, NVIDIA India said, "We are standing at the cusp of fusion of three technologies: Artificial intelligence, intelligent content,

and User Interface". He added that earlier computers were used to retrieve data but now we use it to digitize as well as generate data through generative AI technology.

G Asok Kumar, Director General, National Mission for Clean Ganga (NMCG) spoke from a geospatial end-user perspective. He said, "We are the biggest users of GIS and geospatial technology in cleaning Ganga. We mapped the entire river, and identified all the entry points of pollutants to the river. Besides all the risks were identified and rectified. With the digital infrastructure and real time monitoring in place, we are able to take timely decision and clean the Ganga."

“With the digital infrastructure and real time monitoring in place, we are able to take timely decision and clean the Ganga - **G Asok Kumar, DG, NMCG**”



Lt Gen Girish
Kumar VSM (Retd)



M
Raghunandan



Anoop
Singh



Alok Prem
Nagar



Rama
Devi Lanka



Kundu
Biswaketan

Geospatial Infrastructure and Digital Twins: Powering National Economy

The panel of experts delved into a myriad of issues and obstacles within sectors like agriculture, mining, forestry, and rural development. The session with **Lt Gen Girish Kumar** as moderator noted the importance of geospatial technology across the sectors in India -

M Raghunandan Rao, IAS, APC, Secretary to Govt., Agriculture Cooperation Dept. Govt. of Telangana said, we were a dry arid state with rural migration which resulted in negative growth in agriculture practices. However, since 2014, there has been rapid transformation of agriculture in the

state. Earlier, gross cropped area was 1.2 crore acres, whereas, now we have 2.3 crore acres. Similarly, before 2014 the state generated 69 lakh tones paddy, which now stands at 3 crore tones. In most rural India, the decisions of farming practices come from experiences. But we want to aid this decision-making with AI and other technology to catalyse precision farming.

Anoop Singh, Director General Forest Survey of India, the forest are the only green machines that produce oxygen. We cover wall to wall scanning of forests around the area and we have been using

remote sensing since 1987. Forest Survey Department is planning use of Machine Learning and Artificial intelligence to map patterns and identify deforestation.

Alok Prem Nagar, Joint Secretary at the Ministry of Panchayati Raj, addressed various facets of Panchayati Raj, land ownership, and the potential applications of Digital Twin technology in rural India. He emphasized that Digital Twin technology could enhance agriculture practices, aid in disaster mitigation, and facilitate efficient land management, the implementation of Digital Twin Model would enable better

organization and preparedness to mitigate any adverse effects.

Rama Devi Lanka, Director of Emerging Technologies and Officer on Special Duty (OSD) at the ITE&C Department, Government of Telangana, pointed out critical gaps. Firstly, there is a lack of data sharing between departments, and secondly, the exchanged data often gets lost in translation. She highlighted the active exploration of technologies like AI, drones, and blockchain to provide assistance to farmers in their agricultural activities.

Kundu Biswaketan, Vice President, Reliance Jio Platform, explained that currently Reliance Jio is the largest conglomerate of geospatial utilisation across all the sectors worldwide especially in India, right from mapping the streets to energy sectors to infrastructure development and so on. The various ways in which Reliance Jio has been using GIS to map, deploy, and expand its retail, renewable, and telecom arms, soon it can be seen in marking its benchmark in capitalising the GIS as a the frontline technology.

“ In most rural India, the decisions of farming practices come from experiences. But we want to aid this decision-making with AI and other technology to catalyse precision farming - **M Raghunandan Rao, IAS, APC, Secretary to Govt** ”



AS Kiran
Kumar



Maj Gen (Retd.)
Clint Crosier



Dr Mahaveer
Singhvi



Prateep
Basu



Motoyuki
Arai



Sreeramam
G V

Earth Observations and Geospatial Analytics: Enhancing User Adoption and Industrial Productivity

Earth observations (EO) and geospatial analytics (GA) are powerful tools that can be used to enhance user adoption and industrial productivity. EO data provides us with a unique perspective on our planet, allowing us to track changes over time and identify patterns and trends. GA uses this data to create insights that can be used to make better decisions.

In the second plenary session of the GeoSmart India Conference 2023, a panel of experts discussed how EO and GA are being used to

transform industries and improve lives. **AS Kiran Kumar, Member Space Commission** introduced the panel.

Maj Gen (Retd.) Clint Crosier, Director, AWS Highlighted the rapid growth of the space industry and the increasing importance of space data in enriching life on Earth. The space industry is rapidly growing and transforming. A new era of human spaceflight is dawning. Satellite launched into orbit will quintuple over the next decade.

Dr Mahaveer Singhvi, IFS, Joint Secretary, Ministry

of External Affairs said, "Geospatial Technology is also playing an important role in Sustainability and Urban Development, stopping Desertification, Mitigating Disasters etc. There should be a focus on strengthening the geospatial knowledge infrastructure and focus on capacity building. Coordination of India's position on global governance norms, standards, architecture, and rules for emerging technologies is the third facet of NEST.

According to **Sreeramam G V, CEO, NeoGeoInfo Technologies Pvt. Ltd Earth**

observation (EO) is the acquisition of information about the Earth and its atmosphere from a distance, typically from aircraft and satellites. EO data can be used to monitor crop health, identify pests and diseases, and assess crop yields, condition of bridges, roads, and other infrastructure assets.

Prateep Basu, CEO, Satsure, highlighted the potential of EO applications like asset monitoring in India. He said, "EO data should be made more affordable and accessible to individuals." EO data can be used to track and monitor natural disasters such as

floods, hurricanes, and earthquakes. This information can be used by government agencies and disaster relief organizations to coordinate relief efforts and protect lives.

Motoyuki Arai, CEO, Synspec said EO and GA are powerful tools that can be used to transform industries and improve lives. By making EO data more affordable and accessible, and by investing in research and development, we can accelerate the adoption of EO and GA and reap the many benefits that they offer in India.

“ Earth observations (EO) and geospatial analytics (GA) are powerful tools that can be used to enhance user adoption and industrial productivity. - **AS Kiran Kumar, Member Space Commission** ”



Ananya Narain



Kai Umino



Kaushik Chakraborty



PV Rajasekhar



Amal Jaiswal

Digital Twin Strategy for Indian Infrastructure

The third plenary session at GeoSmart India 2023 was held on the topic of the Digital Twin Strategy for Indian infrastructure. The panel featured experts from the geospatial industry who discussed the need for a strategy focusing on the national digital twin.

The session was moderated by **Ananya Narain, VP-Commercial Consulting, Geospatial World**.

Kai Umino, President, Topcon Asia emphasized the key trends in

the industry, data standardization, and technology adoption to catalyze the Digital Twin Strategy. Capturing on-field real-time data is paramount.

Kaushik Chakraborty, Senior VP, APAC, Bentley Systems, said, "efficiency can be enhanced through Infrastructure Intelligence, a concept focused on extracting crucial information and data during the design phase, particularly information that is challenging to uncover".

According to **PV Rajasekhar, Additional Survey, Eastern Zone Survey of India**, to make a digital twin a reality, we need to have a platform where different information from sensors can be analysed and actionable actions can be derived from that. It is a work in progress.

Amal Jaiswal, Head – Digital Business Enterprise, Siemens said, "much of the infra in the country is running with Siemens devices. We work on a lot of critical infra such as trains, railways, highways

etc. The more we do that and approach them with a digital transformation in our daily lives, in 2 year we can reach the golden standard of best construction business practices".

“ In the realm of Digital Twin Strategy, the synergy of data standardization and unwavering technology adoption becomes the propellant, propelling innovation and precision into the future of industries. - **Kai Umino, President, Topcon Asia** ”



Sanjay Kumar



SP Agarwal



Sudheer Singh



Kranthi Chand



Rakshit Bhatt

Developing Indian Space and Geospatial Industry in Partnerships for National and Global Economy

India's journey in the field of space exploration dates back to 1975, with the successful launch of its first satellite, Aryabhata. Since then, the Indian Space Research Organisation (ISRO) has made remarkable strides in the space sector, leading to India's recognition as a fully developed space program on the global stage. The success of the Indian space and geospatial industry hinges on partnerships that prioritize the end user's needs, commercialization, innovation, democratization of companies and data, and the promotion of Indian space technology. These efforts will collectively fuel the growth of these industries, creating jobs, boosting economic growth, and helping India achieve its national development objectives.

Sanjay Kumar CEO of Geospatial World, initiated a discussion amongst the panel on the growth of the Indian Space and Geospatial Industry through collective combined partnerships.

Sudheer Singh, Director, Outreach and Capacity Development, ISRO, emphasizes the importance of understanding the end-user's needs, with particular regard to nurturing both the user and infrastructure.

SP Agarwal, Director, North East Application Centre, underscores the demand for private players

in the North East Region and encourages them to become solution providers rather than mere data providers

Kranthi Chand, Head – Strategy & Special Projects, Dhruva Space, envisions mechanisms to create a base for space technology.

Rakshit Bhatt, Co-Founder and VP of Product Development, GalaxEye, advocates for democratization of companies to ensure widespread access to space tech innovation.

Ramya Mohan, Chief Strategy Officer, Cyient, highlights the ever-evolving nature of technology and how data capture is a key driver for adaptation.

Saurabh Rai, CEO, Arahast Technologies, emphasizes the need for system integrators who understand the landscape and can hire solution providers.

Deven Laheru, CEO, ScanPoint Technologies, champions public-private partnerships, focusing on societal benefits rather than just revenue models.

Abhilasha Purwar, CEO, BlueSky Analytic, emphasizes the government's reliance on private players for innovative solutions.

Neel Mehta, Co-Founder, Asteria Aerospace Ltd, calls for the democratization of data, making it freely accessible to all.



Ramya Mohan



Saurabh Rai



Deven Laheru



Neel Mehta



Abhilasha Purwar

“The success of the Indian space and geospatial industry hinges on partnerships that prioritize the end user's needs, commercialization, innovation, democratization of companies and data, and the promotion of Indian space technology - **Sudheer Singh, Director, Outreach and Capacity Development, ISRO**”

Geospatial Knowledge Infrastructure Support National Development: Enabling and Augmenting Sectoral Geospatial Programs

The national geospatial policy launched in 2022 identifies geospatial data and knowledge as crucial national infrastructure that provides social, economic, and environmental value, thereby enabling sustainable national development mandates. The citizen-centric policy lays down an overarching framework for holistic development of the geospatial ecosystem underpinned by GKI and IGIF principles in the country, enabling the move towards digital economy and improved services to users. The policy envisions improving availability of and access to better location data across organizations and sectors to enable innovations and encourage enterprise by 2025.

The program consists of dedicated sessions on geospatial strategies for 4 national development priority sectors – urban development, land administration and rural development, forestry and environment and geology and mining. Among the national development priority sectors, the geospatial market sizes in the mentioned sectors are the largest and are expected to grow further going forward.

KEY TAKEAWAYS:

- At present the government investments for the National geospatial Agencies is spent heavily on developing in-house GIS software and data-integration platforms and sourcing hardware equipment for centrally and state-allocated projects such as SVAMITVA, National Hydrology Project (NHP), National Infrastructure pipeline (NIP) etc.
- Analysis of the potential impact of the policy highlights a missed opportunity and pushes back the Indian geospatial economy by almost a year. However, the Indian geospatial economy will still grow if the government implements and formalizes the policy in early 2023 to realize its benefits sooner than later.
- There is a need for national geospatial agencies to evolve from passive provider of map/geo data to proactive leadership and facilitator role.
- There is a need to invest in digital infrastructure in the digital era, with requirement of higher computing power, data storage and communication network speed for various applications of digital infrastructure like smart cities, smart healthcare, smart retail, and intelligent transportation. Digital infrastructure is critical for delivery of services to remote areas.
- One common challenge which was observed across all the sectors in two day sessions towards efficient implementation of policy components was, various institutions working in silos. Thereby, if we manage to break down these silos and promote inter-agency, inter-state cooperation for accurate data sharing and making it as a goal for better governance and public service delivery.
- Other major challenge observed across all the prime development sectors is the lack of skill. So, there is a need to support an environment that will enable entrepreneurial, industrial, academic and professional capacity building in all the sectors, which will lead to knowledge and economic enhancement.
- Some identified gap areas identified in forestry and environment sector are: Carbon mapping and cross sectoral carbon mitigation measures with state specific plans, man animal conflict mapping, adoption of LIDAR/RADAR technology and uniformity of the investment.
- Some identifies key challenges and gap areas in the geology and mining sector are: Private partnership, specialized Exploration programs, data processing capability, sector specific geospatial strategy, extraction technology.

Co-Organized by



ALL PANELISTS AND SPEAKERS

- **A.S. Kiran Kumar**
Member, Space Commission
- **S. K. Sinha**
Addl Surveyor General, Survey of India
- **Dr. Debpriya Dutta**
Advisor, DST
- **M. Jayachandran**
Program Director, TNGIS, Tamil Nadu e-Governance Agency
- **Nilay Nishant**
Scientist (SE), NESAC, DOS
- **Vinay Kumar**
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- **Rajiv Mishra**
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- **Mohd Monis Khan**
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Professor and Chairperson, centre for the study of regional development, JNU
- **Abhyudaya Saxena**
Head, GIS and data processing division, Aereo
- **Dr. Namita Wahi**
Founding director of Land Rights initiative & Senior Fellow at the Centre for Policy research
- **Milind Wadodkar**
Chief Soil Survey Officer, SLUSI
- **Ashish Kumar Jena**
Joint Secretary cum Joint Special Relief Commissioner, Govt of Odisha
- **Sajeevan G**
Senior Director, C-DAC
- **Dr. Raj Kumar Khatri**
Former Additional Chief Secretary and Coordinator
- **Vishnu Chandra**
Advisor, MoPR & Former DDG NIC
- **Dr. Stutee Gupta**
Scientist (SF), Rural Development and Watershed Monitoring Division, NRSC
- **Sanjay Chakraborty**
head Technology, Adani Natural Resources
- **Debkumar Bhattacharyya**
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Director, GKI, Geospatial World
- **Ruban Jacob**
Associate Director, GKI, Geospatial World



Modernization of Land Administration and Its Socio- Economic Impact

Land and Property program focused on the impact of modernization of land administration and the existing challenges along with the requirement of schemes such as SVAMITVA to be rolled out for urban areas as well. The best practices and innovative ideas were discussed along with existing technological solutions for addressing the challenges in the sector. Land and Property program in GeoSmart India 2023 had very insightful discussion in six sessions including Recommendations and Way Forward with the experts from Government, Private sector, Academia, Start-ups, and Knowledge Hub. The program covered the discussion on-

Opening Session:
Modernization of Land Administration & Its impact on national development

Geospatial enabled government initiatives impacting land economy and national development

Evolving role of geospatial and frontier technologies in enabling sustainable land administration

Transition from Data to Knowledge applications for land administration

Integrated cadastre and registry

Collaborations in land and property sector: existing challenges and success stories

The geospatial technology market for the Rural Development and Land Administration Sector in India is currently estimated to be **INR 1100 crores in 2022**, and is expected to grow to **INR 1500 crores in 2025**.



KEY TAKEAWAYS:

- The utilization of blockchain technology
- GIS for fostering partnerships with Line Departments, Agencies, Industry, and Academia to promote knowledge exchange, capacity building, and social impact
- Facilitating monetisation of properties and enabling bank loans and other financial facilities.
- Reducing property related disputes, thereby enabling faster transaction and settlement.
- Utilization of data originated under SVAMITVA scheme may be used for tracking Sustainable Development Goals, Swachch Bharat Abhiyaan, Disaster Management Plan and much more.
- Support land surveyors and legal professionals by accurately aligning historical land survey data with current satellite imagery to resolve property boundary disputes.
- Reduction of collateral damage costs of infrastructure development
- Block Chain / AI based Central repository of RoRs maintained by Government.
- Establishment of Digital Land Settlement Survey [DLSS] office
- High quality and timely available geospatial information leads to land tenure security

Cloud Partner



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- **Lt Gen Girish Kumar**
VSM (Retd), Advisor, Government of Haryana
- **Deepti Dutt**
Head - Strategic Initiatives - Public Sector, AWS
- **Shri Dr. Piyush Singla**
IAS, Secretary to Government Revenue Department, Jammu & Kashmir
- **PV Rajasekhar**
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- **Jaya Saxena**
Scientist 'F' & Head, NRSC (ISRO), Hyderabad
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Associate Vice President, IIC Technologies Private Limited
- **Chirag Sharma**
CEO, Drone Destination Ltd
- **Abhas Supakar**
Sr. Vice President, Technology, SPARC India
- **Javed Shaikh**
Technical Director
QuantaSIP, G.I.S. PvtLtd



Transforming the Future of Indian Agriculture

Discussion under all theme circled around the major components of agriculture industry, technologies used from farmers to the food in our plate, challenges and struggles faced by stakeholders and farmers in the process, and of course the possible solutions to address those challenges.

Geospatial technologies and emerging technologies especially IoT, AI, and Big data analysis are found to be the part of major components of Smart Farming apart from soil, crop, water, climate during all sessions. These technologies are being adopted at various phases of the workflow but need to create more awareness towards the adoption of technologies so that it must be ensured about the use of right technology at the right time and place and for the right purpose.

Climate resilience (one of the components to drive digital agriculture) and grass root level changes for farmers must be addressed in policy and strategy along with the market and technology considerations so that it can be transformed into an integrated ecosystem for farmers, stakeholders, governments, users, academia, and researcher to contribute to the sustainability and socio-economic growth in the country.

Aquaculture is the fastest growing sub-sectors of Agriculture and Farming with the use of Geospatial technologies and supported by Blue Growth Strategy by Government of India. This sub-sector can also evolve towards the economic contribution if addressed at the initial stage of sector transformation.

To reduce the challenges and achieve every goal can only be possible through an integrated ecosystem and collaboration within the industry and cross industry between governments, private sector, academia, knowledge hub, and start-ups.

Agriculture and Irrigation program in GeoSmart India 2023 had very insightful discussion in six sessions including Recommendations and Way Forward with the experts from Government, Private sector, Academia, Start-ups, and Knowledge Hub. The program covered the discussion on:

Digital Agriculture and Irrigation

Food Security, Future and Supply Chain

Seeds of Change: India's Approach for Affordable Agri-Innovations

Credit Linkages and Funding Support in Agriculture

Data Analytics & Emerging Technologies

Knowledge Partner



Supporting Partners



Supporting Government Partner



KEY TAKEAWAYS:

- Emerging and upcoming Start-ups must come with the technology collaboration in Agriculture.
- Water management requires to address in Agriculture sector by using new technologies.
- Collaboration must increase between Government, Academia, and Private Stakeholders even between Agriculture and Non-Agriculture businesses.
- Integrated agriculture infrastructure is the need for Agriculture and Food Security to reduce the sectoral challenges.
- Affordability of technology, customization of solutions, lower investment cost, and providing right knowledge must be addressed to ground level farmers to empower them.
- Initial investment and trust building path are struggle for Start-ups and incubators.
- Policy and strategy should be reformed to evolve the Agriculture in terms of technology, credit linkage, and funding.
- New talent engagement is also one of the requirements.
- Combination and collective farming are one of the solutions to evolve the sector which must include technology affordability, technology adoption, reachability to farmers, and integrated farming systems.

ALL PANELISTS AND SPEAKERS

- **Deepak Pareek**
Agriculture Economist
Agropreneur of India
- **Vijay Nadiminti**
CEO, AgHub
- **Vishala Reddy Vuyyala**
Founder, Milletbank
- **Dr Brijendra Pateriya**
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- **Dr Kuppusamy**
Head- Regulatory Affairs & Product
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- **Himanshu Asthana**
General Manager, SIDBI
- **Dr NA Vijay Avinashilingam**
Addl. CEO, a-IDEA and Principal
Scientist, ICAR-NAARM
- **Vinod Kumar Samanthula**
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Post-Doctoral Fellow, EWRG, CES,
IISc (Indian Institute of Science)
- **Jigar Gupta**
RagaAI
- **Paritosh Tripathi**
Chief Operating Officer (COO),
a-IDEA



New Green for Life: Lifestyle for Environment

Understanding and addressing climate change requires a critical focus on long-term observations and climate data records (CDRs). Integrating data from satellites, ground-based observations, and airborne sensors is crucial for generating climate-related parameters. Geostationary satellites play a vital role in mapping climate change impacts. By incorporating these elements into educational programs and community outreach, individuals can actively contribute to a sustainable and climate-resilient future. India stands at a pivotal juncture, needing to choose between the trajectory of developed nations or creating alternative pathways for economic prosperity and carbon emission reduction. Geospatial information plays a crucial role in bridging data gaps for monitoring, measuring, and reporting environmental and carbon footprints in India.

KEY TAKEAWAYS:

- The Government of Andhra Pradesh employs geospatial technology, utilizing institutions like NCCR and NCSCM to address climate change and environmental concerns.
- Shoreline Protection and Vulnerability Assessment focus on assessing changes and erosion hotspots, especially in vulnerable areas like Godavari.
- Mangrove restoration efforts in Krishna and Godavari involve ecological engineering, ecosystem design, and exploration of carbon credits.
- Geospatial technology aids in assessing forest project impacts by sub-classifying forest density ranges, providing nuanced evaluations.
- SAR technology enables all-weather imaging, crucial for land displacement monitoring, flood damage assessments, and forest inventory management.
- Companies like HP contribute to climate action through recycled plastics, sustainable practices, and recycling programs like HP Planet Partners.
- WRI emphasizes green growth for sustainability, exploring opportunities in the service and industrial sectors for increased green job opportunities.
- Prozero Carbon offers a comprehensive platform for ESG compliance and Net Zero efforts by measuring, reporting, tracking, and offsetting carbon emissions.
- Iconic Studio introduces real-time 3D data generation with patented photogrammetric software, valuable for rescue operations and disaster impact analysis.
- Challenges include ensuring quality, accessible, and interoperable data and utilizing advanced technologies for sustainable futures.
- Urban Heat Island effect mitigation requires careful urban planning with a focus on incorporating green zones.
- RMSI highlights the role of Early Warning Systems in providing warnings about primary and secondary hazards for effective disaster management.
- Artificial intelligence and smart sensors are essential for operational hydrological modeling and timely alerts, especially in flood-prone areas.
- Remote sensing satellites enable tracking of river overflow, mapping flooded regions, and supporting emergency response efforts.
- IMD emphasizes the importance of climate literacy for building informed and resilient communities to address climate change challenges.

ALL PANELISTS AND SPEAKERS

- **Dr P.V. Chalapathi Rao**
Special Secretary, Environment, Forest, Science and Technology, Government of Andhra Pradesh
- **Swayam Mallik**
IFS, Deputy Project Director, Odisha Forestry Sector Development Society (OFSDS)
- **Prateek Sharma**
Vice Chancellor in – charge, Teri SAS
- **Abhinandan Arya**
VP, Head of Technology Solutions, Synspective
- **Vishal Goel**
HP LF Technical Consultant, HP
- **Dr Shikha Anand**
Senior Program Associate, WRI
- **Shantanu Sharma**
Founder and Head, Pro Zero Carbon
- **Charu Dhyani**
Founder & Chief Creative, Wudbox
- **Atul Jindal**
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- **Rajashree Bothale**
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- **Dr Palash Sinha**
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- **Jitendra Kumar Sahoo**
Senior Manager, PCI Software Pvt. Ltd.
- **Ramya Ragupathy**
Senior Product Owner, Humanitarian OpenStreetMap Team
- **Bharti Prasad**
Assistant Professor, Nitte Meenakshi Institute of Technology, Bengaluru
- **Pushpendra Johari**
SVP, Sustainability, RMSI
- **L. Mohamed Mansoor**
Additional Secretary to Government of Puducherry
- **Dr K. H. V. Durga Rao**
Group Director, Disaster Management Support Group National Remote Sensing Centre (NRSC), ISRO
- **Dr Nagaratna Kopparthi**
Scientist(E), IMD
- **D. Ranga Reddy**
Chief Engineer, Central Water Commission
- **RN Shankhua**
Chief Engineer, National Water Development Agency



Connected Information Ecosystems Enabling Integrated Urban Governance

In the context of India's rapidly growing urban populations, urbanization, city planning, utilities, and telecom networks have taken on pivotal roles in the quest for urban renewal. The overarching vision is to elevate the functionality and governance of urban areas, with a strong focus on citizen-centric inclusivity and the pursuit of a greener, more sustainable India through the integration of new and renewable energy sources. The Urban development program had focused deliberations on the below topics:

Connected Information Ecosystem
Enabling Integrated Urban
Governance

Digital Transformation Enabling
Resilient and Sustainable Urban
Development

National Geospatial Infrastructure
and its Impact on Urban
Development

KEY TAKEAWAYS:

- Geospatial technology integration enhances urban areas, making them more efficient, resilient, and sustainable, paving the way for smarter cities.
- Smart cities of the future demand a departure from outdated technologies and infrastructure, emphasizing the need for innovation and modernization.
- A data-driven approach facilitated by Geospatial Infrastructure empowers urban planners and policymakers to make informed decisions and engage citizens effectively.
- The Integrated Urban Data Exchange Platform (IUDXP) serves as a unified data portal, promoting seamless integration and sharing of both spatial and non-spatial data to optimize city services.
- The Urban Project Planning and Management (UPPM) tool streamlines the entire lifecycle of multi-agency urban projects, from concept to supervision, ensuring more efficient project delivery and management.
- Geospatial technology plays a pivotal role in addressing urban challenges such as traffic congestion, pollution, and resource allocation by providing real-time data and insights for better decision-making.
- The advancement of IoT (Internet of Things) and sensors within urban areas contributes to the creation of smart cities by enabling efficient management of resources, enhancing public safety, and improving overall quality of life for residents.
- Collaborative efforts between government agencies, private sector stakeholders, and the community are essential for the successful implementation of urban development and technology adoption initiatives, ensuring sustainable growth and urban resilience.
- The overall objective is to create a citizen-centric economy, where the economic development and opportunities are centred on the needs and involvement of the citizens.
- The above points discussed collectively aim to improve urban living conditions, promote sustainable practices, and ensure that urban development in India is people-focused and technologically advanced.



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ALL PANELISTS AND SPEAKERS

- **Dr S C Jayanthi**
Scientist, NRSC
- **Anwaar Al Shimmari**
Executive Director, FGIC
- **Sreeramam G V**
CEO
NeoGeoInfo Technologies Pvt. Ltd
- **Dr Sultan Singh**
Chief Geospatial Officer, Gurugram
Metropolitan Development Authority
- **Mohd Monis Khan**
Town & Country Planner, TCPO
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Channel Business Development,
Blue Marble Geographics
- **Sunil David**
Consultant
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- **Pranit Deshmukh**
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- **Dr Pradeep N**
GM – BD, Asteria
- **Pawan Panchpal**
Managing Director, SixD
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- **Brajesh Shrivastava**
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- **Reedhi Shukla**
Scientist/Engineer 'SE', NRSC/ISRO
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- **Urmi Bhattacharjee**
Digital Enterprise Business - Sales
Manager, Siemens
- **Dr Kumari Pritee**
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- **Vandana Vasudevan**
Founder & CEO, Naagrik Foundation
for Cities
- **Md Faheemul Islam**
Business Development Lead, Dronix
Technologies Private Limited
- **Minjun Kim**
Manager - Global Sales
SI Imaging Services – Korea
- **Elangobabu Chinnasamy**
Project Manager
TNGIS, Tamil Nadu eGovernance
Agency



Water@2047: A lifeline for Sustainable Futures

Discussion under this theme circled around the major components of water industry, technologies used by experts, engineers, scientists, technologists towards riverine ecosystem. Geospatial technologies and emerging technologies are being used for watershed conservation, its delineation, efficient planning and management of water distribution system, identifying sources of water like lakes, rivers, ponds, and potential groundwater zones.

In the name of development, some drastic changes have happened that have affected some natural processes. However, development, conservation and management of water resources are crucial. In this session we got the understanding of human intervention and ways to optimize resource recovery and energy efficiency to save water bodies. Additionally, rejuvenation and conservation of water bodies and open areas emphasizes implementation of an interconnected system of urban environment comprising green spaces, recreational places, biodiversity and natural conservation areas. This conversation has helped us understand how cities are adapting integrated policies and plans for resource efficiency, mitigation and adaptation to climate change as well as disaster resilience.

Water Resource & Management program in GeoSmart India 2023 had very insightful discussion in two sessions including Recommendations and Way Forward with the experts from Government, Private sector, academia, Start-ups, and Knowledge Hub. The program covered the discussion on:

Development and changes in the riverine ecosystem

Data Analytics & Emerging Technologies

Riverine strategies and Human intervention

Distribution of River Water

Organic understanding of Nature and Management



KEY TAKEAWAYS:

- Utilization of Geospatial Technologies: the application of geospatial technologies in the water industry, with a focus on watershed conservation, delineation, and efficient planning and management of water distribution systems.
- Balancing Development and Conservation: Acknowledging the impact of development on natural processes, the conversation emphasized the importance of water resource conservation and management.
- Interconnected Urban Environment: Rejuvenation and conservation of water bodies as integral components of an interconnected urban environment underscored the need for green spaces, recreational areas, biodiversity, and natural conservation zones in urban planning to enhance resource efficiency, climate change adaptation, and disaster resilience.
- Water Quality Improvement: Emphasis on strategies to enhance water quality, highlighting the importance of preserving water resources, and exploring methods for treating water trails.
- GIS Monitoring: Understanding how GIS aids in monitoring water quality above and below ground, measuring factors like oxygen, pH, bacterial content, flow rate, and turbidity.
- Critical Juncture for Water Bodies: The program underscored the critical state of India's water bodies, emphasizing the urgent need for intervention and steps to improve conditions. The discussion served as a call to action to prevent the depletion of essential water resources.

ALL PANELISTS AND SPEAKERS

- **G. Krishnamurthy**
Regional Director
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Water Board
- **Dr Pandith Madhnure**
Scientist, CGWB, Ministry of water
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- **Dr S. Mohan**
Institute Chair Professor, IIT Madras
- **Dr Lingaraju Yale**
Director River Rejuvenation, Art of
Living
- **Dr R. N. Sankhua**
Chief Engineer (South), National
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- **Abdul Hakeem**
Head of Department - Water
Resources, Water Resources-
National Remote Sensing Centre
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Dy. Chief Engineer, Municipal
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- **Anil Pillai**
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Senior Director Sourcing, Veolia
- **Pranit Mehta**
Founding Member, VP- Business
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- **Kamaleshwar Pratap Singh**
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Department of Mission Bhagiratha
- **Satyanaam Bajpai**
Manager GIS & Digital
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- **Sangeeth S**
Lead – Digital, L & T Construction,
Water and Effluent Treatment IC
- **Vijay K R**
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(Geospatial Technologies), L & T
Construction, Water and Effluent
Treatment IC
- **Ratna Jayakar**
Executive Engineer
Water Resource Department, GoAP
- **Kasi Ponnappalli**
Founder, GeoVidya



Geospatial Infrastructure and Digital Twin Supporting Sustainable Mandates into Digital Exploration and Mining

At the Geosmart India 2023, a two-day flagship program of Exploration and Mining was envisaged where mining of minerals in a sustainable manner with suitable technologies, discussion on required policy interventions and bringing all stakeholders on one platform were the main goals. The discussions delved into the importance of geospatial policies, technology, and their implementation for enhancing the mining sector in India, as well as, safeguarding the interest of the general public. Addressing the program underscored the indispensable roles played by the Central Mine Planning and Design Institute (CMPDI) and the Ministry of Coal in supporting mining businesses in India, which was

the highlight of the program. CMPDI's contributions, ranging from technical expertise to consultancy services and their involvement in driving industry advancements, were emphasized.

The program, additionally delved into the sector's value chain in India, that involved a comprehensive explanation of how geospatial technologies, including GPS, DGPS, Satellite Imageries, Drone and LiDAR, etc. play vital roles at various stages of the sector, enhancing efficiency and precision. Moreover, the integration of geospatial technologies with emerging technology advancements like Digital Twin, IoT, and AI in India's exploration and mining sector was discussed, which emphasized numerous advantages, such as

improved resource management and safety measures, gained through this integration.

The challenges within the Mining Industry in India, the program also discussed the solutions through utilization of geospatial technologies, aiming to enhance environmental sustainability, reduce operational risks, optimize resource allocation and much more.

Sanjay Chakraborty, Head Technology, Adani Natural Resources "From bidding to getting the block, the biggest hurdle starts with the challenge of land. To rehabilitate the people and acquire the land, we need accurate maps. We struggle with cadastral map that are not accurate but we get around it by mapping the area manually."

Dr Ashutosh Roul, General Manager (Mines), National Aluminium Company Limited (NALCO), "Drones have the capability to provide high accuracy of measurement, accurate stockpile data, faster surveys with low cost, and identify hazards and mitigate them". Maps can improve worker and site management as it requires only one or two persons to manage the entire survey.

Debkumar Bhattacharyya, Deputy Director General, Geological Survey of India explained "In UK, Australia, Canada, mining is a sort of a monolith. They have a strong favorable policy, which streamlines a lot of work for the mining professionals there. Traditionally, India has lacked that kind of substantial policies but through the national geospatial

policy, it encourages the participation of private companies." "Inter-ministerial collaboration and cooperation is being taking place. There is also a policy in the works that would increase the interoperability between different government stakeholders".

Finally, the session underlined the digital transformation of the Mining industry in India, emphasizing that embracing geospatial and emerging technologies is the way forward. These technologies promise to drive the sector towards increased productivity, sustainability, and overall progress in the years to come. It also touched upon the concepts of 'Net Zero' and its applicability in mining sector. Impact of mining on environment and its mitigation measures were also discussed.



Co-Organizer



Academic Partner



ALL PANELISTS AND SPEAKERS

- **Dr MP Narayanan**
Chairman, Geospatial World
- **Manoj Kumar**
CMD, CMPDI
- **Dheeraj Kumar**
Deputy Director, (IIT) ISM Dhanbad
- **Harshit**
Manager Geology, Adani Cementation Ltd
- **Abobacker Siddique**
P*, Secretary, Department of Mines, Jharkhand
- **Abinash Majhi**
DGM, Adani Enterprises Ltd
- **RK Amar**
GM, CMPDI
- **Piyush Srivastava**
Chief, Natural Resources Division, Tata Steel Limited
- **M Prasanna Kumar**
CMD, Neyveli Lignite Corporation Ltd
- **Mohit Sahu**
Co - Founder, BlueBanyan Technologies
- **Ravi K**
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- **Vibhu Sinha**
Sr. Manager, Esri India
- **Shanto Mukherjee**
Head - Technical Services, Adani Enterprises Limited
- **Cyriac Joseph**
MD & CEO, Squadron Infra and Mining Private Limited
- **Vijay Mishra**
Director, Geo Green Enviro House Pvt. Ltd.
- **B R Reddy**
Former CMD, SECL
- **Pranay Johri**
Sales Manager
Trimble
- **Rajiva Kumar Singh**
GM, Exploration, CMPDI
- **Chiranjib Patra**
GM, Under Ground Mining Division, CMPDI
- **Vineet Lohani**
DGM Technical, EXCEL Geomatics
- **Dr Akala**
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- **Afroz Ali**
Chief of Cluster - Jharkhand, Adani Mining
- **Mrinmoy Dhara**
Deputy Manager - GIS Solution, Scanpoint Geomatics Ltd.
- **Peter Pallos**
Sales Manager - Europe, Teledyne Geospatial



Future Focus: India's New Space Economy

The session began by delving into the concept of the new space economy within the Indian space ecosystem. It addressed various challenges and opportunities associated with this emerging sector. One key point emphasized the importance of considering both tangible and intangible benefits generated by the Indian space and geospatial industries. Additionally, the discussion highlighted a critical issue - the reluctance of Indian banks to provide funding for the space sector due to its non-inclusion in the priority sector, which absolves them of any responsibility to offer financial support.

Therefore, the new space economy must adopt a comprehensive perspective, encompassing formal regulations, increased sector liberalization, and funding accessibility from banks. Furthermore, the session underscored the pivotal role of emerging technologies such as Cloud, Artificial Intelligence (AI), and Machine Learning (ML) in shaping this new space economy. Collaboration among national and global space stakeholders was identified as an urgent and vital necessity.

Space situational awareness management was also a focal point of discussion. Many prominent organizations in the USA are eyeing this field as a potential avenue for future business growth. Nevertheless, there remains a lack of global-level legal requirements in this domain.

In the context of India, Information Technology (IT) emerged as a major catalyst for the Indian space economy. However, it was emphasized that India must concentrate on building sustainable infrastructure, nurturing a skilled workforce, establishing Indian testing standards, and creating a robust supply chain. Building trust among various space stakeholders was deemed imperative.

In summary, the session provided a comprehensive overview of India's current space economy, exploring the associated opportunities, addressing bottlenecks, and proposing solutions for overcoming these challenges.

Indian Space Industry expected to be a \$40 billion by the year 2040 with current growth rate. However, have a potential to be \$100 billion by 2040*

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The program aimed to foster an understanding of the current new space economy and the Indian space economy, while also delving into potential opportunities, as presented by key speakers. An additional highlight of the event was the signing of Memorandums of Understanding (MOUs) by new Indian space organizations. Moreover, the program served as an effective platform for both Indian and global space stakeholders to network and share their perspectives.

KEY TAKEAWAYS:

- There is a need for policy advocacy in areas concerning space law, Indian space standards, and qualifications.
- It is crucial to establish a skilled workforce and educational institutions that focus on space-related programs.
- The current valuation of the Indian space ecosystem stands at \$8 billion, with projections indicating it could reach \$77 billion by 2030 and \$100 billion by 2040.
- The Indian space economy currently represents 2% of the global space economy, but it is growing at a rate of 4%, outpacing the global rate of 2%.
- The Indian defence forces, particularly the Indian Air Force (IAF), are among the most interested stakeholders and investors in the Indian space economy. They are also willing to assist the Indian space sector wherever possible.

ALL PANELISTS AND SPEAKERS

- **Lt Gen (Dr) AKS Chande**
PVSM, AVSM (Retd), President
– Defence & Internal Security,
Geospatial World
- **Dr. Subba Rao Pavuluri**
CMD, Anantha Technologies
- **Maj Gen (Retd) Clint Crosier**
Director AWS for Aerospace &
Satellite
- **Brig. Ali Alshehhi**
Director General , National Science
and Space Technology Centre, UAE
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- **Mr. C Chandrashekar Reddy**
Advisor to Govt., AP Space
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- **Rahul Saxena**
Co-Founder Ai Dash
- **Praveen PA**
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- **Krishna Rao TB**
Head Presales, Esri India
- **Dr Vinod Bothale**
Former Associate Director, NRSC
- **Aditya T**
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- **Dr. Vinay Dadhwal**
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Studies
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Head Strategy
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Lead, R&D and Strategy
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- **Karthik Ravindra**
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Satsure
- **Ankit Bhateja**
Director & Co Founder, Xovian
Aerospace
- **AVM Rajeev Ranjan**
ACAS (Ops), IAF
- **Advait Kulkarni**
CEO, Vasundhara Technologies
- **Brahmam Gorugantu**
Lead Strategy, NeoGeo Info
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- **Srinibas Patnaik**
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- **Sikander Yadav**
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- **Develeena Bhattacharya**
CEO, Numer8
- **Naveen Reddy**
Sales Head – South Asia, Planet
Labs
- **Angad Bhatia**
Director, Janak Positioning
- **Abhishek Patil**
Image Processing Expert, Azista
Aerospace
- **V. Nagasubramanian**
Scientist “SG”, ADRIN. Dept. of
Space



DigitalMaps@Work in Villages

The event was aimed at empowering Panchayat level stakeholders through geospatial knowledge. The symposium was aligned with the transformative promise of the 2030 Agenda - 'Leave no one behind,' emphasizing the grassroots level integration of geospatial technology.

Objective:

The objective of the symposium was to encourage the use of geospatial technologies such as remote sensing,

GIS and spread awareness about their benefits for the Panchayat raj development. The objectives were carried out by:

- Providing an overview of remote sensing and GIS technology
- Highlighting the use of remote sensing and GIS for Gram Panchayat development
- Demonstrating the Bhuvan Panchayat portal
- Providing training on asset management and planning through the Yuktdhara portal

Recommendations

- Gram Panchayats should continue to invest in geospatial technology to improve development planning and implementation.
 - Geospatial World should continue to offer training and support to Gram Panchayats on the use of geospatial technology.
 - Going forward, the sessions should be multilingual to support the different communities and cultures, coming from all over the country.
 - Practical sessions and demonstrations shall be held in villages and field that explain the use-cases of different geospatial technologies and their benefits.
 - The alerts for calamities and natural disasters are mostly sent to government officials and stakeholders. If these alerts can be simultaneously sent to the Sarpanch (Head of Panchayat) of the respective village, more streamlined and quick actions can be taken.
 - The symposium not only imparted practical knowledge but also fostered collaboration among diverse stakeholders, promoting the effective use of geospatial technology for sustainable rural development.
- Impact:** Digital Maps Work in Villages sector at GeoSmart India promoted 'geospatial thinking' within masses that are driving development at the grassroots level, thereby boosting efforts of mapping the villages/towns/cities. It also helped in collecting evidence-based information for making data-based development plans and monitoring its impact by taking advantage of geospatial technology.
- It initiated thoughts and actions at industry and policy maker level to fine tune technological advances for sustainable rural development. This also will provide a platform to share the wealth of geospatial information already created in silos over decades and defining ways for easier use of these information.

KEY TAKEAWAYS:

- The 2-day symposium (15-16 October 2023 at the Training and Outreach campus, Jeedimetla, National Remote Sensing Centre (NRSC) in Hyderabad, India) covered topics such as the application of space technology in gram panchayat development, basics of remote sensing, Bhuvan portal demo, Mobile applications, MNREGA project, and applications in Agriculture.
- 57 delegates attended the symposium (17 from FES, 13 from the Ministry of Panchayat Raj, and 27 by the Earthsight Foundation). The delegates mainly comprised of Gram sarpanches, village-level workers, teachers, students, and people from various other NGO organizations.
- Training was focused on village level geospatial information and planning tools developed by NRSC ISRO.
- Remote sensing and GIS technology can be used to improve a variety of Gram Panchayat functions, including disaster management, crop management, and asset management.
- The Bhuvan Panchayat portal is a valuable resource for Gram Panchayats, providing a wealth of information and tools for development planning.
- The Yuktdhara portal is a useful tool for Gram Panchayats for asset management and planning.
- The GSI2023 was a valuable learning experience for Gram Panchayat stakeholders. The tutorial provided participants with the knowledge and skills they need to use geospatial technology to improve their communities.

ALL PANELISTS AND SPEAKERS

- **Sanjay Kumar**
Founder and CEO, Geospatial World
- **Milind Wadodkar**
Chief Soil Survey Officer, Soil and Land Use Survey of India
- **Agendra Kumar**
Managing Director, Esri India
- **Alok Prem Nagar**
Joint Secretary, Ministry of Panchayati Raj
- **Dr Prakash Chauhan**
Director, NRSC
- **Dr Deb Jyoti Pal**
Vice President, Geospatial World
- **Bharat Kakade**
President, BAIF
- **Chandrashekhhar Biradar**
Country Director-India and Principal Scientist, CIFOR-ICRAF Asia Continental Program
- **Advait Kulkarni**
CEO
Vasundhara Technologies
- **Chiranjit Guha**
General Manager
Data and Analytics
Foundation for Ecological Security
- **Priya Sankar**
Director - Partner Engagement,
Arghyam
- **Suneetha Sapur**
Chief of Operations, INREM
Foundation
- **Craig Dsouza**
Data and Tech Lead
WELL Labs – IFMR
- **Balachander T**
Freelance Consultant
- **Shirish Ravan**
Founder
EarthSight Foundation
- **Dr Shamita Kumar**
Vice principal, Institute of Environment Education and Research, Bharati Vidyapeeth Deemed University (BVIEER)
- **Dr Jayant Kulkarni**
Executive Director, Rambhau Mhalagi Prabodhini
- **Dr Suhas Diwase**
IAS, Government of Maharashtra
- **PLN Raju**
Special Secretary, Science and Technology, Government of Assam
- **Dr Sultan Singh**
Chief Geospatial Officer, Gurugram Metropolitan Development Authority
- **Dr GS Rao**
Group Director (Training, Education & Outreach), NRSC / ISRO



TechSustain India: Driving Sustainable National Development through Innovation

TechSustain India, a pivotal segment of GeoSmart India 2023, was designed to explore innovative technological interventions driving sustainable development across various sectors. With a focus on data leveraging emerging technology to address critical challenges at large, the session was chaired and led by **Anand Sirohi**, Director at Trimble.

KEY SPEAKERS AND INSIGHTS

- **Ankur Mittal (Accenture)**
Explored the paradigm shift within Indian Railways, illuminating the path toward future readiness for efficient operations and enhanced service delivery.
- **Shivani A Mehta (IIT Delhi)**
Showcased the development of digital participatory tools for water resource management, specifically designed for rural communities, aiming to enhance their engagement and empowerment for efficient and participatory water resource management.
- **Pallav Mathur (SBG Systems)**
Contributed insights into innovative solutions for sustainable development in India and SAARC regions using geospatial application and building infrastructures.
- **Anirudh D. Chakraborty (University of Mumbai)**
Shared a case study on the monitoring of coastal environmental changes in Thane Creek Area using remote sensing and GIS technology, shedding light on critical environmental monitoring methodologies.
- **Yetender Singh Negi (SATPALDA)**
Brought expertise in disaster management, highlighting the role of technology in mitigating disasters and building resilience.

CONCLUSION:

TechSustain India at GeoSmart India 2023 provided a platform to delve into innovative tech-driven solutions fostering sustainability and addressing key challenges across sectors, aligning with India's quest for sustainable national development.



Women in Geospatial

Geospatial World has been at the forefront to promote diversity, equity, and inclusion (DEI) across the geospatial industry. As an organization, we believe that to advance innovation and creativity in geospatial technology, we must build a diverse and inclusive community. An essential aspect of DEI is the representation of women in the workforce. As part of our dedication to these principles, GeoSmart India 2023 recently hosted the Women in Geospatial Panel Discussion & Networking Session. The session aimed to propel the geospatial industry to new heights, emphasizing the power of women's stories, the wisdom they've gained, and the paths they've paved.

MODERATOR

Bharti Sinha

Founder, The Strategists World

OPENING REMARK

Annu Negi

Senior Vice President, Geospatial World

SPEAKERS

Dr N Aparna

Group Director, NRSC

Seema Mehra Parihar

Faculty, Dept. of Geography
Kirori Mal College

Rashmi Gupta

Head of Marketing, Esri India

Saurabh Rai

CEO, Arahast Technologies

Megha Dutta

Senior Consultant - Advisory &
Innovation, Woolpert

Prateep Basu

CEO, Satsure

Ananya Narain

VP-Commercial Consulting
Geospatial World

KEY TAKEAWAYS:

- Annu Negi stressed the importance of open and inclusive environments, addressing work-life balance issues and the need for female mentors.
- Bharti Sinha highlighted the need for a strong infrastructure genuinely welcoming women, men, and other genders in the workplace.
- Mere policy implementation is insufficient; a supportive environment is crucial for true inclusion.
- Ananyaa Narain emphasized the importance of women setting boundaries, prioritizing mental health, and building reliable teams.
- Rashmi Gupta stressed the importance of women believing in themselves and their career aspirations. Leveraging support systems, training, mentorship, and networking opportunities were emphasized.
- Saurabh Rai highlighted the importance of open discussions and transparency to understand challenges faced by different genders, including mental health issues.
- Dr. Aparna N urged women to stop pitying themselves, emphasizing their capability to solve problems and set boundaries.
- Professor Dr. Seema Mehra Parihar emphasized the need for women to become competent and high-performing individuals.
- The low percentage of projects targeted towards women in the geospatial sector indicates the need for greater opportunities.
- Megha Datta encouraged women to question authority, follow passions, and do the inner work needed for success.
- Sanjay Kumar, CEO of Geospatial World, emphasized that Diversity, Equity, and Inclusion is not just an ideology but a responsibility.



Children at GeoSmart India 2023

In our digital age, the classic game of “I spy” has taken a digital turn! With the rapid advancements in technology and the interconnectedness of maps, location services, and modern communication, it's only natural for kids to be incredibly curious. They're eager to understand how these technologies work, especially in making things like sending rockets into the space and still maintain a connection with Earth. Do they carry a telecommunication line with them? How does navigation in vehicles guide us - is it like having an angel in our devices telling us where to go? And how do soldiers on distant mountains precisely aim and neutralize their enemies?

These inquisitive questions and the world of geography and science are the perfect places to provide answers to these bright young minds. After all, the brilliance of the mind is often sparked by curiosity, driven by questions of why, how, and when. A renowned scientist once mentioned, “I was always curious to learn more about the pole star, Dhruva Tara, and that curiosity has always stayed with me and changed my life.”

In essence, GeoSmart India 2023 offers an incredible opportunity for these curious minds to explore and unravel the mysteries behind the technologies that shape our world today. There's a shared sentiment among these young minds that curiosity acts as the key to unlocking the brilliance within.



GEOSMART INDIA AWARDS 2023





The Way Forward

At a heavily attended closing panel on the last day of the conference, The GeoSmart India 2023 conference closed with a special session on various critical topics and themes that were discussed throughout the three-day conference.



Sanjay Kumar



Ramveer Tanwar



Prakash Chauhan



Rama Lanka Devi

Sanjay Kumar, CEO, Geospatial World said, "The new generations are more inclined towards finding solutions for SDGs. The social entrepreneurship is finding new sustainable ways to address the problems and challenges on the societal scale. The biggest opportunity and challenge of the 21st century is saving the planet. You cannot just

leave this business to a charitable trust. Looking at sustainability aspect of digital twin which will help understand the situation of any place. Digital twin can map the slow changes in a pond, for example, and monitor the health of real-life environment."

Ramveer Tanwar (Pond Man of India), Founder, Say Earth NGO, discussed the

role of geospatial technologies in his daily work and said, "Through satellite imagery, we can check the geographical area and make our proposal accordingly. However, at times there is disparity in land areas due to either encroachment from locals or builders which again becomes a challenge. This can be solved by pulling up historical

geographical satellite area.

Dr. Prakash Chauhan, Director, NRSC said, there is an overarching ambition to create HD models, and accurate and better imagery which is a big task but the demand is being created upon which opening up the sector to the private companies is another welcomed step.

Rama Lanka Devi, Director, Emerging Technologies, Telangana congratulated the Geospatial World team for hosting the GeoSmart India event and extended her gratitude. "It has been a spectacular event. The event provided a holistic themes across its 3-day run time and the team worked really hard to put this all together," she said.

“ Using satellite imagery, we tailor proposals to geographical nuances. Challenges, such as land disparities from encroachments, prompt us to delve into historical satellite records, unveiling the past to chart a precise path forward. -

Ranveer Tanwar ”

“ Pioneering HD models and elevating imagery standards is a formidable yet embraced task. Opening the sector to private companies is a welcomed move, meeting the escalating demand for precision and superior data crucial for innovation. -

Prakash Chauhan ”

“ Embracing active exploration of cutting-edge technologies such as AI, drones, and blockchain, we aim to empower farmers by providing crucial assistance in their agricultural activities—a transformative approach to modernizing the heart of our sustenance. -

Rama Devi Lanka ”

Exhibitor Awards

Best Visitor Engagement



Best Content & Display



Best Product Display

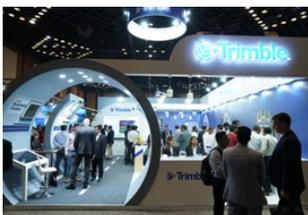
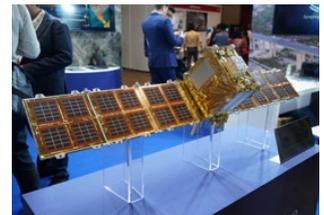
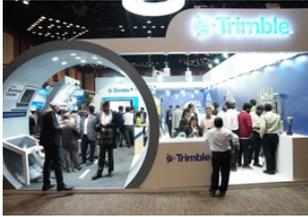


Exhibitors

User Meet



Exhibitors Gallery



Media Mention

And Many More...

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