

Strengthening Asia-Pacific Geospatial Leadership: Highlights from 14th UN-GGIM-AP and India's New Co-Chair Role

S. K. Varshney

Consultant, RIS



The election of the Surveyor General of India as Co-Chair is expected to further enhance India's role in shaping policies and strategies for effective geospatial information management across the Asia-Pacific region. S. K. Varshney writes.

The 14th Plenary meeting of the United Nations Global Geospatial Information Management for Asia and the Pacific (UN-GGIM-AP) was held in Goyang, South Korea during 24-26th September 2025. India has been elected as co-chair for the 2025-2028 term.

The UN-GGIM is to play a leading role in setting the agenda for global geospatial information and promote its use to address key global challenges. This includes developing effective strategies for national geospatial information capacity, coordinating with member states, and providing a forum to integrate geospatial data with other information, particularly for achieving the Sustainable Development Goals (SDGs) and using the Integrated Geospatial Information Framework (IGIF). These include:

- **Develop global frameworks:** Establish and promote common principles, policies, methods, and standards for geospatial data and services through initiatives like the global geodetic reference frame and the Integrated Geospatial Information Framework (IGIF).
- **Build national capacity:** Provide policy direction and support to member countries to build and strengthen their national geospatial information management capacities.
- **Foster collaboration:** Act as a forum for coordinating between member states and international organizations to share best practices and experiences.
- **Address global challenges:** Promote the use of geospatial information to address key global challenges, such as sustainable development, disaster management, and climate change mitigation.
- **Integrate data:** Integrate geospatial statistics and other information, including marine and terrestrial data, to support data-driven decision-making.

- **Enable innovation:** Support countries in developing innovative capacities through integrated data hubs and platforms for monitoring national priorities and the SDGs.

In the 14th meeting at South Korea, discussions focused on advancing geospatial innovation, cooperation, and the strategic use of data to address regional challenges.

- **Strategic use of AI and geospatial information:** The meeting had a focus on leveraging artificial intelligence and geospatial information for data-driven decision-making to encourage member states to explore this nexus to enhance resilience and improve public services.
- **Integrated geospatial information framework:** A key objective was to advance toward a more integrated geospatial information management framework across the Asia-Pacific region. This is intended to maximize economic, social, and environmental benefits, especially in relation to the Sustainable Development Goals (SDGs).
- **Strengthening regional cooperation:** To emphasize promoting intergovernmental and multi-stakeholder cooperation to tackle shared challenges such as natural disasters, climate change, and public health emergencies. The meeting served as a platform for member countries to exchange experiences and strengthen partnerships.
- **Capacity building:** As India has been elected Co-Chair for the 2025–2028 term, it is expected to focus on strengthening capacity building within the region, in line with India's vision of promoting innovation, skills development, and regional collaboration.
- **Alignment with the UN-GGIM Strategic Framework** to serve as the global policy for geospatial information management. Member states, including newly elected leaders, committed to supporting this vision.
- **Future plans for Working Groups:** The Executive Board discussed proposals to renew and reorganize the UN-GGIM-AP Working Groups. New structure and priorities for these groups to align with global priorities and resolutions.

Shri HKS Makwana, Surveyor General of India and newly elected co-chair of UN-GGIM-AP said; "I am deeply honoured by the trust that the Member States of the Asia-Pacific region have placed in India. As we look ahead to the upcoming term, I wholeheartedly seek the continued cooperation and active support of all Member States, partners, and stakeholders.

Together with my fellow Co-Chair, Vice-Chairs, and Committee members, I am committed to working collaboratively with each of you to ensure our collective efforts are inclusive, resilient, and results-driven. “

He further mentioned that, in the coming term, our initiatives will be closely aligned with the UN-GGIM Strategic Framework—focusing on strong leadership, secure digital transformation, and good governance. We will promote data-driven decision-making, inclusivity, and transparency, while strengthening partnerships and building capacity to deliver measurable impact across the Asia-Pacific region. He expressed gratitude for the continued confidence and

support, and conveyed his eagerness to further collaborate in advancing a more connected, capable, and forward-looking geospatial community.

The election of the Surveyor General of India as Co-Chair is expected to further enhance India's role in shaping policies and strategies for effective geospatial information management across the Asia-Pacific region.

SCIENCE POLICY & DIPLOMACY

International S&T Cooperation

[6th Japan-Brazil Joint Committee on Cooperation in Science and Technology](#)

Both sides reviewed recent national STI policy developments and reaffirmed collaboration between funding agencies and research institutions. They also discussed future cooperation in areas including sustainable development, climate action under the Japan–Brazil Green Partnership Initiative, AI for social issues, digitalization, and healthcare.

[Taiwan, Latvia, Lithuania hold science and technology conference in Riga](#)

Three countries convened in Riga for a science-and-technology conference where they exchanged ideas on joint research, funding mechanisms and institutional cooperation.

[South Korea and Czech Republic Deepen Science & Technology Collaboration](#)

South Korea and the Czech Republic have announced plans to strengthen cooperation across biotechnology, chemistry, quantum technology, space, nuclear power, AI, and digital technologies. South Korea will invest US\$37 million over 10 years to support joint R&D projects, fostering innovation and research partnerships. This initiative is expected to enhance European–Asian scientific collaboration, promote talent exchange, and build a robust network for both fundamental and applied high-tech research.

[India and Australia Strengthen Energy Cooperation through the 5th India-Australia Energy Dialogue](#)

India and Australia committed to deepen their energy partnership, focusing on net-zero transitions, energy efficiency, enabling technologies such as green hydrogen, and resilient supply chains.

[US Signs Tech Deals with Japan and South Korea](#)

The United States signed bilateral “Technology Prosperity Deals” with Japan and the Republic of Korea, aiming to deepen cooperation in fields such as AI, quantum computing, biotechnology,

space exploration, 6G and fusion energy. The agreements also seek to align regulations and standards, strengthen supply-chain resilience, and jointly advance innovation ecosystems among the allied nations.

[Taiwan, Canada Deepen Scientific Research Cooperation](#)

Taiwan and Canada pledged to expand joint research efforts, particularly in advanced fields such as semiconductors, AI, biotechnology and other high-technology sectors, under their existing science and technology cooperation framework.

Emerging Tech & Governance

[UN Cybercrime Treaty to Tackle Global Offences](#)

The new treaty criminalises a range of cyber-dependent and cyber-enabled offences, facilitates the sharing of electronic evidence across borders and establishes a 24/7 cooperation network among States. It also makes history as the first international treaty to recognise the non-consensual dissemination of intimate images as an offence.

[Countries, Regulators and Partners urge a Collaborative Approach to Advance Safe and Equitable AI in Health](#)

World Health Organization (WHO) and the Ministry of Food and Drug Safety (MFDS) of the Republic of Korea co-hosted the AI Regulatory and International Symposium (AIRIS) 2025 in Incheon, bringing together regulators, academia, industry and international partners to advance safe, ethical and equitable uses of AI in health. The outcome statement emphasised a lifecycle-based regulatory approach (from development through post-market surveillance), risk-proportionate regulation tailored to national health systems, and strengthened international collaboration to build a global trusted AI ecosystem in health.

[Fujitsu & IISc Launch Joint Research on Advanced AI Technologies](#)

Fujitsu and the Indian Institute of Science (IISc) have started collaborating on advanced AI software to accelerate reaction-diffusion simulations, which are key for modeling chemical reactions & smart-grid behavior. The project will use Fujitsu's power-efficient FUJITSU-MONAKA Arm-based CPUs to run graph-network algorithms, aiming for faster, low-power simulations by FY 2030.

[Vietnam, Singapore Foster Links in Electronics, Industrial Production](#)

Under the framework of Industrial Transformation Asia-Pacific (ITAP) 2025, Vietnam and Singapore held a business-networking event to deepen cooperation in electronics, semiconductors and industrial manufacturing. Vietnam highlighted new policies to build its electronics and semiconductor sectors, while Singapore's industry association pointed to emerging opportunities in smart manufacturing and AI-enabled semiconductor value-chains.

Events & Meetings

[Uttarakhand Hosts Pre-Summit to India–AI Impact Summit 2026](#)

The Uttarakhand AI Impact Summit 2025 set the stage for the India – AI Impact Summit 2026, the first global AI forum to be hosted in the Global South. Reflecting on India's growing leadership in shaping the global AI agenda, the summit is anchored in the nation's vision of "AI for All." It seeks to harness the power of AI to drive social inclusion, innovation, and improved public service delivery, reinforcing India's position as a global advocate for equitable, sustainable, and people-centric AI development.

[G20 Environment Ministers Meeting Held in Cape Town](#)

The G20's Environmental & Climate Sustainability Working Group (ECSWG) met in Cape Town under South Africa's presidency. On 18 October, the host country announced that the meeting had adopted two major declarations: the "Cape Town Ministerial Declaration on Crimes that Affect the Environment" and the "Cape Town Ministerial Declaration on Equality."

INDIAN SCIENCE NEWS

[High-performance Biocatalytic Platform for Green Hydrocarbon Production](#)

Researchers at the Indian Institute of Science have engineered a cell-free enzyme system using a membrane-bound metalloenzyme (UndB) to convert fatty acids into 1-alkenes with ~98 per cent yield, offering a greener route to biofuels and chemical precursors.

[Centre for Sustainable Energy Launched](#)

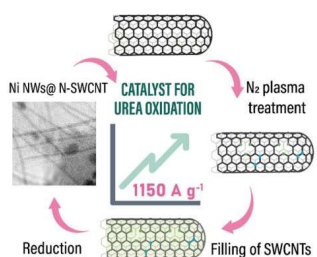
IIT Madras and Coal India signed an MoU to establish a dedicated research centre focused on low-carbon technologies, repurposing coal mines and developing energy-storage materials, supporting India's goal of achieving net-zero by 2070.

[IISc Builds India's First 6-Qubit Photonic Quantum System](#)

Scientists at IISc have developed a six-qubit quantum processor using *photons* (particles of light), a major step under India's National Quantum Mission. By encoding multiple qubits in a single photon (polarisation + spatial path), they achieved deterministic entanglement and quantum gate operations, operating at room temperature.

ADVANCES IN S&T

Plasma-Engineered Nickel Nanowires in Nanotubes Offer Breakthrough for Clean Hydrogen Production



The Problem: Clean hydrogen production through urea oxidation is attractive because it simultaneously generates hydrogen and helps treat wastewater. However, this reaction takes place in a highly alkaline, corrosive environment that rapidly degrades conventional nickel-based catalysts. Ensuring long-term durability and efficiency under such harsh

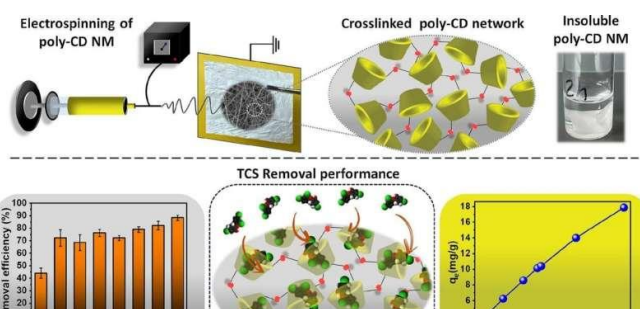
conditions has been a central challenge for advancing sustainable hydrogen-generation technologies.

The Method: Researchers tackled this challenge by embedding nickel nanowires inside single-walled carbon nanotubes that were first treated with nitrogen plasma. The plasma treatment creates controlled defects in the nanotube walls, allowing more nickel atoms to enter and assemble into longer, more effective nanowires. These defects also act as new catalytic sites, enhancing performance. The team used molecular dynamics simulations to optimize the plasma-defect formation process and confirmed the results experimentally. The resulting catalyst showed exceptional durability, losing less than 2 per cent activity after 1,000 cycles in harsh alkaline conditions.

Future Prospects: This engineered catalyst holds strong promise for hydrogen-production systems that simultaneously treat urea-rich wastewater, offering a more sustainable and energy-efficient approach. Its outstanding stability suggests potential for long-life industrial electrolyzers. More broadly, the plasma-defect engineering method can be extended to other metal–nanotube systems, opening new avenues for next-generation catalytic and electrochemical technologies essential to a future hydrogen economy.

Reusable, Washable Nanofiber Membrane Filters Water Sustainably

The Problem: Micropollutants like triclosan — a widely used antimicrobial



agent — pose a major threat to aquatic life and can disrupt human hormonal systems. Traditional water-filtering adsorbents are either not effective enough or are not easily reusable, making them less sustainable for long-term water purification.

The Method: A Cornell research team developed an ultra-thin nanofiber membrane made from *cyclodextrin* using electrospinning, which gives it a very high surface area for adsorption. In lab tests, the membrane removed about 90 per cent of triclosan and also effectively took out other micropollutants like antibiotics and sunscreen chemicals. Importantly, the membrane is washable and reusable, meaning it can be regenerated without heavy energy input—just by rinsing. The material is biodegradable (cyclodextrin comes from corn starch), making it more eco-friendly than many conventional filters.

Future Prospects: The researchers plan to extend this design to capture a wider range of pollutants, including textile dyes, volatile organic compounds (VOCs), and persistent “forever chemicals” like PFAS. If scaled up, this membrane could offer a sustainable, low-energy solution for water treatment in both municipal and industrial setups.

INSIGHTS & RESOURCES

[OECD Science, Technology & Innovation Outlook 2025](#)

The report was officially launched on 28 October 2025 by the OECD. It examines how governments are reshaping STI (science, technology, innovation) policies amid rapid technological shifts, geopolitical tensions, and limited resources. Key highlights of the report include:

- Research security is rising sharply: by 2025, 41 countries have research-security policies, and the number of such measures has multiplied since 2018.
- Public R&D spending is increasingly aligned with national security — large increases in energy R&D (+76% over the last decade) and defence R&D (+75%) are reported.
- Governments are being urged to balance openness in international collaboration with guarding against knowledge leakage — policies must be precise, proportional, and tied to long-term partnerships.
- There’s an urgent need to boost innovation diffusion: too much innovation is concentrated in certain firms, regions, and sectors.
- Structural reforms in public science systems: promote multidisciplinary research, improve mobility between academia and industry, and rework incentive systems.
- Technology convergence is accelerating: emerging fields like synthetic biology, neurotechnology, quantum tech, and space-based earth observation are coming together in new ways.

- Adopting an ecosystem approach: innovation policy should consider entire industrial ecosystems — involving start-ups, large firms, investors, suppliers, and government — rather than isolated sectors.
- To govern effectively in uncertainty, the report calls for stronger foresight, strategic intelligence, and policy experimentation — governments should embed these into their STI frameworks.
- Five priority policy actions recommended:
 - Reform STI to support transformative change (beyond incremental innovation).
 - Better coordination between STI and non-STI policy (like climate, health, security).
 - Deploy blended finance (public + private) to scale innovation investments.
 - Build agile, cross-disciplinary research systems that reward a variety of contributions.
 - Recognize the non-linear nature of transformative change — identify “leverage points” to trigger systems-level shifts.
- The report stresses that STI policy is at a turning point: the ability of governments to mobilize innovation for transformative, mission-driven goals will shape future economic, social, and environmental outcomes.