Office of the Principal Scientific Adviser to the Government of India

सत्यमेव जयते

SCIENCE & TECHNOLOGY CLUSTERS

1st International CONFERENCE on SCIENCE & TECHNOLOGY Clusters

OUTCOME REPORT

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अजय के. सूद
भारत सरकार के प्रमुख वैज्ञानिक सलाहकार
Ajay K. Sood
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सत्यमेव जयते

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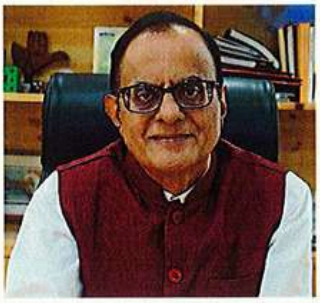


Foreword

India is at a moment where science, technology, and innovation are increasingly shaping how societies respond to complex and interconnected challenges, ranging from climate change and sustainable development to health security, digital transformation, and inclusive livelihoods. Addressing these issues requires approaches that cut across disciplines, institutions, and sectors, and that bring diverse stakeholders together to translate knowledge into meaningful outcomes.

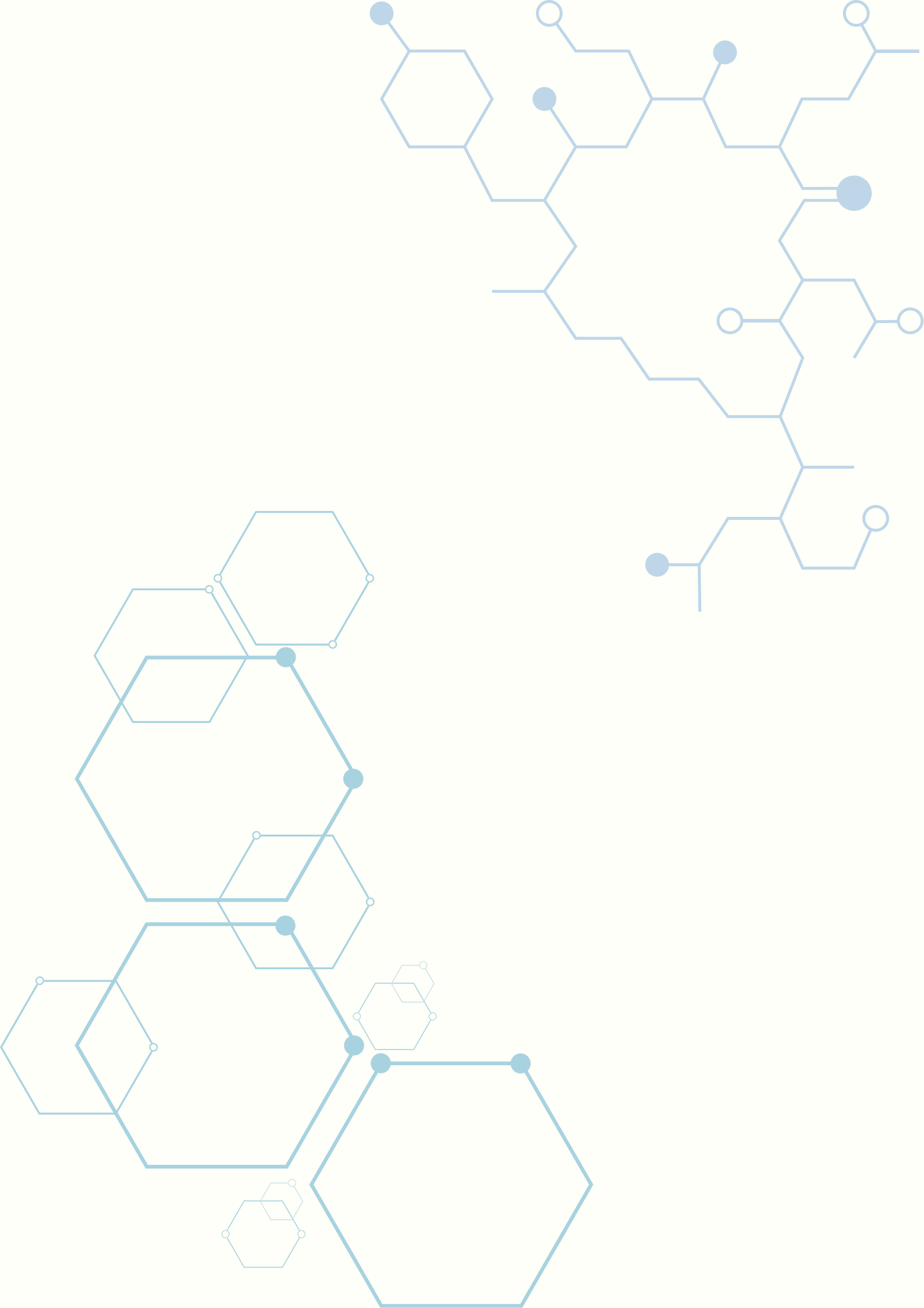
The Science and Technology (S&T) Clusters initiative of my office was conceived with this broader vision in mind. Launched in 2020, the initiative brings together academia, research institutions, industry, start-ups, government bodies, and civil society into regionally rooted ecosystems that can collaboratively identify challenges and develop demand-driven S&T-based solutions. By strengthening collaboration, shared infrastructure, and pathways from research to real-world application, the S&T Clusters support national development priorities and contribute to long-term, inclusive growth.

As these Clusters have evolved, it has become evident that many of the challenges they seek to address transcend geographical boundaries. With similar cluster-based innovation models emerging across the world, the need for deeper international dialogue, cooperation, and mutual learning has grown. In this context, the "First International Conference on Science & Technology (S&T) Clusters – *Making Lives Easier through S&T*" was convened not only to facilitate the exchange of ideas and global experiences, but also to enhance international awareness of India's S&T Cluster ecosystem and its implementation-driven approach. The Conference brought together representatives from governments, scientific institutions, industry, start-ups, and innovation ecosystems across various countries, providing a platform for sharing global best practices and examining diverse cluster models. Through focused discussions and technology showcases, the Conference highlighted the role of S&T Clusters as effective bridges between research, policy, markets, and communities. The partnerships initiated during the event reflected a shared commitment to moving beyond dialogue toward concrete, collaborative action.

This outcome document consolidates the key insights, priorities, and strategic directions that emerged from the Conference, and is intended to serve as a guiding reference for stakeholders seeking to deepen collaboration and scale impactful solutions. By prioritising inclusion, sustainability, and resilience alongside technical maturity and commercial viability, the S&T Clusters are envisioned as "National Technology Accelerators". They will enable the rapid translation of research into deployable solutions to foster shared progress and societal well-being in India and beyond.

(Ajay K Sood)

Date: 21st January 2026



डॉ. (श्रीमती) परविन्दर मैनी
वैज्ञानिक सचिव
Dr. (Mrs) Parvinder Maini
Scientific Secretary

सत्यमेव जयते

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Message

Science and Technology (S&T) is increasingly shaping how nations respond to complex, interconnected challenges such as environmental sustainability, sustainable development, waste management, public health security, digital transformation, and inclusive livelihoods. Addressing these challenges calls for collaborative, cross-disciplinary, and action-oriented approaches that transcend conventional institutional frameworks and sectoral silos.

Recognizing this need, the Office of the Principal Scientific Adviser (PSA) to the Government of India launched the S&T Clusters initiative in 2020 to build demand-driven, regionally rooted innovation ecosystems that translate scientific knowledge into tangible societal outcomes. Over the years, the S&T Clusters have matured into dynamic platforms integrating academia, R&D institutions, industry, start-ups, MSMEs, government bodies, and civil society through consortium-based governance. With eight Clusters currently operational nationwide, the initiative has showcased the effectiveness of coordinated S&T interventions in delivering validated, high-TRL solutions across critical sectors such as clean energy, healthcare, agriculture, water management, circular economy, digital livelihoods, and advanced manufacturing. These efforts collectively advance key national priorities, including Atmanirbhar Bharat and the long-term vision of Viksit Bharat 2047.

Building on the growing maturity of India's S&T Clusters and the relevance of cluster-led innovation in addressing shared global challenges, it became essential to position this initiative within the international innovation discourse. In this context, the "First International Conference on Science & Technology (S&T) Clusters – *Making Lives Easier through S&T*" marked a significant milestone by bringing together policymakers, scientific leaders, industry, start-ups, and innovation enablers from over 35 countries. The Conference enabled the exchange of global best practices and comparative experiences, examined cluster-led innovation as a scalable model for translating science into societal impact, and highlighted the role of S&T Clusters as trusted intermediaries linking research, industry, policy, and community needs. The formal exchange of Memoranda of Understanding (MoUs) during the conference further reflected a shared commitment to strengthening structured international collaboration and joint implementation.

This outcome document consolidates the Conference's key insights, strategic priorities, actionable recommendations, and outcomes into a clear, forward-looking agenda. It outlines pathways to strengthen global cluster-to-cluster networks, enable interoperable innovation frameworks, and accelerate scale-up through consortium-driven programs and aligned public–private partnerships. Together, these outcomes reaffirm the central role of S&T in advancing inclusive growth and shared prosperity, while laying the foundation for a globally connected, implementation-focused S&T ecosystem that enables sustained international collaboration, accelerates climate-aligned solutions, and delivers enduring societal impact.

(Parvinder Maini)

Dated : 23rd January, 2026

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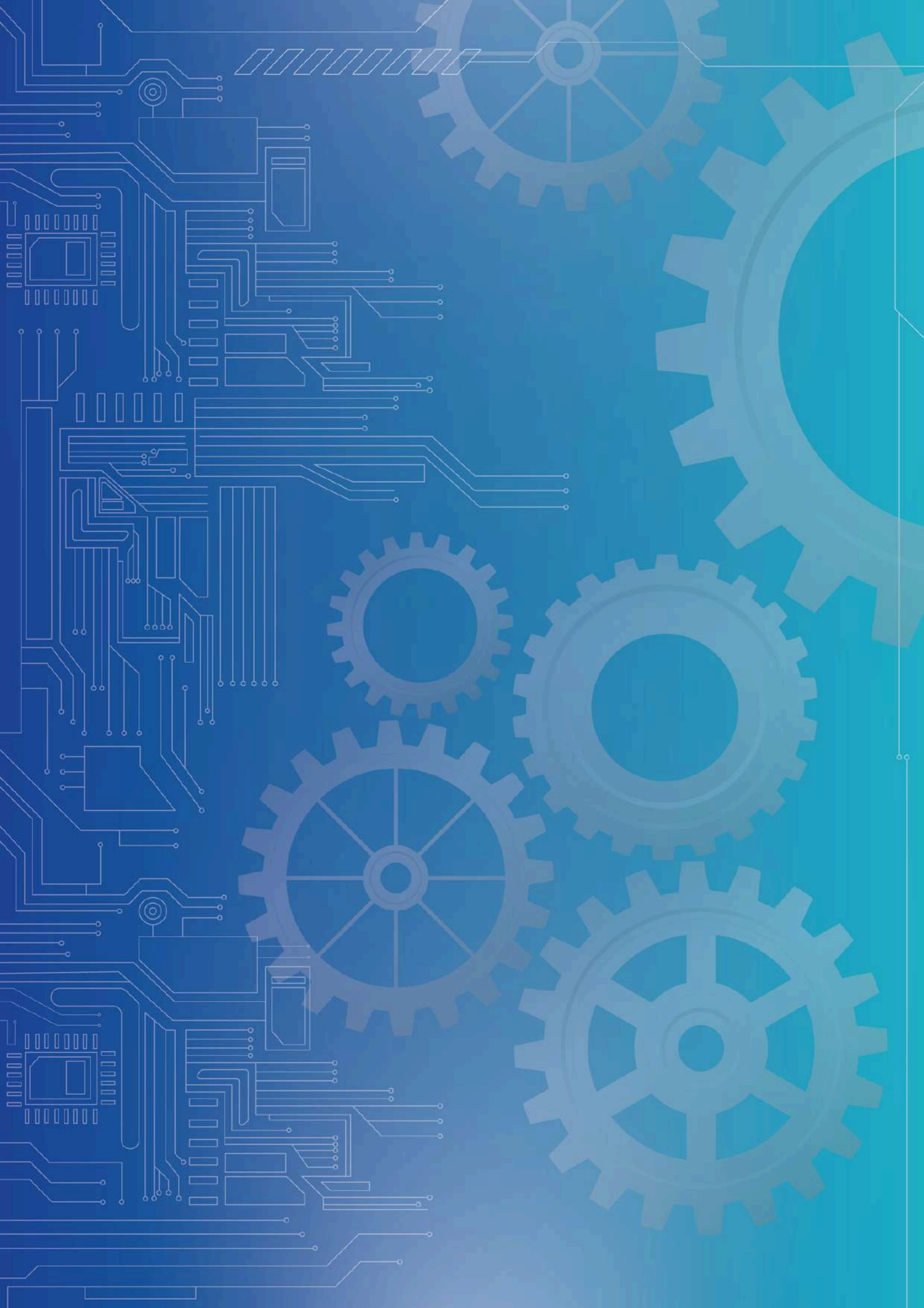

Acknowledgements

We express our sincere gratitude to Prof. Ajay Kumar Sood, Principal Scientific Adviser (PSA) to the Government of India (GoI), and Dr. Parvinder Maini, Scientific Secretary, Office of PSA to GoI, for their sustained guidance, strategic direction, and expert oversight throughout the planning and conduct of the "International Conference on Science & Technology (S&T) Clusters – Making Lives Easier through S&T". Their insights were instrumental in shaping the Conference agenda, strengthening international engagement, and facilitating meaningful scientific and technological collaborations.

This outcome report has been prepared by Dr. Shefali Uttam, Technical Staff, and Dr. Vishal Choudhary, Scientist F, Office of PSA to GoI. We acknowledge with thanks the valuable inputs received from all S&T Clusters, which significantly enriched the technical depth and comprehensiveness of this document.

We also extend our appreciation to the leadership of the S&T Clusters for their role in moderating the thematic panel discussions and contributing domain expertise, namely:

- Bhubaneshwar City Knowledge Innovation Cluster (BCKIC): Dr. Mrutyunjay Suar, Chairman; Dr. Namrata Misra, CEO
- Bengaluru Science and Technology Cluster (BeST): Mr. R. Anantharaman, COO
- Panjab University – IIT Ropar Regional Accelerator for Holistic Innovations Foundation (PI-RAHI): Ms. Neha Arora, COO
- Delhi Research, Implementation, and Innovation Cluster (DRIIV): Dr. Amrita Dawn, CIO
- Research and Innovation Circle of Hyderabad (RICH): Ms. Rashmi Pimpale, CEO
- Jodhpur City Knowledge and Innovation Cluster (JCKIC): Dr. Akanksha Choudhary, Faculty In-Charge; Col. Rohit Khare, CEO
- Pune Knowledge Cluster (PKC): Dr. Priya Nagraj, CEO
- Vizag S&T Cluster – AMTZ: Dr. Jitendra Sharma, CEO; Mr. Yashwanth Goudu, Project Director

Finally, we gratefully acknowledge the participation of all international embassies, panel members, and speakers whose thoughtful contributions, global perspectives, and sharing of best practices were central to the success of the Conference and to advancing structured international collaboration within the S&T Clusters ecosystem.

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1. Executive Summary

The **"First International Conference on Science & Technology (S&T) Clusters – *Making Lives Easier through S&T"*** marked a pivotal milestone in positioning India's S&T Clusters as globally relevant, implementation-oriented innovation ecosystems. Convened by the Office of the Principal Scientific Adviser (PSA) to the Government of India, the Conference addressed the growing recognition that today's interconnected challenges, from climate resilience and sustainable development to healthcare security, industrial transformation, and inclusive livelihoods, cannot be solved in isolation. It underscored the need for coordinated, cross-disciplinary, and multi-stakeholder S&T approaches that move beyond institutional and national boundaries.

The Conference brought together global scientific leaders, senior government officials, academicians, industry, start-ups, and innovation enablers from over 35 countries to examine cluster-led innovation as a scalable and replicable model for translating science into societal impact. Discussions across six priority domains, namely Smart Agriculture, Healthcare, Environmental Sustainability, Industry Automation & Start-ups, Plastics and E-Waste Management and Technologies Empowering Livelihoods, highlighted how regional S&T Clusters function as trusted intermediaries that integrate research excellence, industry demand, policy enablers, and community needs. A recurring insight across panels was the critical importance of strengthening translational pipelines, shared testbeds, and pilot-scale validation to accelerate the journey from research to deployment.

The Conference also showcased the maturity of India's S&T Cluster ecosystem through validated, high-TRL technologies demonstrated at the Technology and Innovation Pavilions, covering clean energy, smart grids, AI-enabled healthcare, precision agriculture, circular economy solutions, advanced manufacturing, digital livelihood platforms, and many more. Complementing these live demonstrations, the inaugural session formally released four thematic technology compendiums on Smart Agri-Tech, Kalaanubhaav, Solid Waste Management, and Water Management and Rejuvenation Technologies. Together, the pavilions and compendiums presented a curated portfolio of deployable, field-tested S&T solutions, offering structured insights into technology readiness, implementation models, and pathways for scale-up and replication. Collectively, these outputs reinforced the capacity of S&T Clusters to translate research into scalable, cost-effective solutions aligned with national missions and global sustainability objectives, while delivering tangible socio-economic and environmental impact.

A major outcome of the Conference was the formalisation of twelve international Memoranda of Understandings (MoUs) and the launch of a national curriculum-aligned digital knowledge platform. These partnerships establish structured mechanisms for joint research, technology co-development, regulatory and standards harmonisation, skilling, and capacity building across clean energy, MedTech, mobility, circular economy, advanced manufacturing, agriculture, water, and livelihoods. Collectively, they signal a clear shift from dialogue-led engagement to outcome-driven international collaboration anchored in co-creation, pilot-led validation, and shared implementation.

Looking forward, the Conference converged on a shared agenda to institutionalise global cluster-to-cluster networks, enable interoperable innovation frameworks, and accelerate scale-up through consortium-driven programs and aligned public–private partnerships. Emphasis was placed on embedding inclusion, sustainability, and resilience as core performance metrics, alongside technical readiness and commercial viability. In this context, the S&T Clusters are envisioned to function as "National Technology Accelerators", catalysing rapid translation of research into deployable solutions. This outcome document consolidates key insights, priorities, and recommendations into a strategic reference framework to guide all Clusters, industry, and international partners in aligning investments, designing joint programs, and tracking progress.

Overall, the Conference reaffirmed the central role of science and technology as powerful enablers of inclusive growth and shared prosperity, while setting the stage for a globally connected, implementation-focused S&T ecosystem. The outcomes are expected to drive sustained international collaboration and speed the adoption of socially relevant, climate-aligned technologies, ensuring that innovation delivers tangible societal benefits while strengthening resilience, competitiveness, and long-term sustainability.

Report prepared by:

Dr. Vishal Choudhary
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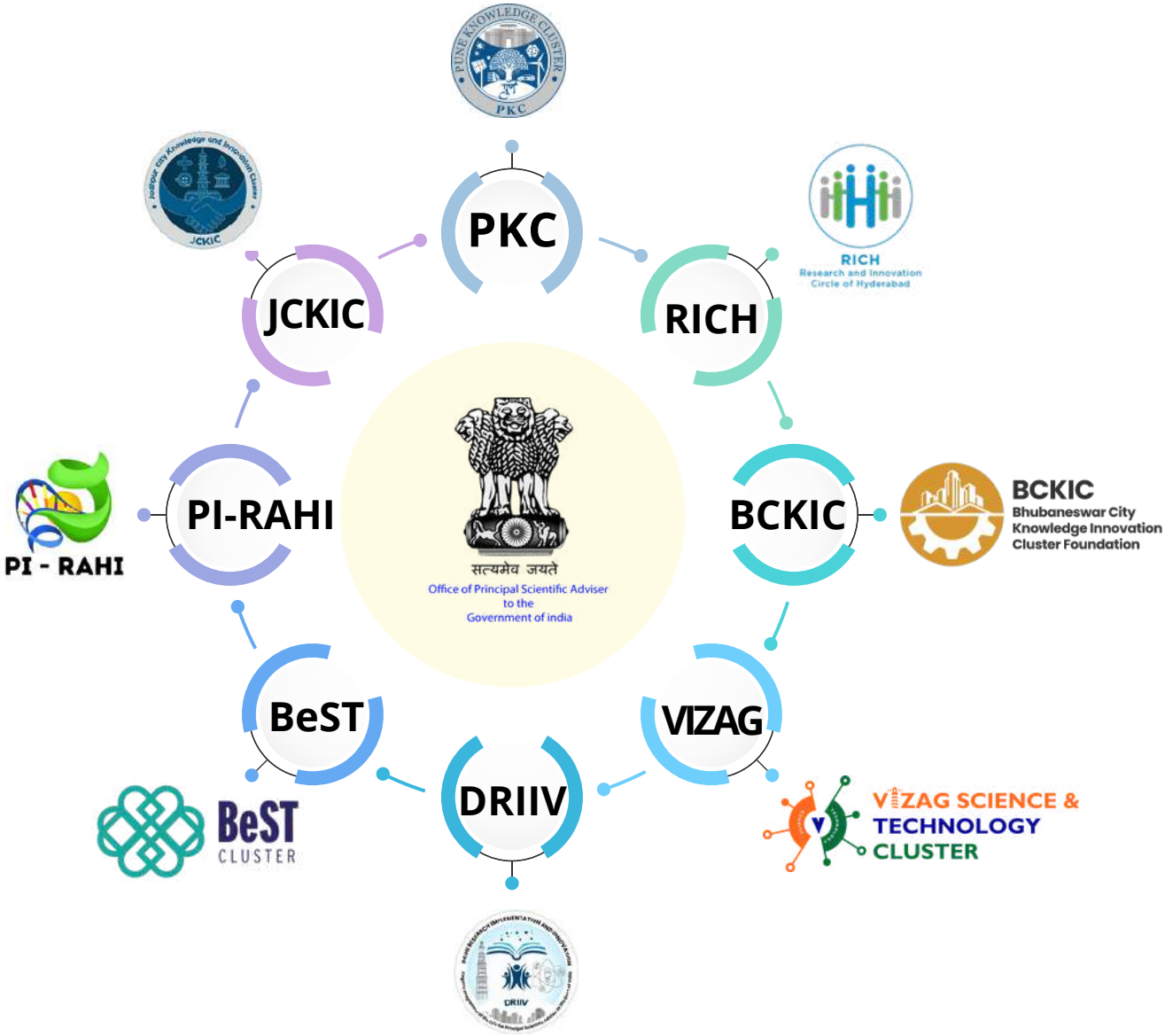
2. Introduction

Science and Technology (S&T) has emerged as a central driver of global transformation, particularly in addressing complex, interlinked challenges such as climate resilience, sustainable development, digital transformation, and public health security. These challenges increasingly demand coordinated, cross-disciplinary, and multi-stakeholder responses that work beyond traditional institutional boundaries and sectoral silos. Recognising this goal, the Office of the Principal Scientific Adviser (PSA) to the Government of India launched the Science & Technology (S&T) Clusters initiative in 2020, based on the recommendations of the Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC).

The S&T Clusters initiative is a flagship program, designed to integrate India's extensive scientific and technological capabilities into cohesive, demand-driven regional innovation ecosystems. Anchored in a consortium-based governance model, the initiative brings together academia, R&D institutions, industry, start-ups, MSMEs, incubators, state and central government bodies, philanthropic organisations, and civil society to enable collaborative research, technology co-development, and accelerated deployment of solutions. The Clusters focus on addressing region-specific and nationally relevant challenges that require coordinated S&T interventions and cannot be effectively solved by individual institutions working in silos. Their structure follows a three-tiered pyramid model: the foundational tier builds a shared ecosystem among institutions; the intermediate tier emphasizes regional problem-solving; and the top tier aspires toward national and global competitiveness.

Each S&T Cluster functions as a Section-8 not-for-profit entity led by a CEO/COO, enabling the mobilisation of public and private resources for regional S&T-led development. Through shared infrastructure, high-TRL pilots, translational research platforms, and industry-linked innovation programs, the Clusters function as regional engines for S&T-led socio-economic development. The initiative aligns closely with national priorities such as "Atmanirbhar Bharat" and contributes to India's long-term development vision of "Viksit Bharat 2047" by strengthening indigenous capabilities, fostering innovation-driven growth, and delivering measurable societal impact.

Currently, there are eight S&T Clusters operational in the country serving as platforms to integrate scientific capabilities, accelerate technology deployment, and deliver measurable socio-economic outcomes.



Their key achievements span multiple high-impact domains, including the development of electric vehicle charging infrastructure across the Delhi–NCR region by DRIIV, Delhi; the launch of Kalaanubhav.in, an AR/VR-enabled digital marketplace to enhance artisan visibility and livelihoods by JCKIC, Jodhpur; and the establishment of efficient biomass supply-chain linkages through the digital platform Pindgrid by PI-RAHI in the Northern Region. In the health and sustainability sectors, BeST, Bengaluru has advanced health-tech innovations such as diabetic foot-screening mats alongside One Health initiatives, while BCKIC, Bhubaneswar; PKC, Pune; and RICH, Hyderabad have implemented interventions focused on waterbody rejuvenation and plastic waste management. Additionally, the Vizag Cluster at AMTZ has established the indigenous e-waste management facility “Eyantram” and developed pacemaker leads, thereby strengthening domestic capabilities in environmentally responsible electronics recycling and advanced medical device manufacturing.

A global comparative analysis conducted by the Office of the PSA indicated that over 45 countries have established structured, cluster-based innovation systems that bring together multi-stakeholder ecosystems to address regional and national challenges through coordinated S&T interventions. In view of the evolving international innovation landscape, and recognising the strategic opportunity to position India's S&T Clusters program within a broader global innovation architecture, it was deemed necessary to create a dedicated platform for technical dialogue, peer learning, and partnership building. Accordingly, an International Conference on S&T Clusters was conceptualised to enable structured knowledge exchange, promote interoperability of cluster frameworks, and catalyse collaborative research and technology deployment with leading global institutions, thereby initiating, for the first time, a focused international engagement dimension for India's S&T Cluster ecosystem.

Figure 1: Venue of the S&T Clusters International Conference

3. Conference Overview

The "First International Conference on S&T Clusters – *Making Lives Easier through S&T"* was convened at the Dr. Ambedkar International Centre, New Delhi, from 4–5 December 2025, marking a significant milestone in India's international engagement on cluster-led innovation. The inaugural session was chaired by Prof. Ajay Kr. Sood, PSA to the Government of India, along with Dr. (Mrs.) Parvinder Maini, Scientific Secretary, Office of the PSA, with Prof. Sir John Edmunds, Chief Scientific Adviser to the United Kingdom, as the Chief Guest.

Figure 2: Inauguration Session - Day 1


Figure 3: Prof. Ajay Kr. Sood, PSA, addressing the audience – Day 1

The Conference brought together ambassadors and senior diplomats from over 35 countries, 40 international speakers representing 20 nations, senior government officials, industry leaders, academic institutions, and start-up representatives, reflecting strong global interest in India's cluster-based S&T model. Setting the technical context for the deliberations, Dr. Vishal Choudhary, Scientist-F, Office of the PSA, presented a comprehensive overview of the S&T Clusters program, highlighting its evolution, governance framework, and key achievements over the past five years. The session established a shared understanding of the program's outcomes and provided a structured foundation for subsequent discussions on global best practices, interoperability of cluster models, and pathways for international collaboration.

Figure 4: Launch of Compendiums - Day 1

The inaugural session was further marked by the formal release of four thematic technology compendiums, focusing on Smart Agri-Tech, Kalaanubhaav, Solid Waste Management, and Water Management and Rejuvenation Technologies. These compendiums consolidate deployable, field-tested S&T solutions developed across the S&T Clusters, providing structured insights into technology readiness levels, implementation models, and potential pathways for scale-up and replication. A brief overview of the scope and technical focus of each compendium is outlined below.

1. Compendium on Empowering Artisans through Digital Commerce and Innovation

This compendium highlights the role of digital technologies in strengthening and transforming artisan livelihoods through the “Kalaanubhaav” platform. It showcases how the platform enables artisans to gain greater visibility, access wider markets, and engage directly with consumers, thereby addressing challenges related to income stability, limited outreach, and market access. The featured work reflects the use of technology as an enabler of inclusive economic growth, improved decision-making, and sustainable livelihood development, underscoring the commitment to building resilient, future-ready artisan and community-based enterprises.

2. Compendium on Solid Waste Management

This compendium presents a curated set of S&T led solutions addressing critical challenges across the waste management value chain. It highlights market-ready and field-tested innovations spanning material recovery and recycling, AI and IoT enabled tracking and sorting, robotics, and data-driven decision systems that improve segregation, resource recovery, and environmentally sound disposal. The showcased work reflects the collective efforts of India's innovation ecosystem to enhance operational efficiency, optimise resource use, and advance a resilient, circular, and future-ready waste management framework.

3. Compendium on Water Management & Rejuvenation Technologies

The inaugural session was further marked by the formal release of four thematic technology compendiums, focusing on Smart Agri-Tech, Kalaanubhaav, Solid Waste Management, and Water Management and Rejuvenation Technologies. These compendiums consolidate deployable, field-tested S&T solutions developed across the S&T Clusters, providing structured insights into technology readiness levels, implementation models, and potential pathways for scale-up and replication. A brief overview of the scope and technical focus of each compendium is outlined below.

4. Compendium on Smart Agri-tech

This compendium showcases a diverse portfolio of S&T driven solutions that highlight India's rapidly advancing agri-tech landscape. It brings together market-ready innovations that have demonstrated proven impact at the field level, spanning climate-resilient and climate-smart practices, bio-based inputs, precision agriculture, drones, robotics, geospatial intelligence, and data-driven decision-support systems. These solutions reflect the collective efforts of India's innovation ecosystem to enhance agricultural productivity, optimise resource use, strengthen resilience to climate variability, and deliver scalable, farmer-centric outcomes, particularly for small and marginal farmers.

Figure 5: Inauguration of the Technology and Innovation Pavilions – Day 1

The two-day program brought together expert-led technical sessions, thematic panel discussions, and focused roundtable interactions, complemented by a technology exhibition showcasing validated, deployment-ready solutions emerging from the S&T Clusters. The exhibition, inaugurated by the PSA, highlighted technologies across advanced stages of readiness with demonstrated potential for scale and replication. The key insights, best practices, and implementable recommendations emerging from each panel, along with a brief technical overview of the technologies demonstrated during the exhibition, are presented in the following sections.

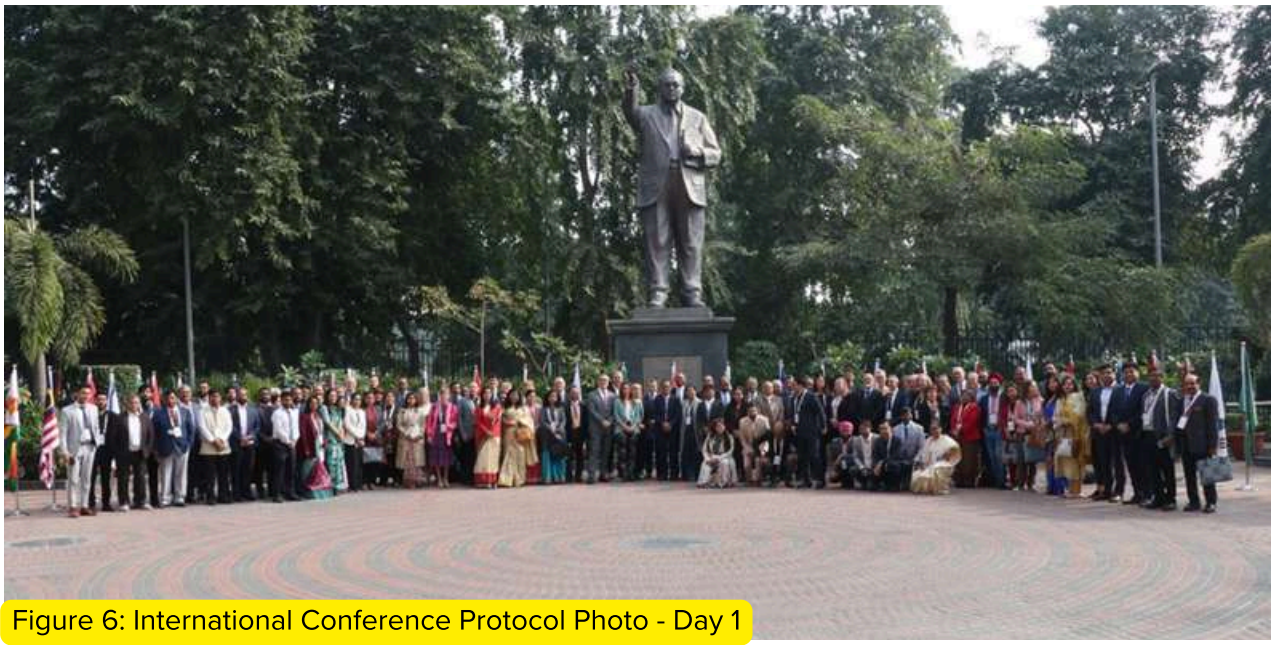
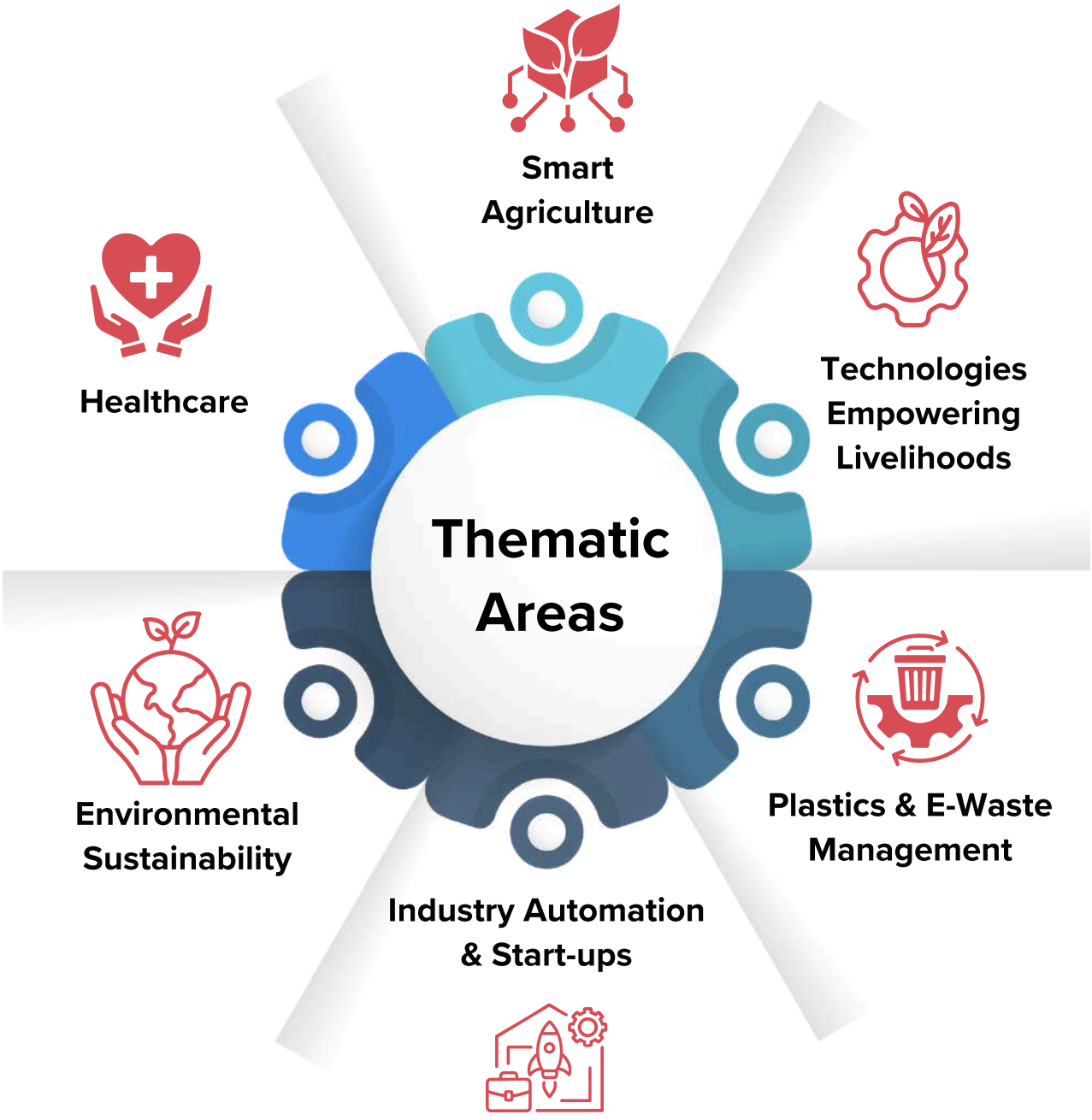


Figure 6: International Conference Protocol Photo - Day 1

4. Panel-wise Outcomes

The two-day event was structured around six thematic areas aligned with national and global priority domains, namely Smart Agriculture, Healthcare, Environmental Sustainability, Industry Automation and Start-ups, Plastic and E-Waste Management, and Technologies Empowering Livelihoods. Each theme was examined through high-level panel discussions that brought together global experts, policymakers, S&T Cluster leadership, industry stakeholders, and innovation strategists, enabling cross-sectoral and cross-geographical perspectives. The discussions focused on technology readiness, deployment pathways, policy enablers, and scale-up mechanisms. The detailed outcomes, key insights, and recommendations emerging from these thematic deliberations are presented in the sections below.



SMART AGRICULTURE

i. Smart Agriculture

The two-day event was structured around six thematic areas aligned with national and global priority domains, namely Smart Agriculture, Healthcare, Environmental Sustainability, Industry Automation and Start-ups, Plastic and E-Waste Management, and Technologies Empowering Livelihoods. Each theme was examined through high-level panel discussions that brought together global experts, policymakers, S&T Cluster leadership, industry stakeholders, and innovation strategists, enabling cross-sectoral and cross-geographical perspectives. The discussions focused on technology readiness, deployment pathways, policy enablers, and scale-up mechanisms. The detailed outcomes, key insights, and recommendations emerging from these thematic deliberations are presented in the sections below.

Figure 7: Session 1: Smart Agriculture – Day 1

a. Key Findings & Insights

Comparative perspectives from participating countries highlighted how diverse innovation ecosystems have responded to challenges such as water scarcity, soil degradation, labour shortages, fragmented landholdings, and climate variability through tailored technological and policy interventions. The panel showcased how countries have leveraged technology, policy, and partnerships to modernise agriculture under diverse constraints. Australia's experience demonstrated the impact of mechanisation, smart irrigation, and climate-resilient crop genetics in managing low soil fertility and water stress, while highlighting the importance of farmer education and enabling policies such as R&D incentives and structured university–government–industry collaboration for India. Switzerland emphasised automation and resource-use efficiency as levers for improving productivity and quality of life, supported by strong co-creation models between academia and industry to drive commercialisation.

Italy's experience revealed parallels with India in terms of fragmented farm holdings, while showcasing how robust public–private partnerships, farmer-centric capacity building, and innovation incubation mechanisms have successfully translated research outputs into market-ready solutions. Spain demonstrated how acute water stress has catalysed innovation, accelerating the adoption of AI-enabled irrigation, advanced desalination technologies, robotics, and artificial vision–based sorting & harvesting systems to address labour constraints and enhance productivity. The experience further underscored the role of coordinated government–industry support, on-farm demonstrations, and service-based delivery models in rapidly scaling these technologies & driving widespread adoption.

Germany's Cognitive Agriculture (COGNAC) platform emerged as a lighthouse model, illustrating how integrated data spaces and ecosystem-level collaboration among universities, start-ups, and industry can address complex agricultural challenges through shared intelligence & Co-Innovation.

Figure 8: Panel Discussion – Smart Agriculture – Day 1

The approach highlights the effectiveness of strategic alliances and applied research ecosystems in accelerating innovation-to-market pathways, offering strong relevance for India in scaling climate-smart agriculture, reducing post-harvest losses, and deploying affordable, customised smart farming solutions for smallholder farmers.

Across discussions, a recurring concern was the persistent gap between advanced research and on-ground adoption, particularly at the farmer level. This highlighted the need for contextualisation, localisation, and service-based delivery models to ensure that globally successful technologies are adapted effectively to India's diverse agro-ecological and socio-economic conditions.

b. Agreed Priorities for Collaboration, Action Points, and Recommendations

The panel reached a clear consensus on the need to advance structured international collaboration to accelerate the adoption of smart and climate-resilient agricultural solutions. A key insight was the critical role of progressive and leading farmers as early adopters who de-risk innovation and enable wider diffusion through peer learning & demonstration-led uptake. Drawing from Australia's experience, the panel highlighted the value of large-scale grower demonstration networks, such as the 25 demonstration sites established under its long-term emissions-reduction initiative, as effective platforms for validating regenerative and low-carbon agricultural practices. Similar collaborative pilots between Indian and international partners were identified as priority pathways to promote climate-friendly & emissions-reducing agriculture in India.

International models further underscored the importance of co-creation and cluster-led coordination. Switzerland's "Innosuisse" programs demonstrated how close collaboration among research institutions, industry, and farmers can translate precision systems and quality-driven technologies into market-ready solutions that improve efficiency and farmer livelihoods. Italy's cluster-based approach reinforced the role of clusters as intermediaries for coordinating research, bridging technology gaps, and enabling researchers to transition into entrepreneurs, thereby strengthening adoption capacity. Spain's contributions highlighted the deployment of AI-enabled water-management applications, desalination technologies for agriculture, and salt-tolerant crops, while Australia and Switzerland showcased the use of AI-driven irrigation optimisation and precision systems to deliver consistent quality standards.

Building on these insights, the panel agreed on priority areas for global cooperation, including AI-enabled irrigation and water management, regenerative and climate-smart agriculture, precision and quality-compliant farming systems, and scalable demonstration-led adoption models. To operationalise these priorities, a set of action points was identified:

- Initiating formal engagement with international partner organisations to explore MoUs
- Aligning collaboration areas with India's agricultural priorities
- Designing structured collaboration roadmaps linking Indian clusters, FPOs, start-ups, and research institutions
- Leveraging bilateral agreements and joint funding mechanisms
- Co-developing concept notes and proposals
- Launching cross-country pilot projects for technology validation
- Facilitating start-up and researcher exchanges
- Scaling successful pilots through FPOs, PPP models, and government programs

The panel also put forward targeted recommendations to strengthen research translation, funding pathways, and talent mobility. A notable announcement was the designation of 2026 as the India–Spain Dual Year for Artificial Intelligence with a special focus on agriculture. This initiative aims to leverage AI to align agricultural production with evolving consumer and market trends, with initial collaboration opportunities identified in horticulture, such as olive oil value chains, with scope for extension to other crops. The S&T Clusters were encouraged to leverage this opportunity by developing customised, region-specific programs to deploy AI-driven solutions, thereby reinforcing international collaboration and accelerating the adoption of smart agriculture technologies in India.

c. Strategic Outlook and Way Forward

The panel deliberations reaffirmed a shared commitment to strengthening global S&T cooperation as a critical enabler of smart and sustainable agriculture. Discussions underscored the importance of tightly integrating research with field-level and market requirements to accelerate adoption and scale, including aligning research priorities with farmer and industry needs, engaging progressive farmers as early adopters, and leveraging cluster-based collaboration to shorten innovation-to-deployment timelines. Panellists emphasised that enabling policy frameworks, robust public–private partnerships, and coordinated international collaboration are essential for mainstreaming digital and climate-smart agricultural practices. In this context, Switzerland's model of "future farms" for localised validation of technologies across diverse agro-ecological landscape was identified as particularly relevant for India.

Figure 9: Group photo for Smart Agriculture Session with Panelist and Moderators

Looking ahead, the emerging vision positions India as a real-world testbed for scalable, inclusive, and climate-resilient agri-innovation, anchored in structured, mission-driven international research and industry partnerships. Through S&T Clusters, the focus will shift from dialogue to co-creation, field validation, and large-scale deployment of smart agriculture solutions tailored to small and marginal farmers. Over the long term, these efforts aim to deliver measurable farmer-centric outcomes, including enhanced productivity, income stability, and climate resilience, while reducing water use, input costs, post-harvest losses, and environmental footprint. Institutionalised global innovation pipelines, supporting joint research, co-funding, start-up exchange, and capacity building, are expected to accelerate innovation-to-market pathways and position India as a global hub for testing, validating, and scaling smart agriculture solutions for emerging economies.

HEALTHCARE

ii. Healthcare

The Healthcare Panel brought together senior leaders from government, academia, and global innovation ecosystems to examine science-led and collaborative pathways for strengthening healthcare system resilience. Co-chaired by the Vizag–AMTZ Cluster and PKC, the session featured expert insights from Prof. Sir John Edmunds (United Kingdom), Ms. Caitlin Searle (Australia), Dr. Mary-Anne Hartley (Switzerland), Dr. Fabian Hecklau (Germany), and Ms. Geeny George (Sweden), who shared perspectives on advancing MedTech innovation, regulatory harmonisation, and cross-border cooperation. The discussions emphasised the role of translational research, inclusive digital health platforms, and evidence-based policymaking in enabling sustainable, equitable, and technology-enabled healthcare systems capable of addressing complex global health challenges.

Figure 10: Session 2: Healthcare – Day 1

a. Key Findings & Insights

The thematic deliberations underscored that resilient and future-ready healthcare systems must be built on sustained science–policy integration, inclusive innovation ecosystem, and trusted international collaboration. Experts emphasised that preparedness for future pandemics and emerging health threats requires continuous investment in surveillance systems, predictive modelling, and evidence-based decision-making, with scientific advisory mechanisms embedded within governance and foreign policy frameworks. The discussions highlighted the growing importance of regulatory harmonisation to accelerate co-development, testing, and market access for health technologies, particularly in MedTech, thereby strengthening cross-border trust and innovation velocity.

A strong focus was placed on responsible digital health innovation. Panellists demonstrated how AI-enabled health systems, when designed using ethical, explainable, and human-centred approaches, can be effectively deployed in low-resource and humanitarian settings to improve equity and access. Frameworks for assessing innovation maturity within healthcare organisations were highlighted as critical tools to bridge the gap between R&D and implementation, enabling scalable and sustainable adoption of digital solutions across hospitals, research institutions, and start-up ecosystems. International perspectives further reinforced the value of co-creation platforms and bilateral innovation hubs that combine advanced innovation ecosystems with scale and diversity to drive breakthroughs in AI-driven healthcare, circular bioeconomy solutions, and public health technologies.

Figure 11: Panel Discussion – Healthcare – Day 1

At a broader level, the session reaffirmed science-driven collaboration as a strategic imperative for addressing complex global challenges. The cluster-based innovation model emerged as a powerful mechanism for regional transformation, enabling shared infrastructure, translational research, and industry–academia synergy to accelerate technology readiness and economic impact. The convergence of digital and green technologies was identified as a defining pillar of future growth, alongside the need for robust innovation governance, regulatory convergence, and ethical frameworks to support technology transfer and commercialisation. Strengthening science communication, public trust, and citizen engagement was recognised as essential for sustaining innovation ecosystems. Finally, start-ups were acknowledged as key drivers of applied innovation, with strong emphasis on enhancing their access to R&D support, funding, and global partnerships to enable rapid scaling of high-impact technologies.

b. Agreed Priorities for Collaboration, Action Points, and Recommendations

The deliberations highlighted that, despite rapid advances, global innovation ecosystems remain fragmented, underscoring the need for structured cluster-to-cluster linkages and coordinated policy mechanisms to enable seamless knowledge exchange and joint problem-solving. Participants noted that many scientific innovations fail to progress beyond proof-of-concept stages, pointing to the urgent requirement for stronger translational research pipelines, shared validation platforms, and pilot-scale testing infrastructure. The discussions also recognised persistent disparities in access to advanced infrastructure and skilled manpower in developing regions, positioning the cluster model as a key instrument for democratising innovation through local capacity building. In parallel, the rapid expansion of AI, biotechnology, and automation has exposed gaps in globally aligned ethical and regulatory frameworks, presenting an opportunity for science diplomacy to co-create international norms. Sustainable funding models, combining public investment, private capital, and international cooperation, were identified as critical, with strong support for establishing international innovation funds to enable cross-border R&D and technology transfer.

Against this backdrop, the Conference identified priority domains for global cooperation under India–EU S&T engagement and international cluster partnerships, including healthcare and MedTech innovation (medical devices, digital health, diagnostics, and sterilisation technologies), industry automation and advanced manufacturing (robotics, AI-driven process optimisation, industrial IoT), and clean and sustainable technologies (renewable energy, green manufacturing, and circular economy solutions). Participating partners reaffirmed their commitment to joint research programs, multilateral and consortium-based collaboration, open data-sharing frameworks, interoperable digital infrastructure, shared R&D facilities across S&T Clusters, researcher and start-up mobility, and co-funding mechanisms supported by policy-level coordination.

To operationalise these priorities, a collaborative roadmap was outlined with clear action points, which includes:

- Establishing thematic working groups aligned with priority sectors
- Designing multilateral research and innovation programs involving international partners and Indian S&T Clusters
- Promoting co-funded translational R&D, pilot manufacturing, and validation activities
- Enabling shared access to specialised infrastructure and cross-border testbeds for prototyping, certification, and regulatory harmonisation
- Strengthening knowledge exchange through researcher, start-up, and policymaker mobility programs
- Creation of international coordination mechanisms for standards, data, and IP frameworks
- Adoption of open innovation principles
- Implementation of robust monitoring and evaluation systems using defined performance indicators.

The biennial reviews led by participating clusters and global partners were also recommended to ensure sustained relevance, impact, and scalability of collaborative outcomes. Together, these action points convert strategic priorities into an operational collaboration framework, enabling sustained co-creation through shared infrastructure, co-funded R&D, open innovation, and robust monitoring. This approach underpins the Conference's broader vision of a globally connected, impact-driven S&T innovation ecosystem.

c. Strategic Outlook and Way Forward

The session articulated a long-term strategic vision to strengthen global science and technology cooperation through an integrated innovation network that connects S&T Clusters, universities, research institutions, start-ups, and industry partners on a shared digital collaboration platform. The overarching objective is to position India and its international partners as co-creators of advanced technologies rather than isolated innovators, while ensuring that collaborative actions remain aligned with the UN Sustainable Development Goals, particularly in healthcare, clean energy, and responsible and ethical innovation.

To enhance research translation and accelerate innovation pathways, the discussions emphasised the need for jointly developed technology validation frameworks covering clinical, industrial, and regulatory trials to enable interoperability and faster approvals across jurisdictions. The establishment of cross-border innovation sandboxes and testbeds was recommended to support prototype testing, certification, and co-validation of technologies at scale. Participants also highlighted the importance of cross-sectoral convergence, such as MedTech–AI–materials science, to enable multidisciplinary product development, alongside open innovation platforms and digital repositories for sharing research outputs, datasets, and technology blueprints. Cluster-based innovation consortia were proposed as effective mechanisms to bring together start-ups, academia, and public research institutions around mission-oriented themes, supported by intellectual property co-ownership models for jointly developed technologies.

In conclusion, the session reaffirmed a collective global commitment to advancing innovation, inclusivity, and sustainability through strengthened international collaboration. The way forward envisions the creation of a dynamic Global S&T Network that promotes co-creation, translational research, talent mobility, and policy harmonisation for seamless cross-border engagement. Over the long term, these efforts are expected to accelerate technology development, empower start-ups, expand advanced manufacturing ecosystems, and deliver socio-economic impact at scale, positioning global partnerships as key drivers of resilient, inclusive, and sustainable technological progress.

Figure 12: Group photo for Healthcare Session with Panelist and Moderators

ENVIRONMENTAL SUSTAINABILITY

iii. Environmental Sustainability

The Environmental Sustainability session examined pathways to advance climate resilience, resource security, and inclusive growth through coordinated international action aligned with national priorities and geared towards large-scale implementation. Co-chaired by BCKIC and DRIIV, the session featured expert perspectives from H.E. Ms. May-Elin Stener and Mr. Sonal Kumar (Norway), Mr. Ben Jorgensen (Denmark), Prof. Ilja Gasan Osojnik Črnivec (Slovenia), Prof. Manfred Max Bergman (Switzerland), Prof. Francesco Corvaro (Italy), Ms. Noa Amsalem (Israel), and Mr. Jan Reint Smit (Netherlands). The discussions centred on clean energy transitions, water security, circular economy approaches, and climate-resilient livelihoods, highlighting the critical role of international cooperation. Emphasis was placed on scaling technology deployment and strengthening industry participation to translate sustainability commitments into measurable and verifiable on-ground outcomes.

Figure 13: Session 3: Environmental Sustainability – Day 1

a. Key Findings & Insights

The deliberations underscored that effective climate and resource action requires a strong integration of policy, technology, and implementation ecosystems. International experiences demonstrated that sustainability strategies are most impactful when policy cooperation is closely linked with deployable technologies, mission-oriented programs, and private sector participation. Clean and green energy, blue economy initiatives, climate-resilient livelihoods, and water security emerged as priority areas where bilateral and multilateral collaboration can deliver significant impact.

The panel highlighted the growing importance of low-emission and resource-efficient technologies, including sustainable refrigerants, renewable energy systems, green hydrogen, carbon capture, and circular bioeconomy solutions. Participants stressed that the transition to low-global-warming-potential (low-GWP) technologies must balance energy efficiency, circular economy principles, and national climate commitments, supported by technician training, MSME engagement, and data-driven planning. Water security was identified as a foundational pillar of sustainability, with strong emphasis on integrated water management, smart water systems, desalination, wastewater reuse, groundwater recharge, and river rejuvenation.

Advanced digital tools, such as SCADA systems, IoT-enabled sensors, AI/ML-based monitoring and forecasting, and command-and-control centres, were highlighted as critical enablers for managing complex climate and resource systems in real time. The discussions also brought attention to emerging technological frontiers, including green hydrogen as an industrial decarbonisation enabler, novel carbon capture processes converting CO_2 into fuels and materials, and advanced electrochemical and nanomaterial-based recovery of critical raw materials from waste streams. Across these domains, pilot-scale validation (TRL 3–6), living laboratories, and real-world testbeds were emphasised as essential for adapting global solutions to local contexts.

b. Agreed Priorities for Collaboration, Action Points, and Recommendations

The panel reached a strong consensus that sustainable solutions must be collaborative, mission-driven, and implementation-focused. Innovation clusters were recognised as critical execution platforms that bridge research, policy, and market deployment, enabling cluster-to-cluster collaboration and faster scale-up. Priority areas for international cooperation identified during the discussions include clean and renewable energy, green hydrogen and sustainable fuels, water security and river rejuvenation, circular bioeconomy and waste-to-value solutions, climate adaptation technologies, and integrated food–water–energy systems.

To operationalise these priorities, participants emphasised the need for joint testbeds and living laboratories to validate technologies under real-world conditions, supported by coordinated financing, regulatory clarity, and industry participation. Capacity building and institutional readiness across utilities, local governments, MSMEs, and research organisations were identified as essential for sustaining long-term impact. The panel also highlighted opportunities for structured collaboration through bilateral and multilateral research programs, innovation networks, and cluster-led pilots, aligned with national missions and global climate goals.

c. Strategic Outlook and Way Forward

The panel articulated a forward-looking vision where environmental sustainability is advanced through systems thinking, data-driven decision-making, and deep international partnerships. The way forward emphasises moving beyond pilots towards commercial-scale deployment of proven solutions, supported by long-term policy certainty, mission-oriented public procurement, and blended financing models. Strong emphasis was placed on leveraging digital platforms, shared data infrastructures, and coordinated governance frameworks to manage climate and resource challenges holistically.

In conclusion, the Environmental Sustainability panel reaffirmed that scaling climate-resilient and resource-efficient solutions requires aligned international cooperation, empowered innovation ecosystems, and strong implementation mechanisms. By leveraging S&T Clusters as platforms for co-development, piloting, and deployment, the discussions outlined a clear pathway to translate global sustainability knowledge into local action, thereby delivering tangible outcomes in climate resilience, resource security, and inclusive economic growth.

Figure 14: Group photo for Environmental Sustainability Session with Panelist and Moderators

INDUSTRY AUTOMATION & START-UPS

iv. Industry Automation & Start-ups

The Industry Automation & Startups session examined pathways for accelerating industrial transformation through innovation-led entrepreneurship aligned with real market and industrial demand, with a focus on large-scale deployment. Co-chaired by RICH and the Vizag–AMTZ Cluster, the session featured expert perspectives from Dr. Alenka Mauko Pranjić (Slovenia), Ms. Eirin Fossberg (Norway), Dr. Angela Honnegger (Switzerland), Mr. Ola Svedin (Sweden), Mr. Brendan O'Neill (United Kingdom), Dr. Julianne Biddle (Australia) and Prof. Pratim Biswas (USA). The discussions centred on deep-tech integration across precision engineering, AI-driven automation, and circular economy solutions, highlighting the importance of demand-driven innovation, trusted data ecosystems, and science-led automation. Emphasis was placed on scaling technology deployment through strong cluster-based support, cross-border collaboration, advanced sensing and control systems, and inclusive skilling to translate innovation into resilient, globally competitive industrial outcomes.

Figure 15: Session 4: Industry Automation and Startups – Day 2

a. Key Findings & Insights

The deliberations across technical sessions generated a set of cross-cutting scientific, technological, and policy insights relevant to the evolution of global S&T ecosystems. A central theme was the need for problem-led and context-sensitive innovation, anchored in real industrial, societal, and community challenges, rather than technology-push approaches. The discussions reaffirmed the role of S&T Clusters as trusted intermediaries, capable of bridging start-ups, academia, industry, and policymakers to de-risk innovation, accelerate translation, and enable coordinated deployment.

From a technological perspective, participants emphasised that science-driven automation, underpinned by advanced sensing, real-time monitoring, digital twins, and data analytics, is critical to achieving circularity, system optimisation, and operational efficiency across sectors. Equally important was the emphasis on inclusive innovation models, particularly those that enable women and underrepresented communities to participate meaningfully in AI and data-driven workflows, thereby strengthening sustainability, workforce resilience, and long-term talent retention. At a strategic level, the discussions highlighted that bilateral and multilateral collaboration significantly reduces time-to-validation, supports scale-up, and enables global deployment of technologies through shared risk, knowledge, and infrastructure.

Ecosystem-level contributions provided practical illustrations of these principles. Swissnex underscored the value of bottom-up innovation, precision technologies, and deep academia–industry collaboration, supported by trust-building mechanisms such as open-source and transparent AI. Clusters of Sweden highlighted how cluster platforms enable stakeholder convergence, circular economy adoption, and digital transformation of SMEs. Australia's Crop Trust emphasised the importance of conserving crop diversity through community-centric approaches and leveraging long-standing CRC cluster programs to reduce start-up and technology risks. Norway-based Naya Development demonstrated ethical AI data-labelling models that integrate social inclusion by engaging underprivileged women in India. The UK's Energy Systems Catapult advocated for long-term, technology-agnostic innovation intermediaries and structured cross-border knowledge exchange. Contributions from ZAG and the University of Miami illustrated advanced circular construction and infrastructure monitoring solutions using digital twins, sensing technologies, and automation to enhance industrial resilience and efficiency.

b. Agreed Priorities for Collaboration, Action Points, and Recommendations

The panel identified a set of priority research and innovation domains to anchor future global cooperation, recognising their relevance to climate resilience, sustainability, and technology-enabled development. Key areas include precision agriculture and food security, climate-resilient systems, sustainable construction and infrastructure monitoring, AI-enabled energy systems and demand-response mechanisms, and circular economy technologies. Participants reaffirmed their intent to advance these domains through joint programs, consortium-based collaboration, open data-sharing arrangements, co-development of technologies, and structured exchange of expertise across institutions and countries.

To operationalise these priorities, an indicative roadmap for cluster engagement with international partners was outlined. This includes:

- Expanding start-up–industry–academia linkages and international innovation engagements with Swissnex
- Initiating focused collaboration discussions with Clusters of Sweden across agriculture, healthcare, and sustainability
- Undertaking exploratory engagements with Crop Trust (Australia) on agriculture and crop diversity initiatives
- Strengthening cooperation with the UK's Energy Systems Catapult on energy transition and circularity through mechanisms such as the Energy Leap Technology Accelerator
- Exploring collaboration with Norway-based Naya Development, including potential establishment of operations in Telangana and engagement with women from Tier-2 and Tier-3 cities
- Developing start-up linkages with ZAG (Slovenia) and the University of Miami (USA) in sustainable civil infrastructure and environmental technologies.

The panel further put forward targeted recommendations to strengthen innovation outcomes. For research translation, emphasis was placed on demand-driven, science-led innovation enabled through shared testbeds, living laboratories, and strong cluster-led academia–industry integration to accelerate commercialisation. On funding, participants recommended blended and milestone-based financing models, supported by bilateral and multilateral programs, to de-risk deep-tech development and support scale-up. In terms of talent mobility, the discussions highlighted the need to enhance cross-border researcher and industry exchange programs, with a focus on inclusive upskilling in AI, automation, and circular technologies. Collectively, these measures are expected to reduce start-up risk, accelerate translation from research to deployment, and strengthen a globally connected, resilient innovation ecosystem.

c. Strategic Outlook and Way Forward

The session reaffirmed a strong and shared global commitment to S&T cooperation as a critical enabler of sustainable industrial transformation. Across deliberations and technology demonstrations, there was clear convergence on the need for innovation to be demand-driven, science-led, and anchored in trusted, long-term partnerships spanning governments, academia, industry, and innovation ecosystems.

Figure 16: Group photo for Industry Automation and Startups Session with Panelist & Moderators

Looking ahead, the S&T Clusters will focus on moving decisively beyond dialogue towards implementation by strengthening structured cross-border collaborations and cluster-to-cluster linkages at national and international levels. Priority action will centre on accelerating research translation through coordinated pilots, shared validation platforms, and collaborative deployment pathways. Over the long term, these initiatives are expected to significantly de-risk start-ups, accelerate the uptake of sustainable and inclusive technologies, and deliver measurable, cross-sectoral impact across energy, agriculture, healthcare, and infrastructure. Together, they reinforce global collaboration as a critical enabler of resilient, innovation-driven economic growth.

PLASTICS & E-WASTE MANAGEMENT

v. Plastics and E-Waste Management

The Plastics and E-Waste Management session examined pathways for strengthening sustainable waste management through S&T led interventions aligned with national priorities and scalable implementation. Jointly moderated by PI-RAHI and PKC, the session established an evidence-based baseline for international participants by mapping the scale and composition of India's major waste streams, which includes plastics, e-waste, municipal solid waste, and agricultural biomass. It also outlined the regulatory framework, including the Solid Waste Management Rules (2016) and Plastic Waste Management Rules (2022), along with flagship initiatives such as Swachh Bharat Mission, Waste-to-Wealth, Waste-to-Energy, and GOBARdhan. Expert perspectives from Dr. Søren Tranberg Hansen (Denmark), Ms. Cecilia Tall (Sweden), Dr. Dragica Marinič (Slovenia), Ms. Ana L. Cudero (Spain), Mr. Jan Pieter Van Tilburg (Netherlands), MSc D.Ing. Pierrick Fillon-Ashida (European Union) focused on bio-based recycling, bioplastics, circular economy regulations, and cross-border technology transfer. The session highlighted Cluster–enabled pilots, innovation-led biomass supply-chain models, and localisation strategies, reinforcing the role of regional S&T Clusters as catalytic platforms for piloting, validating, and scaling waste solutions that convert environmental challenges into economic and circular value.

Figure 17: Session 5: Plastics and E-Waste Management – Day 2

a. Key Findings & Insights

The expert deliberations generated significant scientific, technological, and policy insights across bioleaching, sustainable plastics, and circular economy innovation systems. Advances in biotechnological e-waste recovery were highlighted through the application of microorganism-driven bioleaching processes for the extraction of critical raw materials, offering environmentally benign alternatives to conventional metallurgical methods. These approaches, supported by European regulatory and innovation frameworks, demonstrated how structured knowledge exchange, technology transfer, innovation clusters, and public–private partnerships can accelerate the transition from laboratory-scale research to industrial deployment.

Discussions on sustainable plastics emphasised interdisciplinary circular R&D models that integrate academia, industry, and policymakers to enable joint research, pilot-scale validation, and policy alignment. Complementing this, mission-oriented circular economy frameworks were presented as effective mechanisms for driving zero-waste technologies through industry co-creation, testbed-based validation, and deployment at scale. The panel further highlighted emerging bio-based value chains, including the scalable production of high-purity lactic acid from renewable feedstocks as a critical input for bioplastics, with pathways identified for cost reduction, market readiness, and bilateral collaboration through joint ventures and integrated bioeconomy ecosystems. The importance of public–private consortia in embedding sustainability within national innovation systems was underscored, demonstrating how co-funded models can shape circular economy research agendas.

At a multilateral level, opportunities for EU–India collaboration were highlighted through alignment between Horizon Europe and the EU–India Trade and Technology Council (TTC), supporting joint R&D in circular economy, waste reduction, marine plastic mitigation, waste-to-energy and waste-to-hydrogen pathways, and advanced recycling technologies. Collectively, these mechanisms were positioned as an integrated pipeline enabling the translation of joint research and technology development into deployable waste management solutions aligned with circular economy and climate objectives.

b. Agreed Priorities for Collaboration, Action Points, and Recommendations

The panel converged on a set of strategic priorities to advance international collaboration in plastic and e-waste management and the broader circular economy. Central to these is the establishment of cluster-led knowledge exchange platforms to facilitate systematic sharing of best practices, datasets, and validated technologies across countries. Priority research and deployment areas include bioleaching and bio-recovery technologies for e-waste, sustainable plastics and biopolymer innovation, and integrated waste-to-wealth solutions spanning plastics, e-waste, and agricultural biomass. Participants further underscored the need for harmonisation of standards, certification pathways, and regulatory compliance frameworks to accelerate cross-border technology validation, adoption, and market access.

To operationalise these priorities, the panel recommended the co-development of joint concept notes and consortium-based project proposals, leveraging the complementary strengths of international partners and Indian S&T Clusters. The identification and activation of pilot projects and real-world testbeds were highlighted as immediate next steps to validate circular and waste-to-wealth technologies under diverse operating conditions and enable scale-up.

Figure 18: Panel Discussion – Plastics and E-Waste Management – Day 2

At the policy and ecosystem level, the panel emphasised strengthening cluster-driven research translation mechanisms to bridge the gap between R&D and deployment, and expanding access to bilateral and multilateral funding instruments to support Indian innovators and start-ups in advancing circular economy technologies from pilot to commercial scale. Collectively, these measures are expected to accelerate international co-creation, de-risk innovation, and deliver scalable, climate-aligned waste management solutions.

c. Strategic Outlook and Way Forward

The discussions underscored a strong strategic convergence between European and Indian ambitions in clean energy and circular economy transitions, particularly in the domain of green hydrogen. The European Union's target of producing 10 million tonnes of renewable hydrogen and importing an additional 10 million tonnes by 2030 aligns closely with India's National Green Hydrogen Mission, which aims to achieve 5 million tonnes of annual green hydrogen production by the same timeframe. This alignment provides a robust foundation for structured Indo–EU, and especially Indo–Dutch, cooperation spanning technology development, regulatory alignment, capacity building, and market deployment.

Building on this convergence, PI-RAHI will explore the initiation of a joint capacity-building program titled "Indo–Dutch Cooperation on Green Hydrogen: A Techno-Legal Perspective," with strategic support from the Netherlands Innovation Network (NIN) India. The proposed program will establish a formal knowledge-exchange and techno-legal harmonisation platform through expert-led workshops, certification and standards alignment, and pilot demonstrations. By leveraging agricultural biomass from Punjab as a feedstock for low-carbon hydrogen pathways, the initiative aims to accelerate practical implementation, strengthen compliance readiness, and support scalable hydrogen value chains aligned with both Indian and European frameworks.

Figure 19: Group photo for Plastics & E-Waste Management Session with Panelist and Moderators

Collectively, the panel reaffirmed a shared commitment to advancing global science and technology cooperation as a critical enabler of circular economy outcomes in plastic and e-waste management and clean energy transitions. The way forward emphasises translating international collaboration into deployable, scalable, and sustainable solutions through cluster-led execution, coordinated financing, regulatory convergence, and industry participation. These efforts are expected to enhance long-term resource efficiency, strengthen climate resilience, and generate sustained environmental and economic benefits, reinforcing the role of S&T Clusters as catalysts for implementation-oriented and globally connected innovation ecosystems.

TECHNOLOGIES EMPOWERING LIVELIHOODS

vi. Technologies Empowering Livelihoods

The Technologies Empowering Livelihoods session examined pathways for leveraging science, technology, and innovation (STI) to strengthen livelihoods, with a particular focus on grassroots impact, inclusivity, affordability, and scalability. The thematic panel discussion was chaired by JCKIC, focusing on livelihood generation, inclusivity, affordability, and technology scalability across diverse socio-economic contexts. Expert perspectives were shared by Ms. Sharon Madel Artzy (Israel), Dr. Shannon Olsson (Denmark), Prof. Anna Barbara (Italy), Dr. Johannes Barth (Germany), Mr. Masafumi Senda (Japan), Mr. Sedula Mashudubele Mamabolo (South Africa), and Mr. Brando Okolo (African Union), highlighting global best practices in circular economy models, cooperative frameworks, digital platforms, community skilling, and industry-supported livelihood ecosystems. The discussions also examined mechanisms for design registration and Geographical Indication (GI)–based protection of traditional knowledge, underscoring the role of S&T Clusters in converting innovation into inclusive, sustainable, and community-centred livelihood outcomes.

Figure 20: Session 6: Technologies Empowering Livelihoods – Day 2

a. Key Findings & Insights

The discussions underscored that human-centred technology design is fundamental to successful livelihood interventions. Across countries, technologies that proved most effective were simple, frugal, repairable, and community-owned, rather than complex or capital-intensive. Adoption was highest where solutions reinforced dignity and fostered emotional ownership among users, positioning communities as co-owners rather than end-recipients of technology.

The panel further highlighted that livelihood generation and inclusion are most effectively advanced through circular economy practices, skill-based production systems, cooperatives, and the integration of informal skills into formal value chains. Women, informal workers, migrants, artisans, and youth emerged as central agents of innovation and delivery, playing active roles in design, production, and dissemination rather than being passive beneficiaries.

Digital platforms were recognised as critical enablers that enhance market access and coordination without displacing traditional skills. Tools such as e-commerce interfaces, cooperative management systems, and lightweight data-sharing applications were shown to strengthen aggregation, transparency, and outreach. At the same time, the importance of intellectual property and identity protection mechanisms, including design registration and GI tagging, was emphasised to safeguard community-led innovations and ensure long-term value capture.

At a systemic level, the discussions identified shared global challenges that constrain scale and impact, including limited access to affordable and repairable technologies, weak translation of R&D into livelihood outcomes, fragmented institutional coordination, and inadequate financing for early-stage, grassroots innovation. Addressing these gaps was recognised as essential for enabling inclusive, scalable, and dignified livelihood ecosystems.

b. Agreed Priorities for Collaboration, Action Points, and Recommendations

The session identified livelihood-centric innovation as a core priority for international collaboration, with emphasis on the co-development of low-cost, scalable, and context-appropriate technologies for artisans, farmers, and informal workers. Strengthening cluster-to-cluster partnerships emerged as a key strategy to build global networks of S&T Clusters for sharing methodologies, toolkits, and proven implementation models. Participants also highlighted the importance of jointly promoting women- and youth-led enterprises through targeted programs focused on cooperatives, skilling, and community-based entrepreneurship. Knowledge and data sharing through open-source tools, best practices, and policy frameworks were recognised as essential for accelerating replication and scale. Equally, responsible industry–community linkages were emphasised to integrate grassroots skilling, repair ecosystems, and circular supply chains into formal value chains.

As part of the way forward, the session underscored the need for systematic documentation and dissemination of best practices, alongside the promotion of collaborative initiatives across clusters and countries. Sustained policy engagement with national and multilateral stakeholders was identified as critical to aligning cluster-led interventions with broader development priorities. Participants further emphasised the establishment of robust mechanisms for progress monitoring, shared learning, and scaling of successful livelihood models to ensure continuity and long-term impact.

The recommendations focused on strengthening research-to-livelihood translation by redefining success metrics beyond patents and publications to include income generation, resilience, and dignity. Flexible and blended funding mechanisms were proposed to support early-stage, community-driven innovation. Enhancing talent mobility through fellowships, exchanges, and practitioner networks was highlighted as a means to diffuse practical knowledge across clusters. Institutionalising community participation in technology design, deployment, and governance, along with promoting frugal, repairable, and locally maintainable technologies as a global best practice, were identified as critical enablers for inclusive and sustainable livelihood development.

c. Strategic Outlook and Way Forward

The session reaffirmed a shared commitment to positioning S&T as strategic instruments for inclusion, equity, and shared prosperity. Participants emphasised that the future trajectory of S&T Clusters must extend beyond frontier research to ensure that innovation delivers tangible, everyday impact for artisans, farmers, youth, women, and informal workers globally. As a key outcome, a Memorandum of Understanding was formalised between JCKIC and Circular Economy Israel to advance international collaboration across S&T-enabled sustainable livelihoods, artisan empowerment, medical technologies, water conservation, and joint research and knowledge exchange.

Figure 21: Group photo for Technologies Empowering Livelihoods Session with Panelist & Moderators

Going forward, this partnership is expected to serve as a replicable model for future international collaborations, demonstrating how co-creation, pilot-led validation, and shared learning can enable inclusive, climate-resilient, and resource-efficient development across regions and innovation ecosystems.

5. Technology and Innovation Showcase – Exhibition

The dedicated technology exhibition showcased 42 validated, scalable, and high-impact solutions from India's S&T Clusters and international participating countries, underscoring readiness for real-world deployment. The exhibits spanned across environmental sustainability, healthcare, smart agriculture, waste management, industry automation, clean mobility, and livelihood technologies. The showcase highlighted the depth of cluster-led translation from research to implementation, underpinned by industry–academia collaboration.

Figure 22: Technology and Innovation Pavilion setup

In Environmental Sustainability and Clean Energy, the exhibition presented advanced hydrogen and smart-grid solutions, including Type IV hydrogen storage cylinders capable of 700 bar storage with significant weight and cost reductions, hydrogen-based diesel retrofit kits achieving up to 50% emission reduction, indigenous fuel cell systems for mobility and stationary applications, and AI-enabled smart grid and automated demand response (ADR) platforms. The India–Norway DREAMS project demonstrated a consumer-centric, interoperable ADR model using smart meters, IoT devices, and API-based integration, showcasing a globally replicable approach to demand-side energy management.

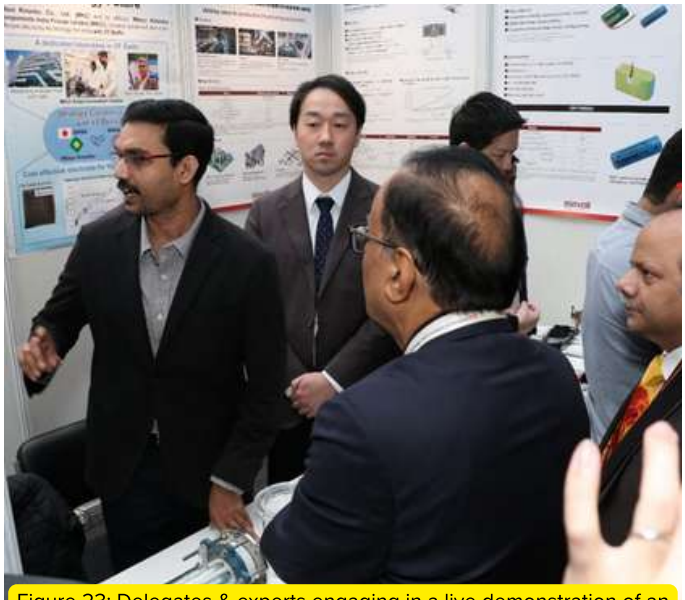


Figure 23: Delegates & experts engaging in a live demonstration of an advanced S&T solution at the Technology and Innovation Exhibition

The Healthcare segment highlighted innovation-led transformation through sustainable microbial bio-colors that significantly reduce water, chemical, and carbon footprints; AI-driven rehabilitation platforms enabling personalised therapy and remote care; neurocognitive assessment and rehabilitation devices; and advanced molecular and genomic diagnostics supporting precision medicine and early disease detection. Digital respiratory health platforms illustrated the role of AI-enabled screening and monitoring in strengthening primary and community healthcare.

Figure 24: Delegates and experts engaging in a live demonstration of an advanced S&T solution at the Technology and Innovation Exhibition.

Figure 25: Delegates and experts engaging in a live demonstration of an advanced S&T solution at the Technology and Innovation Exhibition.

In Smart Agriculture, AIoT-enabled platforms demonstrated precision livestock management, controlled environment agriculture, and climate-resilient farming, integrating real-time sensing of soil, water, climate, and animal health. The exhibition further highlighted deployable agricultural technologies such as a thermodynamics-based polyhouse with solar chimney ventilation and drone-mounted precision spraying systems enabling drift-free atomisation. It also featured pheromone-based bio-attractants and repellents for sustainable pest control, along with plant and leaf mimic systems for fine-scale evapotranspiration and water-use measurement.

The Waste Management and Circular Economy segment featured end-to-end e-waste processing systems, advanced pyrolysis technologies for mixed plastic waste, phycoremediation using microalgae for water, air, and soil remediation, and net-zero energy sewage treatment solutions based on biomimicry. Live demonstrations reinforced the viability of waste-to-wealth models through automation, material recovery, and low-carbon processes.

Figure 26: Delegates and experts engaging in a live demonstration of an advanced S&T solution at the Technology and Innovation Exhibition.

In Industry Automation and Clean Mobility, the exhibition showcased 3D metal printing for patient-specific medical implants, integrated EV charging and battery swapping ecosystems with centralised management systems, and digital sustainability intelligence platforms enabling real-time tracking of waste, carbon, resources, and Environmental, Social, and Governance (ESG) metrics.

The Technologies Empowering Livelihoods exhibition segment showcased digital platforms that enable artisans to access national and global markets through improved visibility, aggregation, and direct-to-consumer linkages. It also featured AR/VR-enabled digital museums and immersive craft documentation tools, demonstrating how advanced digital technologies can preserve traditional knowledge, enhance storytelling, and create new livelihood and market opportunities while retaining the authenticity of artisanal skills.

Figure 27: Delegates and experts engaging in a live demonstration of an advanced S&T solution at the Technology and Innovation Exhibition.

Collectively, the exhibition exemplified the conference's core vision of linking innovation with implementation, demonstrating how cluster-led, industry-aligned technologies can deliver scalable, sustainable, and impact-oriented solutions across energy, agriculture, healthcare, waste, and industrial systems, while strengthening India's transition toward a resilient, innovation-driven economy.

6. Strategic International Collaborations and Partnerships: Key Outcomes of the Conference

As a significant outcome of the Conference, twelve international Memoranda of Understanding (MoUs) and one national curriculum-aligned digital portal were formalised, reinforcing the role of S&T Clusters as platforms for structured international cooperation, technology co-development, and capacity building across priority domains.

Indo–Norwegian Collaboration (RICH – NICCI, Norway)

Partnership to advance clean energy, industrial decarbonisation, and sustainability, including facilitation of Norway-backed investments in solar and BESS projects for Indian C&I consumers and improved access for Indian start-ups to Nordic and EU funding mechanisms.

India–UK Skilling Partnership (RICH – NPTC Group of Colleges, Wales):

Collaboration on EV skilling and applied research, with commitments toward knowledge exchange programs and the establishment of a Centre of Excellence for workforce-ready EV training.

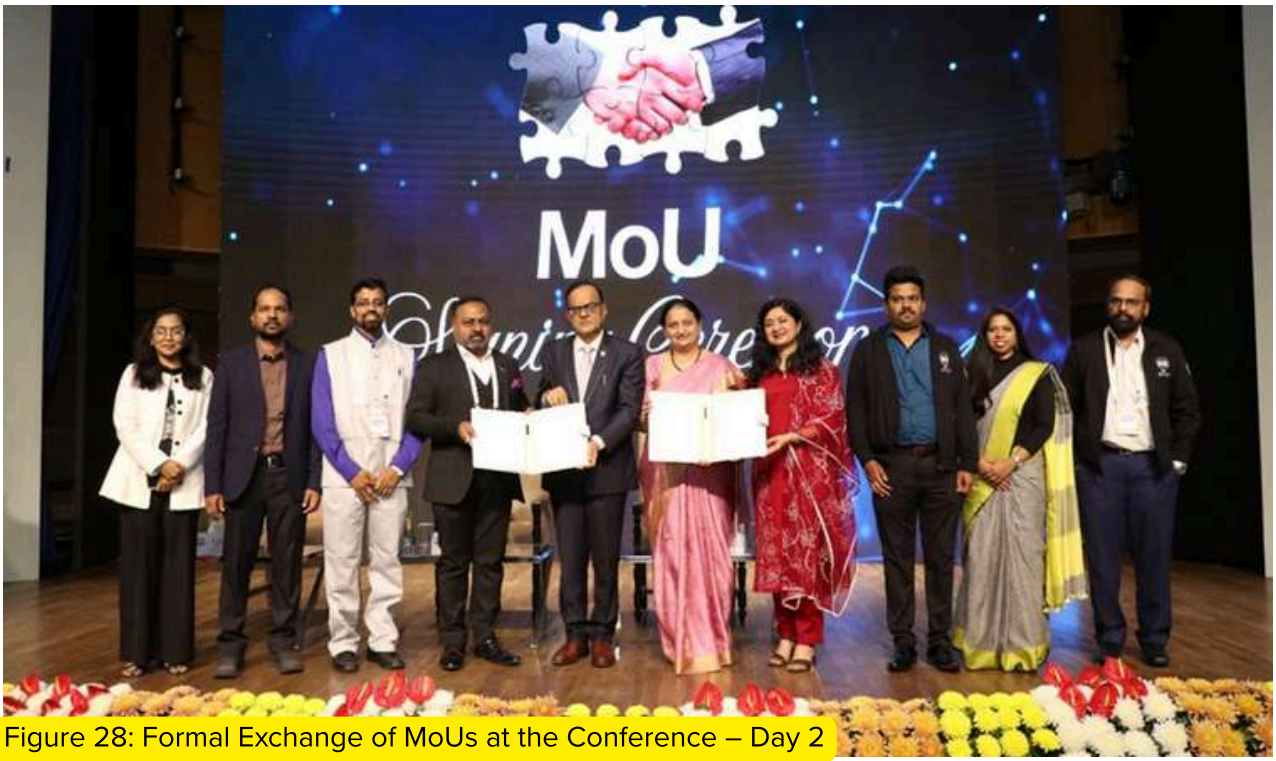


Figure 28: Formal Exchange of MoUs at the Conference – Day 2

MedTech Manufacturing Partnerships

- ***AMTZ – FBE Biomedical:*** Joint R&D and localisation of endoscopic systems, covering prototype-to-production pathways, workforce training, clinical validation, and global regulatory compliance.

- ***AMTZ – OIC Health:*** Collaboration in advanced manufacturing and metal additive manufacturing for patient-specific implants, including materials research, quality assurance frameworks, and technology exchange programs.

Figure 29: Formal Exchange of MoUs at the Conference – Day 2

Circular Economy and Livelihoods (JCKIC – Circular Economy Israel)

Partnership to co-develop S&T-enabled solutions for sustainable livelihoods, artisan empowerment, medical technologies, water conservation, and joint research, with circular economy principles embedded across interventions.

Figure 30: Formal Exchange of MoUs at the Conference – Day 2

Sustainable & Smart Mobility Partnerships (PI-RAHI & BeST – HL KLEMOVE (South Korea))

Inter-cluster collaboration to advance sustainable mobility, connected vehicle technologies, and green energy through applied research, pilot implementations, industry-linked internships, and technology transfer, aimed at scaling deployable mobility solutions across India.

Industry 4.0 and Advanced Technologies (PI-RAHI – INC Innovation Center, Germany)

Cooperation in Industry 4.0, artificial intelligence, circular economy, sustainable energy, and innovation management, strengthening global technology pipelines in North India.

Environmental and Infrastructure Partnerships

- ***DRIIV – BASF (Germany):*** Joint development of environmental sustainability solutions.
- ***DRIIV – WAPCOS:*** Collaboration on water, power, and infrastructure systems.

Figure 31: Formal Exchange of MoUs at the Conference – Day 2

Agri-Biotechnology Collaboration (BeST / ATGC Biotech – Luxembourg Industries, Israel)

Development and deployment of pheromone-based semio-chemical technologies for sustainable pest management.

Regional Development Partnership (BCKIC – Khasi Hills Autonomous District Council)

Integrated collaboration across healthcare, agriculture, renewable energy, and water solutions.

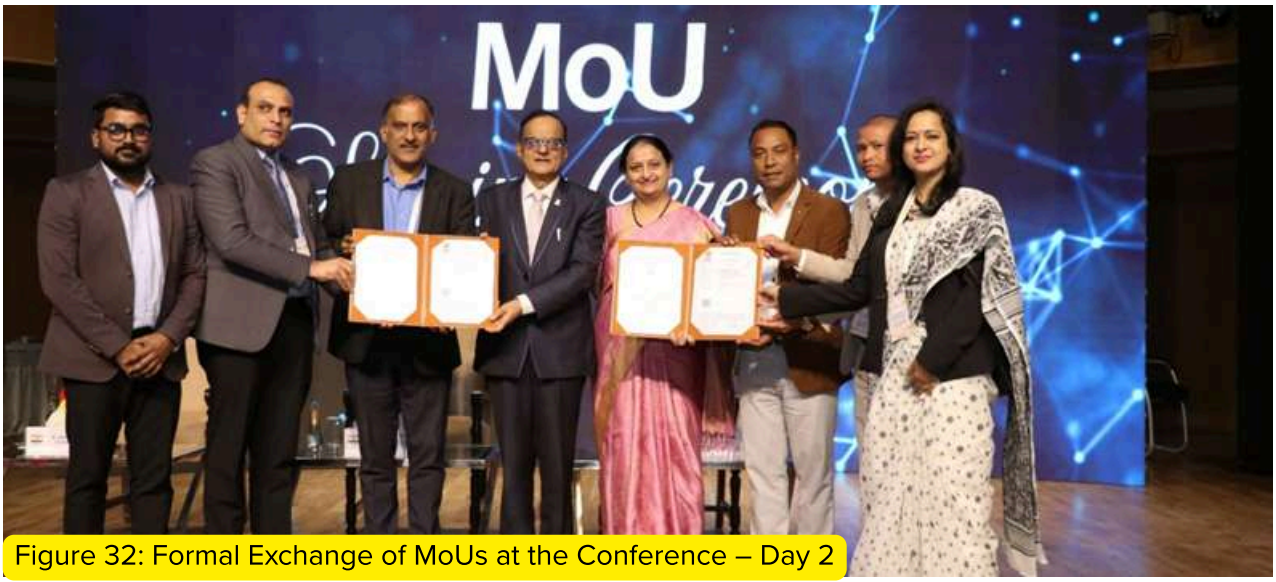


Figure 32: Formal Exchange of MoUs at the Conference – Day 2

National Knowledge Platform Launch (ChemAmaze)

Launch of a national, open-source, curriculum-aligned chemistry games repository aimed at enhancing experiential and accessible science education across schools in India.

Figure 33: Formal Exchange of MoUs at the Conference – Day 2

Collectively, these collaborations establish a robust international cooperation framework that advances technology co-development, translational research, skilling, and scalable deployment, reinforcing the Conference's objective of positioning S&T Clusters as engines of inclusive, sustainable, and globally connected innovation.

7. Conclusion and Way Forward

The “First International Conference on Science & Technology Clusters – Making Lives Easier through S&T” concluded with a strong reaffirmation of cluster-led innovation as a powerful and credible model for addressing complex global and national challenges through science, technology, and collaboration. The deliberations across thematic panels, technology showcases, and partnership dialogues highlighted that challenges spanning climate resilience, sustainable development, healthcare security, industrial transformation, and inclusive livelihoods demand integrated, cross-border, and multi-stakeholder S&T approaches. Collectively, they emphasised the need to move beyond siloed efforts towards coordinated and collaborative innovation frameworks.

Figure 34: Valedictory Session - Day 2

The Conference demonstrated the growing maturity of India’s S&T Clusters as regionally anchored yet globally connected platforms capable of translating scientific excellence into deployable, high-impact solutions. By bringing together academia, R&D institutions, start-ups, industry, government, and civil society within structured governance frameworks, the Clusters have proven their ability to accelerate research translation, de-risk innovation, and enable scalable deployment aligned with societal needs and market realities. The outcomes reinforced the role of clusters as trusted intermediaries that bridge policy intent with on-ground implementation, ensuring that innovation delivers measurable socio-economic and environmental value.

A defining outcome of the Conference was the formalisation of multiple international collaborations, reflecting strong global confidence in India’s innovation ecosystem and clear alignment with the cluster-based S&T model. These partnerships establish durable mechanisms for joint research, technology co-development, standards and regulatory convergence, skilling, and capacity building across the identified priority domains. Collectively, they signal a transition from dialogue-driven engagement to structured, outcome-oriented international cooperation anchored in co-creation, pilot-led validation, and shared implementation.

Looking ahead, the Conference outlined a forward-looking agenda focused on institutionalising global cluster-to-cluster networks, strengthening end-to-end translational pipelines through shared testbeds and living laboratories, and accelerating co-development and scale-up via consortium-led programmes and aligned public–private partnerships. Deliberations underscored the importance of policy and standards harmonisation to enable faster cross-border technology adoption, while embedding inclusion, sustainability, and resilience as core success metrics alongside technical readiness and commercial viability. In this context, PSA has articulated a clear mandate for the S&T Clusters to function as "National Technology Accelerators", driving rapid translation, deployment, and scale of high-impact technologies for societal and economic benefit.

This outcome document is intended to function as a strategic reference framework to inform and guide future action. By consolidating key insights, validated technologies, shared priorities, and implementable recommendations, it creates a common evidence base for policymakers, S&T Clusters, industry, and international partners to align investments, co-develop joint programs, and monitor progress in a systematic manner. More broadly, it offers a replicable model for sustained international engagement anchored in cluster-led innovation.

Figure 35: Delegations at the 1st International Science & Technology (S&T) Clusters Conference 2025, reflecting a globally connected innovation ecosystem.

In conclusion, the Conference positioned S&T as strategic instrument for inclusion, equity, and shared prosperity, while laying the foundation for a globally connected, implementation-driven S&T ecosystem. The collective outcomes are expected to stimulate sustained international collaboration and accelerate the deployment of climate-aligned and socially relevant technologies. Together, these efforts aim to ensure innovation delivers tangible societal benefits while enhancing resilience, competitiveness, and sustainability across regions.

ANNEXURE


Office of the Principal Scientific Adviser
to the Government of India
SCIENCE & TECHNOLOGY
CLUSTERS
INTERNATIONAL
S&T
CLUSTERS
CONFERENCE 2025
1st International
Science & Technology (S&T) Clusters
Conference
"Making Lives Easier Through S&T"
4-5 December 2025
(8:30 AM - 6:00 PM)
Dr. Ambedkar International
Centre (DAIC), New Delhi

1st International Science & Technology (S&T) Clusters Conference

"Making Lives Easier Through S&T"

4-5 December 2025
(8:30 AM - 6:00 PM)

Dr. Ambedkar International Centre (DAIC), New Delhi

Agenda : Day 1 (04/12/2025 - Thursday)

Registration and Networking Tea **8:30 AM - 9:30 AM**

Session	Format
1. *Inaugural session – 9:30 AM - 11:15 AM*	
9:30 AM – 9:40 AM	Welcome and Opening Remarks by **Dr. (Mrs.) Parvinder Maini**, Scientific Secretary, O/o PSA to the GoI
9:40 AM – 10:00 AM	Presentation on S&T Clusters by **Dr. Vishal Choudhary**, Scientist-F, O/o PSA to the GoI
10:00 AM – 10:10 AM	Keynote Address by **Prof. Ajay Kumar Sood**, Principal Scientific Adviser to the Government of India
10:10 AM – 10:15 AM	Release of Compendiums by **Hon'ble Chief Guest**
10:15 AM – 10:30 AM	Address by 'Chief Guest' – ***Dr. Jitendra Singh, Hon'ble Union Minister of State (Independent Charge) of the Ministry of Science and Technology; Hon'ble Minister of State in the Prime Minister's Office***
10:30 AM – 10:35 AM	***Inauguration of Exhibition by Chief Guest***
10:35 AM – 11:05 AM	Interaction with **Cluster CEOs** and Exploration of Exhibits and Technological Innovations
11:05 AM – 11:15 AM	Ceremonial Group Photo with the Chief Guest and Ambassadors

Tea Break 11:15 AM – 12:00 PM

Agenda : Day 1 (04/12/2025 - Thursday)

Panel Discussion – 1 : 'Smart Agriculture' *(Moderated by : BeST, Bangalore & RICH, Hyderabad)*

12:00 PM – 1:00 PM	*Context Setting by Cluster CEOs/ Chair*
	Intervention by – Australia (Prof. Mathew Morrell)
	Intervention by – Switzerland (Prof. Amritbir Riar)
	Intervention by – Italy (Dr. Marco Pacini)
	Intervention by – Germany (Ms. Anandi Iyer)
	Intervention by – Kenya (Prof. Jackson Kwanza)
	Intervention by – Spain (Dr. Luis Guasch Pereira)
	Address by Spain Ambassador (H.E. Juan Antonio March)

Audience Interaction 1:00 PM - 1:30 PM

Lunch 1:30 PM – 2:30 PM

Panel Discussion – 2 : 'Healthcare' *(Moderated by : AMTZ, Vizag and PKC, Pune)*

2:30 PM – 3:30 PM	*Context Setting by Cluster CEOs/ Chair*
	Intervention by – UK (Prof. Sir John Edmunds)
	Intervention by – Sweden (Ms. Geeny George)
	Intervention by – Australia (Ms. Caitlin Searle)
	Intervention by – Switzerland (Dr. Mary-Anne Hartley)
	Intervention by – Germany (Dr. Fabian Hecklau)
	Intervention by – France (Dr. Sylviane PIED)

Audience Interaction 3:30 PM - 4:00 PM

Tea Break 4:00 PM – 4:30 PM

Panel Discussion – 3 : 'Environmental Sustainability'
(Moderated by : BCKIC, Bhubaneshwar & DRIIV, New Delhi)

4:30 PM – 6:00 PM	*Context Setting by Cluster CEOs/ Chair*
	Address by Norway Ambassador (H.E. May-Elin Stener)
	Intervention by – Norway (Mr. Sonal Kumar)
	Intervention by – Denmark (Mr. Ben Jorgensen)
	Intervention by – Slovenia (Prof. Ilja Gasan Osojnik Črnivec)
	Intervention by – Switzerland (Prof. Manfred Max Bergman)
	Intervention by – Italy (Prof. Francesco Corvaro)
	Intervention by – Israel (Ms. Noa Amsalem)
	Intervention by – Netherlands (Mr. Jan Reint Smit)

Audience Interaction 6:00 PM - 6:30 PM

*Cocktail reception followed by dinner : **07:00 PM onwards** (Hotel Le Méridien, New Delhi)*

1st International Science & Technology (S&T) Clusters Conference

"Making Lives Easier Through S&T"

4-5 December 2025
(8:30 AM - 6:00 PM)

Dr. Ambedkar International Centre (DAIC), New Delhi

Agenda : Day 2 (05/12/2025 - Friday)

9:45 AM – 10:00 AM	*Summarizing Day-1 Activities by Mr. Vivek Kumar, Scientist-D, O/o PSA to the GoI*

Panel Discussion – 4 : 'Industry Automation & Startups'

(Moderated by : RICH, Hyderabad and AMTZ, Vizag)

10:00 AM – 11:00 AM	*Context Setting by Cluster CEOs/ Chair*
	Intervention by – Slovenia (Dr. Alenka Mauko Pranjić)
	Intervention by – Norway (Ms. Eirin Fossberg)
	Intervention by – Switzerland (Dr. Angela Honegger)
	Intervention by – Sweden (Mr. Ola Svedin)
	Intervention by – United Kingdom (Mr. Brendan O'Neill)
	Intervention by – Australia (Dr. Julianne Biddle)
	Intervention by – USA (Prof. Pratim Biswas)

Audience Interaction 11:00 AM - 11:30 AM

Tea Break 11:30 AM – 12:00 PM

Panel Discussion – 5: 'Plastic & E-Waste Management'

Moderated by : (PI-Rahi, Chandigarh & PKC, Pune)

12:00 PM – 1:00 PM	*Context Setting by Cluster CEOs/ Chair*
	Intervention by – Denmark (Dr. Søren Tranberg Hansen)
	Intervention by – Sweden (Ms. Cecilia Tall)
	Intervention by – Slovenia (Dr. Dragica Marinič)
	Intervention by – Spain (Ms. Ana L. Cudero)
	Intervention by – Netherlands (Mr. Jan Pieter Van Tilburg)
	Intervention by – EU (MSc D.Ing. Pierrick Fillon-Ashida)

Audience Interaction 1:00 PM - 1:30 PM

Lunch 1:30 PM – 2:30 PM

Agenda : Day 2 (05/12/2025 - Friday)

Panel Discussion – 6 : 'Technologies Empowering Livelihood'

(Moderated by : JCKIC, Jodhpur and BCKIC, Bhubaneshwar)

2:30 PM – 3:30 PM	*Context Setting by Cluster CEOs/ Chair*
	Intervention by – Italy (Prof. Anna Barbara)
	Intervention by – South Africa (Mr. Mashudubele Sedula Mamabolo)
	Intervention by – African Union (Dr. Brando Okolo)
	Intervention by – Germany (Dr. Johannes Barth)
	Intervention by – Denmark (Dr. Shannon Olsson)
	Intervention by – Japan (Mr. Masafumi Senda)
	Intervention by – Israel (Ms. Sharon Madel-Artzy)

Audience Interaction 3:30 PM - 4:00 PM

Tea Break 4:00 PM – 4:30 PM

VALEDICTORY SESSION

4:30 PM – 5:00 PM	*MoU Signing Ceremony*
5:00 PM – 5:05 PM	Remarks by **H.E. Mr. Herve Delphin,** Ambassador of EU to India
5:05 PM – 5:15 PM	Closing Remarks by **Dr. (Mrs.) Parvinder Maini,** Scientific Secretary, O/o PSA to the GoI
5:15 PM – 5:25 PM	Valedictory Address by **Prof. Ajay Kumar Sood,** Principal Scientific Adviser to the Government of India
5:25 PM – 5:30 PM	Vote of Thanks by **Dr. Shefali Uttam,** Technical Staff, O/o PSA to the GoI

Hon'ble Dignitaries

Prof. Ajay Kumar Sood

Hon'ble Principal Scientific Adviser to the GOI

Dr. (Mrs.) Parvinder Maini

Hon'ble Scientific Secretary,
O/o PSA to GOI

Prof. Sir John Edmunds

Chief Scientific Adv. &
Director R&E, FCDO, UK

Eminent Speakers

H.E. Juan Antonio March Pujolch
Ambassador of Spain to India

Prof. Mathew Morrell
Director - QAAFI, Univ. of Queensland, Australia

Prof. Amritbir Riar
Dy. Head, Int. Cooperation Dept., FiBL, Switzerland

Mr. Marco Pacini
Gen. Director, National Research Centre for Agri. Tech., Italy

Dr. Luis Guasch Pereira
Director, Spanish Centre of Plant Genetic Res. (CRF), INIA-CSIC

Ms. Anandi Iyer
Director, Fraunhofer Office India

Ms. Sharon Madel-Artzy
Founder & MD, Circular Economy Israel

Ms. Geeny George
Sr. Adviser, Science & Innovation, Embassy of Sweden

Ms. Caitlin Searle
Counsellor (S&T), Australian High Commission

Prof. Mary-Anne (Annie) Hartley
Director, LiGHT, EPFL, Switzerland

Dr. Fabian Hecklau
Hd., Competence Center Innov. Sys. & Struct., Fraunhofer IPK, Germany

Dr. Sylviane PIED
Scientific Attaché, Institut Français India

H.E. May-Elin Stener
HD. of Mission/Ambassador, Royal Norwegian Embassy

Mr. Jan Reint Smit
Counsellor, STI, Netherlands Embassy in India

Mr. Sonal Kumar
Programme Lead, CEEW

Ms. Noa Amsalem
Water Attaché, Embassy of Israel

Prof. Ilja Gasan Osojnik Črnivec
Dy. Head, Lab. for Demonstration of H2 & CO2 Tech., NIC, Slovenia

Mr. Ben Jorgensen
CPM, CLEAN; HoS, Int. Cleantech Network, Denmark

Prof. Manfred Max Bergman,
Prof. & Chair, Soc. Research & Method; Dir. STR, Univ. of Basel, Switzerland

Prof. Francesco Corvaro
Prof. & Italian Spl. Envoy for Climate Change, MAECI

Dr. Alenka Mauko Pranjić
Sr. Researcher - Developer & HOD (Materials), ZAG, Slovenia

Ms. Eirin Fossberg
CEO & Co-founder, Naya Development, Norway

Dr. Angela Honegger
CEO & Consul General, Swissnex India, Consulate General of Switzerland

Mr. Ola Svedin
CEO, OpenTech; CBO, Clusters of Sweden

Prof. Pratim Biswas
Dept. of Chemical, Env. & Materials Engg., Univ. of Miami, USA

Dr. Søren Tranberg Hansen
Sci. & Innov. Consul & Dy. Head Mission, Innovation Center Denmark

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Innov. & Sci. Counsellor, O/o S&I, Embassy of Sweden

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Member, Internationalization Committee (PTI SUS-PLAST), ICTP-CSIC, Spain

Mr. Jan Pieter van Tilburg
Co-founder & CCO, Nature's Principles, Netherlands

MSc D.Ing. Pierrick Fillon-Ashida
European Union Director General R&I, ASEAN

Prof. Anna Barbara
President, POLI.design; BoD Member, WDO; Prof., Politecnico di Milano, Itlay

Mr. Mashudubele Sedula Mamabolo
Public & Economic Diplomacy Offr., South African High Commission

Dr. Brando Okolo
Hd. & Sr. Advisor of S & T & Innovation, AUDA-NEPAD

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Director, BASF Innovation Campus Mumbai, BASF

Dr. Shannon Olsson
Founder & Glob. Dir., the echo net.; Spl. Sci. Envoy to India, Danish ATV

Prof. Jackson Kwanza
Dy. Vice Chancellor (RPE), JKUAT, Kenya

Mr. Brendan O'Neill
Advisor, Energy Systems Catapult, UK

Dr. Julianne Biddle
Partnerships Lead, Global Crop Diversity Trust, Australia

Mr. Masafumi Senda
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