India-Japan Science and Innovation Partnership: Highlights of Indian PM's Visit

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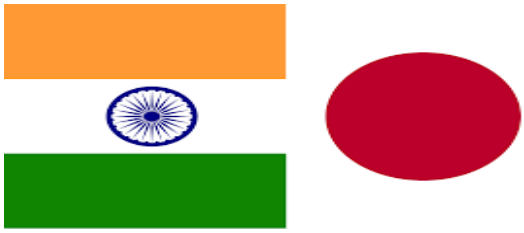

At a time when the world is entangled in several kinds of conflicts – be it military or diplomatic, economic, psychological, India and Japan have further cemented their strategic partnership, intensifying bilateral cooperation in various fields including science and technology. During the recent visit of the Hon'ble Prime Minister to Japan, the two countries initiated several new science cooperation programmes. These programmes focus on bilateral cooperation in space exploration, science and technology, digital technologies, environmental technologies, clean and sustainable energy.

(a) Space Exploration: Indian Space Research Organisation (ISRO) and Japanese Space Agency (JAXA) have been cooperating for a long time. Now, the two agencies have entered into a new cooperation on the Joint Lunar Polar Exploration Mission. The joint mission will feature a rover developed by JAXA and a lander by ISRO, aiming to explore the Moon's south polar region to locate and analyse water ice. It is expected to be completed by 2027-28.

(b) Digital & Emerging Technologies: India and Japan renewed the MoC on Digital Partnership 2.0 in 2025. Both countries have agreed to work together in development of digital public infrastructure, development of digital talent and joint R&D in futuristic technological fields such as AI, IoT, semiconductors as well as joint start-ups in these areas.

Also a new India - Japan AI Initiative is planned to be launched. It may be noted that already three India-Japan Joint laboratories are functional in IITs at Hyderabad, Delhi and Mumbai. It is also planned to advance collaboration in Large Language Models, training, capacity building and support for businesses and start-ups to foster a trustworthy AI ecosystem.

(c) Clean & Sustainable Energy: As a joint commitment for UN Sustainable Development Goals, both countries have agreed to strengthen energy cooperation under the India-Japan Clean Energy Partnership through the India-Japan Energy Dialogue; promoting a circular economy through cooperation on waste-to-energy technologies, waste segregation and recycling methods; and to promote research, investment and implementation of projects on hydrogen/ammonia and deepen collaboration on cutting-edge research and innovation for developing technologies.

(d) Science & Technology Research Cooperation: Several agencies from both sides, including Department of Science & Technology (DST), Department of Biotechnology (DBT), Department of Atomic Energy (DAE), Indian National Science Academy (INSA), Ministry of Earth Sciences (MoES) on the Indian side and Japan Science & Technology Agency (STA), Ministry of Education and Research (MEXT) and Japan Society for Promotion of Science (JSPS) on the Japanese side, have been working together for long. It has been agreed to further augment their programmes with greater intensity.

The focus is also on collaboration in fundamental research through the Indian Beamline at KEK, Tsukuba, as well as in areas such as fission and fusion technologies, quantum technologies, and high-performance computing for next-generation research tools. Other areas of cooperation include geriatric medicine, stem cell therapy, regenerative medicine, gene therapy, synthetic biology, cancer treatment, digital health, and automated diagnostic solutions. Additionally, efforts are being made to encourage startup collaboration in open innovation, social problem-solving, advanced technology, data utilization, incubation, and finance through the Japan-India Startup Support Initiative (JISSI). This includes linking innovation ecosystems and enabling startups to expand their businesses in both countries. An India-Japan fund will be created for this purpose.

(e) Environmental Technologies: Environmental protection and sustainable development are crucial for public health. So, both countries have decided to make effective reuse of wastewater and decentralised wastewater management, as well as to work on environmental preservation such as pollution control, climate change, waste management, as well as sustainable use of biodiversity.

A new MoC has been concluded to work together on Climate Change Mitigation. The most important aspect of this is to work on low-carbon technologies to achieve Net Zero by 2070. MoC will encourage the flow of investment, technology assistance, including technology transfer and capacity building support for the implementation of projects involving these low carbon technologies. It will also develop the domestic ecosystem and partnerships to localise low carbon technologies and associated high technology interventions related to equipment, machinery, products, systems and infrastructure, paving the way for their large-scale deployment.