

Science and Tech-driven Diplomacy

This editorial is based on <u>"India needs a holistic and effective 'techplomacy' strategy"</u> which was published in Hindustan Times on 19/09/2022. It talks about utilising technology as a credible foreign policy and diplomacy tool for India.

For Prelims: Multi-alignment, Cyber security, Intergovernmental Panel on Climate Change (IPCC), Science Technology and Innovation Policy (STIP) 2013, International Solar Alliance (ISA) 2015, Cyberwarfare, Bioweapons

For Mains: Current Status of Science and Tech-Driven Diplomacy in India, Challenges Before Science and Tech-Driven Diplomacy

In International Affairs, **diplomacy, economics and technology** are the most important tools for any nation. Historically, **Science and Technology** has been one of the main currencies for exchange and dialogue among human societies and sovereign nations.

In modern times, it is emerging as an important instrument of **techno-economic power** that will **shape the changing dynamics of international relations** and global affairs. Technologically adept nations are developing their own strategies to integrate technology with their foreign policy and diplomatic initiatives.

Science and Technology is a low-hanging fruit for India to employ in its soft power arsenal. Along with a <u>multi-aligned stand</u> on global geopolitics, the time is ripe for India to extend its science and tech ties in global geoeconomics in a more comprehensive and well-rounded manner.

How Science and Technological Diplomacy Can Shape Global Geopolitics?

- Science in Diplomacy: It means the scientific inputs going into diplomacy and foreign policy making.
 - Global challenges such as weapons of mass destruction, climate change, cyber security, human health, energy and environment, outer space etc., all require scientific inputs in order to understand and deal with them.
 - These challenges are trans-border and require application of science and technology in order to resolve them in addition to normal diplomatic efforts.
 - Example: Intergovernmental Panel on Climate Change (IPCC).
- Science for Diplomacy: It offers alternative channels of engagement among countries that may
 have political differences, thus playing an important role by influencing the dynamics of powerbalance between sovereign nations.
 - Scientific values of rationality, transparency and universality are the same the world over. S&T cooperation therefore provides a non-ideological environment for the participation and free exchange of ideas.

- Diplomacy for Science: It means making use of diplomacy to gain benefits in science and technology bilaterally as well as multilaterally.
 - It seeks to acquire science and technology knowledge to strengthen national economy and capacity and to participate more effectively in international discussions where science and technology are involved.

What is the Current Status of Science and Tech-Driven Diplomacy in India?

- The <u>Science, Technology and Innovation Policy (STIP) 2013</u> was one of the instances that an intersection of technology and diplomacy found a mention in an official government document.
 - The document states that the "policy framework will enable strategic partnerships and alliances with other nations through both bilateral and multilateral cooperation in science, technology and innovation.
 - Science diplomacy, technology synergy and technology acquisition models will be judiciously deployed based on strategic relationships.
- International Solar Alliance (ISA) 2015 was launched by India and France to boost solar energy in developing countries.
 - It is an association of 121 signatory countries which majorly are sunshine countries (countries lying between Tropic of Cancer and Tropic of Capricorn), and is an excellent example of modern-day science diplomacy.
- <u>Draft Science, Technology and Innovation Policy, 2020</u> discusses the role of **Science & Technology** in re-organising India's foreign policy priorities and shaping the global technology ecosystem.
- In **2020**, the Ministry of External Affairs (MEA) created technically specialised divisions, such as the cyber diplomacy division, e-governance and information technology division, and the new emerging and strategic technologies division.

What are the Major Challenges Before Science and Tech-Driven Diplomacy?

- Growing Risk of Weaponization of Outer Space: Given the advances in space technology, many areas of peaceful use of space are increasingly becoming double-edged and there is a growing risk of militarisation and weaponization of outer space.
 - Satellites that can be used for both civil and military purposes have led to the development of anti-satellite weapons **technology.**
 - Several countries, including the **United States, Russia, China, and India,** have already tested this.
 - Also, as we move from exploration of the Moon and Mars to exploitation, questions
 of mineral and other rights on extraterrestrial bodies are likely to surface.
- Rise of Cyber-Warfare and Cyber-Armies: Technology has changed the nature of warfare from visible large-scale military action and violence to subtle, invisible yet decisive cyberwarfare for crippling the enemy's information environment in a war-like situation.
 - Many countries around the world are maintaining military units that are specifically trained to operate in a cyberwarfare environment called cyber-armies.
- Threat of Bioweapons: With advances in <u>biotechnology</u>, microbiological agents (such as bacteria, viruses, or fungi) can be used as <u>biological weapon</u> to intentionally cause harm to humans, animals, or plants in case of conflict and war.
- Data Privacy Concern: Big data is often perceived as the black gold of the 21st century.
 - As the Internet allows for the aggregation and globalisation of markets and consumers, cross-border data flow is becoming a contested issue of <u>data privacy</u> and <u>global</u> governance.
- **Growing China's Influence:** The last two decades have seen the Chinese leapfrog in critical technology domains such as **quantum information** and the <u>electric vehicles</u> ecosystem.
 - Also, the Chinese state has been actively promoting and exporting its technology infrastructure beyond its borders, thereby increasing its sphere of influence.

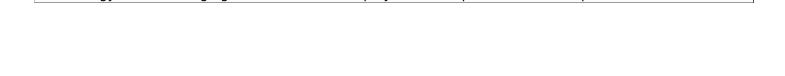
How India Can Harness the Potential of Science and Tech-driven Diplomacy?

Unifying World with Unified Payment System: The <u>Unified Payment Interface (UPI)</u> has

proved a tectonic shift in the payments system for India.

- An open and multilateral digital system of payments that has been developed in India can be pushed for adoption in different countries. This can serve as a perfect soft power opportunity.
- A key diplomatic win would be when India's existing digital payments system becomes a globally accepted standard. This is already underway, with four countries (Nepal, Bhutan, Singapore and UAE) having accepted and using India's payments system.
- Torchbearer in Public Health Space: In terms of global presence, India remains the world's largest supplier of generic medicines and drugs, accounting for 20% of the global demand. India has also been at the forefront of vaccine manufacturing and Vaccine diplomacy.
 - This has made India a torchbearer in the public health space forging new ties around.
 More incentive for Research and Development activities can improve India's soft power in terms of global health cooperation.
- Fostering Multilateralism: In the technology sphere, diplomacy is not about seeking entry into an exclusive alliance or club but about maximising a state's integration with the existing global value chains.
 - Promoting the growth of open source technologies (and built on open standards)
 which have very little entry barriers in the form of licences, can be a priority on the
 multilateral front. In this way, technology related diplomatic engagements will increase as
 well as improve India's accessibility to key technologies.
- Science Tourism: India can conceptualise science tourism promoting scientific locations around the nation like National Science Centre, Delhi and Birla Science Museum,
 Hyderabad that can be visited by the people across the globe to quench their thirst for knowledge in the various fields of science and technology.

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Technology is a low-hanging fruit for India to employ in its soft power arsenal. Explain.