

StarMUN 2025, ECOSOC:

<u>Research Report on the issue of</u> <u>Science, technology and innovation for</u> <u>development</u>

Key Terms

- *Artificial Intelligence (AI)*: A field of computer science aimed at building smart machines capable of performing tasks that typically require human intelligence.
- *Digital Divide*: The gap between individuals, households, and countries at different socioeconomic levels regarding their access to information and communication technologies.
- *Innovation Ecosystem*: Networks of institutions, individuals, and policies that foster the creation, diffusion, and application of new technologies.
- *Research and Development (R&D):* Activities that companies and governments undertake to innovate and introduce new products and services.
- *Sustainable Development Goals (SDGs):* A set of 17 global goals set by the United Nations General Assembly in 2015 for the year 2030, aimed at ending poverty, protecting the planet, and ensuring prosperity for all.

General Overview, Historical Context

Since the first Industrial Revolution, scientific discoveries and technological advancements have profoundly shaped societies, economies, and environments. From the invention of the steam engine to the rise of the Internet, each era of innovation has offered immense opportunities for development — while also posing challenges regarding inequality and environmental sustainability.

Recognizing the potential of science and technology for global progress, the United Nations has consistently emphasized their role, starting from the 1963 UN Conference on the Application of Science and Technology for the Benefit of Less Developed Areas. This commitment was further amplified with the creation of the Commission on Science and Technology for Development (CSTD) in 1992.

Root Causes for the Issue

- Unequal Access: Developing countries often lack the infrastructure and education systems necessary to benefit fully from technological innovation.
- Insufficient Investment: Many nations invest a minimal percentage of their GDP in R&D, limiting local innovation.
- Brain Drain: Skilled professionals frequently migrate from developing countries to developed ones for better opportunities.

• Ethical and Regulatory Challenges: Rapid technological growth often outpaces the development of appropriate regulations, leading to potential misuse.

Current Situation

In today's interconnected world, Science, Technology, and Innovation (STI) are integral to achieving sustainable development. Breakthroughs in fields like biotechnology, renewable energy, and digital technology have provided tools to fight poverty, disease, and environmental degradation.

However, the digital divide persists: approximately 2.6 billion people worldwide remain offline, mostly in developing regions. Furthermore, issues like cybersecurity threats, misinformation, and algorithmic bias present new challenges that require careful governance.

Timeline of Key Events

- 1963: UN Conference on the Application of Science and Technology for the Benefit of Less Developed Areas.
- 1992: Establishment of the UN Commission on Science and Technology for Development (CSTD).
- 2000: Adoption of the Millennium Development Goals (MDGs), highlighting the role of technology.
- 2015: Launch of the Sustainable Development Goals (SDGs), with explicit references to STI in goals such as SDG 9 ("Industry, Innovation, and Infrastructure").
- 2021: UN Secretary-General's "Our Common Agenda" report stresses the need for a Global Digital Compact.
- 2023: UN adopts the "Resolution on Science, Technology, and Innovation for Sustainable Development," calling for stronger global partnerships.

Major Parties Involved

Countries

- United States: Major global hub for R&D and innovation, heavily investing in emerging technologies such as AI and biotech.
- China: Significant strides in AI, 5G, and green technologies, positioning itself as a leader in tech-based development.
- India: Pioneer in affordable innovation, digital inclusion (e.g., Aadhaar system), and space exploration initiatives.
- Germany: Strong advocate for research-based sustainable development; leading programs like "Green Hydrogen Innovation."
- Kenya: An African leader in technological leapfrogging, especially in mobile banking (e.g., M-Pesa).

International Organizations

- UNESCO: Promotes science for peace, sustainable development, and poverty eradication.
- International Telecommunication Union (ITU): Works on expanding access to information and communication technologies worldwide.
- World Intellectual Property Organization (WIPO): Supports innovation through protection of intellectual property rights.

Possible Solutions

Bridging the Digital Divide

- Expand Infrastructure: Invest in broadband infrastructure in rural and underserved areas.
- Affordable Access: Support initiatives that provide low-cost internet and digital devices to marginalized communities.

Fostering Innovation in Developing Countries

- Local Innovation Hubs: Fund and support incubators and technology parks in the Global South.
- Capacity Building: Enhance education systems with a strong focus on STEM (Science, Technology, Engineering, and Mathematics).

International Cooperation and Partnerships

- Global Research Alliances: Foster collaborations between universities, companies, and governments across borders.
- Knowledge Sharing: Encourage open science and technology transfer between developed and developing nations.

Ethical Frameworks and Regulations

- Responsible Innovation: Develop international standards for emerging technologies like AI and biotechnology to ensure ethical use.
- Inclusive Policymaking: Involve diverse stakeholders, including marginalized communities, in decision-making processes around new technologies.

Further Reading

- United Nations Technology Facilitation Mechanism Reports
- UNESCO Science Report: Towards 2030
- World Bank: "World Development Report 2021 Data for Better Lives"
- UNCTAD: "Technology and Innovation Report 2023"
- International Telecommunication Union (ITU) publications

Conclusion

Science, technology, and innovation represent unparalleled opportunities for achieving sustainable and inclusive development. Yet without coordinated efforts to bridge divides and govern their application responsibly, these powerful tools risk deepening inequalities. With informed debate, innovative thinking, and collaborative action, delegates can help shape a future where STI truly serves humanity's shared goals.