The impact of rapid technological change on sustainable development

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AGENDA

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3. Transformative and disruptive potential
4. National strategies and policies
5. International Cooperation and Multistakeholder Partnerships
6. Directing rapid technological change to support sustainable development
7. Conclusion

The impact of rapid technological change on sustainable development
Requests... the **Commission on Science and Technology for Development**, through the Economic and Social Council, to give due consideration to the impact of key rapid technological changes on the achievement of the Sustainable Development Goals...

UN General Assembly Resolution 72/242
And UN General Assembly Resolution 73/17
Food Security
New tools for fighting hunger

- Genetic sequencing to detect soil quality
- Nanotechnology for improving crop preservation
- Detailed weather models with machine learning
- Precision agriculture using IoT and machine learning
- Early warning systems to predict food disruptions
- Genetic modification techniques for agricultural productivity
Healthcare

New waves of innovations to improve human and animal health

- AI-enabled personalized medicine
- Digitization and manipulation of biological processes
- Blockchain for public health crisis response
- CRISPR/Cas9 and related genome editing techniques
Renewable Energy
New technologies to address energy access and efficiency

Smart renewable energy generation
Maximizing use of renewables
Optimizing real-time power supply
Systems predictive monitoring
Other Sustainable Development Applications

Innovation, Social Inclusion, and Access to Education

- **Industry 4.0 and smart manufacturing for higher-wage industrial activities**
- **Mobile and blockchain technologies for social inclusion**
- **New digital learning platforms primary, secondary, and continuing education**
- **Remote sensing and AI disaster risk reduction and environmental efforts**
Transformative and Disruptive Potential

Rapid technological change also poses new challenges for policy makers and society:

- **Ambiguous impact on employment**
- **Potentially increasing divides**
- **Bioethical concerns**
- **Privacy, safety and security challenges**
- **Potentially biased and non-transparent algorithms**
National Policies and Strategies
Building and Managing Effective Innovation Systems

01 Strengthening National Innovation Systems
Cultivating capabilities, connections, and the enabling environment

02 Aligning with National Development Priorities and SDGs
STI policies are aligned with national development agenda and address society and environment.

03 Developing Technology-Specific Strategies
Industry 4.0, AI, Big Data, and related plans and strategies by national governments

04 Managing Disruptive Effects of Rapid Technological Change
Lifelong learning, strengthened social protection, and skills updating and upgrading initiatives.

05 Closing Digital Divides
Investing in soft and hard infrastructure for the digital economy and information society.
International and Multi-stakeholder Cooperation
Leveraging international networks and partnerships to advance the SDGs

Global research collaboration can advance S&T for the SDGs
Combining advanced S&T capabilities with detailed local knowledge
Influencing global research networks to work on SDG-relevant areas

Multi-stakeholder initiatives for advocacy and collaborative R&D
Raising awareness about gender digital divides
Collaborative R&D with leading tech companies and domestic S&T talent
Directing rapid technological change to support the SDGs

➢ Facilitate **global technology assessment and foresight** exercises on technological trends of broad interest

➢ Develop an **inclusive discourse on the normative dimension of rapid technological change**
Thank you!

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