

Technology and innovation for cleaner and more productive and competitive production

Initial remarks

Excellencies, Distinguished Delegates, Ladies and Gentlemen,

I am honoured to present the Report of the Secretary-General under this agenda item.

We received valuable contributions from twenty-four member States and international organizations. We reflected them in the Secretary General's report, and full case studies are available on the CSTD website.

Introduction

The report notes that we live in a time of rapid technological change as we are going through the digital transformation and the Industry 4.0 revolution. At the same time, the threat posed by climate change calls for the development of technologies that enable cleaner and more efficient production, the so-called "green technologies".

These technological waves offer opportunities for developing countries to catch up technologically and narrow global divides.

Against this backdrop, the Report of the Secretary-General analyses how countries can take advantage of these green technologies and innovations to promote sustainable development. In particular, the report examines the role of national policies and how the international community can contribute to this process.

Green Technology

Innovation is a key driver of economic growth, and science and technology create the basis for innovation. At the same time, we need to find a pathway to combine growth with climate change mitigation.

Green innovations are one way of achieving this dual goal. They are usually associated with renewable energy technologies but also include the strategic use of traditional and new digital technologies like blockchain, artificial intelligence and the Internet of Things.

Catch-up and GWOs

Latecomer catch-up strategies in green industries involve three key components: (1) green windows of opportunities, (2) sectoral systems, and (3) catch-up trajectories:

Green windows of opportunity are favourable but time-bounded conditions for latecomer development created by green technological innovations and changes in market demand for greener products or government regulation and policy interventions.

But taking advantage of these windows of opportunity is not automatic. It depends on the sectoral systems – the existing production, technological and innovative capabilities of firms and the strategies undertaken by the relevant public and private actors to turn opportunities into reality.

And catch-up trajectories originate from the interactions of green windows of opportunity with preconditions and responses in the sectoral systems, and they could include market and technological catch-up.

The report examines green windows of opportunities for developing countries through three main channels:

- 1) the production of renewable energy technologies, such as Solar PV and Green Hydrogen,
- 2) the application of frontier technologies such as AI and IoT to greener global value chains, and
- 3) the diversification of economies towards sectors with lower carbon footprints.

National policies are crucial to create incentives for producing renewable energy technologies. In particular, market creation is a key element, where government-led demand is critical considering the limited tradability of many green energy products. Additionally, policies incentivizing trade increase opportunities for technological learning in these sectors, while governments can also induce technical change through public research and development programmes.

Concerning the greening of traditional value chains, this process has three main drivers: (a) new patterns of demand preferences and consumer behaviours, (b) new green strategies by lead firms and global buyers and (c) enforcement of environmental standards across global supply bases.

As for the diversification towards more sustainable sectors, there is a need for a strategic diversification approach, where potential new sectors are identified based on their level of complexity, relatedness with the existing productive structure, existing global demand, and the associated impact on carbon emissions.

The support by the United Nation Systems

The United Nations system has been strengthening the capacity of member states to seize green windows of opportunity through multiple measures, which encompass the following dimensions:

- First, the provision of technical and financial support. For example, the Global Environment Facility has allocated more than \$22 billion in grants and blended finance and mobilized \$120 billion in co-financing since its establishment.
- Second, sharing knowledge and information and conducting joint research, for example, through the Global Alliance on Circular Economy and Resource Efficiency.
- Third, helping design policies and strategies. UNCTAD and UNIDO play an important role in this regard, assisting countries in matters related to their mandate.
- And fourth, helping to set norms and standards, as this can facilitate technology transfer and deployment.

National policies

Governments in developing countries are encouraged to be proactive to foster the necessary technological capabilities and absorptive capacity needed to leverage emerging technology and innovation, and seize these green windows of opportunity.

In this regard, the Report highlights five policy areas:

- First, governments must enact the required policies, legislative framework, and regulations while maintaining coherence between them
 - The coordination requires mechanisms like councils to ensure information exchange between ministries and with other stakeholders.
- Second, strengthen technical and innovation capacity and build knowledge to accumulate production and innovation capabilities.

- Initiatives for that include subsidies programmes such as the one implemented by the Swiss Federal Office of Energy, or centres for promotion of R&D like the Innovation Park Muscat in Oman, or support to programmes promoting green technologies from R&D to commercialisation such as those being implemented in Türkiye, or programmes like the Chinese “Thousand Talents Programme” that strengthens the accumulation of necessary skills.
- Third, identify, prioritize and foster green technologies and potential new sectors for sustainable diversification and structural transformation.
 - This requires an assessment of green technologies and analytical methods to identify possible diversification paths towards more complex sectors. To foster the development of such sectors, governments can apply targeted policy instruments such as clusters, smart specialization initiatives, pilot and demonstration projects, and technology roadmaps, like the Green Tech Valley in Austria. Financial support to new sectors is equally important
- Fourth, it is necessary to invest in green innovation and reduce financial constraints, and the report highlights the need for financing for SMEs. There are multiple examples in the report, such as the support to SMEs included in the Economic Reconstruction and Recovery Plan in South Africa.
- And fifth, developing a digital infrastructure, which is a precondition for promoting the adoption and adaptation of Industry 4.0 technologies and their use to make value chains greener. For that, there must be the mobilization of public and private investments in ICT infrastructure, providing the appropriate regulatory investment for the telecommunication sector and avoiding connectivity gaps between firms and regions in the country.

International cooperation

Notwithstanding the importance of national policies, developing countries need strong support from developed countries to advance innovations and tackle global challenges. Therefore, the Report also highlights six areas that demand international cooperation for green innovation:

- First, the promotion of sustainability-oriented innovation systems in developing countries;

- Second, facilitating the access and adoption of developing countries to sustainable technologies.
- Third, adopting a more partnership-oriented approach to green technology development, shifting research for green innovations from the national to the multilateral levels.
- Fourth, adopting multilateral approaches to technology assessment;
- Fifth, supporting South-south STI cooperation for green innovation, giving incentives to overcome cooperation barriers.
- And sixth, providing development assistance to support science, technology, and innovation for green innovations.

Conclusion

Ladies and gentlemen,

In conclusion, the Secretary General calls for a push for diversification and increasing manufacturing competency in developing countries while ensuring the sustainability of the development process.

This means that national governments and the international community have a role to play, including the Commission, which can take three steps to favour the sustainable development of developing countries.

- First, the Commission can facilitate the recognition of success stories and business cases.
- Second, it can facilitate international partnerships to mobilize resources and provide technical assistance on effective policy mix.
- Lastly, the Commission can support the participation of actors of innovation systems of member states in international networks and programmes, which enhances their innovative capabilities.

Thank you.