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**The role of science, technology and innovation in a sustainable and resilient
recovery from the COVID-19 pandemic**

Statement submitted by

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CSTD Annual Session 17 May 2021

**High-level round table on the role of science, technology, and
innovation in a sustainable and resilient recovery from the
COVID-19 pandemic**

**Speech for Honourable Dr. Douglas Letsholathebe,
Minister of Tertiary Education, Research, Science and
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Acting Secretary-General of UNCTAD, Ms. Isabelle Durant,

Excellencies,

Ladies and gentlemen,

Chair, CSTD

The pandemic and multiple crises

Mr Chair, let me start by appreciating the opportunity you have granted me to contribute to the discussion on the role of science, technology, and innovation in a sustainable and resilient recovery from the COVID-19 pandemic. The COVID-19 pandemic has sparked a global health crisis. This has compounded other crises that have been building over recent decades, including an accelerating climate change crisis and continued high levels of economic and social inequalities reaching crisis proportions across the world. Botswana has not been spared. Neither has the rest of Africa, nor the rest of the developing world. The recovery from COVID-19 will present huge

challenges for everyone, especially the developing world, where fiscal space is lower, health systems are weaker and social systems are less able to offer support for the sick, those who have become unemployed, businesses that have been forced to temporarily close or facing dramatically reduced business.

The need for global solidarity and international cooperation is greater than ever. But so far the international community is failing to respond adequately. The prospects for meeting the SDGs by 2030 are less evident now than just two years ago. What role should STI play in recovery?

The role of STI

Mr Chair, STI is playing a central role. Scientific collaboration has been accelerated and scaled up in an exemplary way to develop the vaccines and other medical treatments that offer our best hope of defeating the pandemic. The outstanding scientific collaboration behind these efforts must be replicated more widely to claw back progress in fighting the multiple crises we face and recovering from COVID-19. The vaccines illustrate the power of fully harnessing STI to benefit all of humanity. International R&D created practical knowledge that was quickly put into use to create new to the world drugs that are meeting an urgent need that is absolutely inclusive in nature. People everywhere need the vaccine and treatments for Covid.

However, the pandemic also highlights the large inequalities across the globe. R&D networks for developing vaccines and treatments were dominated by researchers and firms located in high income countries with the strongest R&D capacity. On the manufacturing side, capacity to

manufacture innovative drugs and treatments has proved woefully inadequate in Least Developed Countries (LDCs), and most other developing countries as well. This lack of productive capacity is having a huge detrimental impact in Africa. Most African countries have been unable to produce the medicines the continent needs to speed its health recovery. Access to the new technologies of m-RNA, and the productive capacity to use them to manufacture the vaccines does not currently exist in most developing countries. The knowledge and technologies must be quickly and widely diffused as an urgent priority. In this case technological and innovation capacity, and manufacturing capacity, are dramatically a life and death matter. The lack of local capacity, and inadequate international access, hurts Africa, and it hurts the developing world. But the results will ultimately hurt everyone, as the virus circulates and mutates, creating new waves of infection. This is not the type of inclusive approach that aids humanity. What we need is the widespread upgrading of STI capacity across the developing world that will promote global development and benefit all of mankind.

Local action and international collaboration must work together

Chair, your Excellencies, what could create this idealized type of win-win scenario globally? We need to see continued, indeed strengthened efforts at the national level in LDCs, low-income and middle-income developing countries to build R&D, technological and innovation capacity. These domestic efforts should be supported by an acceleration in international cooperation and partnerships on STI at the sub-regional, regional and multilateral levels. This was always what was needed to meet the SDGs. The pandemic has shown how globally interdependent the world is, and how

extreme inequalities in STI capacity and productive capacity across countries and regions is dangerous for everyone.

UNCTADs Technology and Innovation Report 2021 has useful lessons

Mr Chair, the findings of UNCTAD's Technology and Innovation Report shed light on how the world can steer the course of technological change in a manner that benefits all people across our planet. I was present at the launch of the TIR-2021 in March of this year. The report looks at a group of frontier technologies at the heart of the current wave of rapid technological change that we commonly refer to as the newest technology revolution, the fourth industrial revolution (4ir), also known as Industry 4.0. Most of the technologies covered are digital technologies, or in the case of non-digital technologies - such as gene editing, nanotechnology and solar PV - are in part digitally enabled.

Your Excellencies, ladies and gentlemen, new technological waves created by frontier technologies and Industry 4.0 offer many advantages for sustainable development. We support the notion that developing countries, and whole continents such as Africa, cannot afford to miss this revolution as we have missed others in the past. As the Report underlines, this is a large part of the explanation of the inequality that we see today between our countries and the most advanced regions of the world.

But this window of opportunity for developing countries to accelerate economic growth is challenged by the risk that technological revolutions

could also widen technological gaps between countries, making it even more difficult for less-industrialized countries to catch up, diversify their economies and create more jobs. These are pressing challenges that Africa is facing.

Africa needs to be ready for the introduction of frontier technologies

Ladies and gentlemen, the TIR-2021's frontier technology readiness index assesses national capabilities to equitably use, adopt and adapt these technologies this report has developed. Most of the least-ready countries are in sub-Saharan Africa, and in the developing world more broadly.

Botswana ranked at 111th place on the frontier technology readiness index – the second highest for a landlocked developing country in Africa and 9th place for Sub-Saharan Africa. Although this positioning places Botswana among the stronger performers in Africa, we still face many challenges.

Countries like Botswana and others in Africa will need to prepare the groundwork for the introduction of frontier technologies in their industries and societies, to be able to benefit from them and manage the risks they will bring. Recent international evidence suggests that the firms that adopt these technologies may be more productive than other firms, which may be at a competitive disadvantage. This has implications for all countries, including those in Africa. These technologies will inevitably diffuse across firms, sectors, communities and countries, as with other technologies. While we need to be ready to adopt these frontier technologies, we must at the same time continue our efforts to scale up and master existing technologies, and to take fuller advantage of our indigenous knowledge.

African countries will face challenges to benefit fully from frontier technologies. Many of the frontier technologies are directly dependent on a modern and efficient ICT, and more specifically, digital infrastructure, as well as affordable and fast internet services. UNCTAD's Digital Economy Report 2019 indicated that only 1.3% of the value of the world's digital platforms are currently in Africa. We need to overcome energy insecurity in the continent. And while we have made progress in improving ICT infrastructure and internet access, and partly overcome traditional digital divides, new divides may soon be on the horizon.

Mr Chair, indeed, many frontier technologies require large amounts of data and data capacity, meaning that basic connectivity is not enough for success in harnessing these technologies. Making high-speed internet access widely available at affordable prices is increasingly important to run a modern economy and build strong productive capacity. But this is a challenge for most African countries. In some African countries, ensuring reliable electricity and basic connectivity remain a challenge. This is the case for many developing countries in other regions as well. Botswana faces these challenges, being a geographically large country with a small population makes infrastructure build out expensive. These technology gaps can still create structural inequalities across countries as well as within countries along various dimensions such as rural versus urban, richer versus poorer.

Botswana's development challenges

Your Excellencies, ladies and gentlemen, the challenges go well beyond securing access to technologies and developing the physical and information

infrastructure. In Botswana they include upgrading the skills base and quickly modernizing the education and training system, building R&D capacity and coordinating R&D efforts to focus more on priority areas, building absorptive capacity in SMEs and promoting diffusion of technologies, developing a stronger private sector to spearhead stronger productive capacity and innovation capacity, creating new and improved goods and services for export and domestic use through innovation, establishing higher value added activities and manufacturing, achieving progress in economic diversification, creating new and decent jobs that benefit youth, women and marginalized groups, and ultimately achieving structural transformation of the economy in a sustainable manner. Other countries in Africa face similar challenges.

What we are doing in Botswana

Mr Chair, in Botswana we are facing up to these challenges. We have established emergency Covid-19 recovery programs to address the immediate health crisis, and offset the immediate economic crisis it has created through dramatic reductions in economic activity and lower Government revenues. We are supporting the people and firms in greatest immediate need. Most countries have been forced to put in place these types of immediate support and recovery measures. We have looked at the implications of the pandemic for our current national development plan. We have also designed and are now implementing an Economic Recovery and Transformation Plan.

Beyond the short-term crisis measures, we are aiming to build back better during the recovery, by pursuing national transformation initiatives during and after the recovery. A key goal is to transform from a natural resource based to a knowledge based-economy. Transformation should help us build back more sustainably and with greater resilience for the future. STI has a key role to play in our national transformation process. We are continuing with ongoing efforts to build the infrastructure - including those for energy, the ICT/digital infrastructure and the R&D infrastructure, develop human capital and STEM skills, deepen the R&D base and strengthen R&D management and coordination, improve indicators for STI, promote digitalization of the country, support technology adoption and development, strengthen engagement with the private sector, promote innovation, and pursue international STI collaboration and partnerships, among other activities. We are also beginning to investigate the issue of the introduction of frontier technologies in Botswana, and how they can be used in creating new goods and services, and new industries, and how they can be used in existing, more traditional industries.

We are identifying the gaps that we face in the STI system, and will design strategies and measures to address the gaps and improve national R&D, technological and innovation capacity. We have been doing this for over two decades now. We developed our first Research, Science, Technology and Innovation Policy in 1998, which we revised in 2011. We are currently collaborating with UNCTAD in undertaking an STI Policy Review for Botswana to provide a neutral assessment of our STI system and our current 2011 RSTI policy. The review started after the pandemic, and we are doing it

despite the pandemic, which continues to plague our sub-region. The pandemic means that travel is not possible and the review process must be done through virtual means. Undertaking the review virtually is an innovation in itself. We hope that this review will help us in improving our response to recover from the COVID-19 crisis in a more sustainable and resilient way.

CSTD discussions

Chair, we are interested to hear the experiences of other countries that have undergone national assessments. We hope that the presentation of such assessments at the CSTD can provide an opportunity for policy learning on STI. We also look forward to hearing the perspectives of other countries regarding the role of STI in a sustainable and resilient recovery from COVID-19.

Concluding remarks

I would like to conclude by making a call for greater international collaboration on STI across countries and organizations. We should work together to ensure that STI capacity improves across the globe, and in particular support the building of STI capacity in countries and regions where the gaps in capacity are the largest. I believe that we can all agree that harnessing STI will be essential for all countries to make progress in achieving the Sustainable Development Goals (SDGs). Going back to business as usual will not help us to recover from the COVID-19 pandemic in a sustainable and resilient way.

I commend UNCTAD on its ongoing support to developing countries on STI policy. I would also like to recognize the Technology and Innovation Report

2021 as a timely, relevant and objective discussion on how developing countries can catch the technological waves to support sustainable development efforts, and navigate through the storm of change that rapid technological change may create in our societies and economies.

I look forward to a fruitful discussion and exchange of experiences and perspectives during this CSTD session. Thank you.