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Industry 4.0 for inclusive development

Statement submitted by

H. E. Mr. Felix Mutati
Minister of Technology and Science
Zambia

REPUBLIC OF ZAMBIA

MINISTRY OF TECHNOLOGY AND SCIENCE

HONOURABLE FELIX C. MUTATI, MP.
MINISTER OF TECHNOLOGY AND SCIENCE,

TALKING NOTE

High-Level Panel of Ministerial Discussion on
Industry 4.0 for inclusive Development

During the 25th Annual Session of the Commission for Science and Technology for Development (CSTD) of the United Nations Conference for Trade and Development (UNCTAD)

to be held through Virtual videoconference on,
Tuesday, 29th April, 2022,
time: 14:30 – 16:30 hours

LUSAKA

THE NEW TECHNOLOGICAL WAVE OF INDUSTRY 4.0

- I am very pleased to take part and address this High-level panel on Industry 4.0 for inclusive development.
- Zambia's long term focus is embedded in the "Vision 2030" whose aim is to attain the status of "a prosperous middle income country by 2030". Within Zambia's Vision 2030, the sector vision for Science, Technology and Innovation, of which I superintend over, states that Zambia should be "A nation in which science, technology and innovation are the driving forces in national development and competes globally by 2030".
- As highlighted in the Report of the Secretary General, we live at the beginning of a new technological revolution around Industry 4.0 technologies such as artificial intelligence (AI), robotics, and the Internet of Things (IoT).
- Industry 4.0 have large potential to improve productivity, energy efficiency, promote sustainability and change the structure of national economies in the long term. On the other hand, Industry 4.0 also have the potential to increase inequalities, but only if we don't implement the right strategies and policies.
- Any technological breakthrough increases the gap between the more and the less advanced. Developed countries enjoy an advantage in Industry 4.0 because of better infrastructure and skilled workforce. However, most firms in developing countries use only basic digital technologies such as email and social media.
- But at the same time, new technological waves increase the opportunities in developing countries for catching up. Some Industry 4.0 technologies like 3D printing create new opportunities for innovation.
- Providing the right kind of infrastructure for connectivity is key, as well as enhancing digital skills and competencies. This

includes technical skills but also generic and complementary skills. Capacities are normally learnt on the job, so the right ecosystem of companies is required to make sustainable progress.

- It is important to remember that Industry 4.0 is not all about startups and new sectors but also about introducing new technological solutions in old industries. All sectors can benefit from these technologies: from smart irrigation systems in Agriculture to big data applications in retailing.
- As highlighted in the Technology and Innovation Report 2021, developing countries cannot afford to miss this new wave of technological change. The risk is that the uneven deployment of Industry 4.0 will perpetuate the income gaps across countries seen in previous technological revolutions.

AFRICAN CONTEXT

How African countries stand in relation to the opportunities to harness Industry 4.0?

- As you know, we still have many challenges in Africa, when compared with developed economies. Most countries in Sub-Saharan Africa are less economically diversified, have a growing and younger population, more people living in extreme poverty, larger shares of rural households, several gaps in infrastructure, including electricity and ICT, lower public and private capacity for domestic resource mobilization, and lower productive capacities.
- However, many of these characteristics could turn into opportunities depending on the policies adopted to harness the new technologies and reduce their risks. For example, poor infrastructure could result in more opportunities for leapfrogging under an appropriate set of rules and incentives.
- A larger and younger population has the potential for setting new patterns of demand and drive innovation if given a chance for building digital skills. And we can work together in the region to capitalize on the African Continental Free Trade

Area (AfCFTA) to diversify our economies through regional value chains and also through using the region as a training ground for diversification towards new and more technologically-oriented production

- The technological gap seen today between more advanced economies and many African countries is not destiny. We can change this picture if we strategically diversify our economies and at the same time promote digital transformation in our production sectors.
- This transformation has to go beyond e-commerce and mobile money. Although important, they touch mainly on the demand side of our economies and we have to promote digital and technological upgrade in the whole production base, while at the same time expanding that base with new products and services.

WHAT ZAMBIA IS DOING

- The Goal for new Government, the New Dawn Government of His Excellency the President of the Republic of Zambia, Mr. Hakainde Hichilema, is to transform Zambia into a Nation in which Digital Transformation, Science, Technology and Innovation are the driving force for competitiveness and wealth creation.
- The guiding principles are inclusiveness, transparency and accountability, equality and non-discrimination, partnerships, sustainability and efficiency and effectiveness.
- Zambia 2020 National STI Policy is well placed to help the nation to harness **Industry 4.0**. Two of the STI Policy's objectives are (i) to strengthen the commercialization, transfer and diffusion of technologies; and (ii) to improve investment and funding to STI.
- Regarding the funding of STI, our National Policy outlines several measures including:
  a. Increase Grant Research Financing by Local and International Sources;

b. Provide incentives to stimulate investments in research by the private sector and industry;
c. Increase allocation for R&D to a minimum of 1% of GDP;
d. Acquire appropriate equipment and infrastructure for STI;
e. Facilitate the construction and equipping of R&D facilities;
f. Facilitate the rehabilitation and equipping R&D and Innovation facilities;
g. Establish centers of excellence for scientific and technological research.

- We plan to re-profile science and industrial research as a driver of technological change in our economy. We need to do better in converting the capabilities into solutions.
- One of our priorities is to have a graduate-propelled innovation hub where graduates from institutions can transform their academic ideas into industrial solutions. Human capabilities and intellect are abundant but what has been missing is translating this into output.
- The Government will implement policy measures and a legal framework to create the conditions for Zambian scientists and technologists to transform Zambia's technological landscape. Low hanging fruits and quick wins are expected in certain sectors such as ICTs and FinTech.
- A key transformative process would be the technological upgrading of the mining sector, including the implementation of Industry 4.0 technologies. Given the decreasing concertation of copper in its ores, such an upgrade is needed to maintain both industry performance and the collection of public revenues.
- As recommended in the Science, Technology and Innovation Policy Review of Zambia recently conducted by UNCTAD, a Zambia Innovation Agency may be an interesting proposition. It could support all forms of innovative projects emerging from start-ups or established firms, from rural communities, from university/ business cooperation.

INTERNATIONAL COOPERATION

- Globally, all countries need a science, technology and innovation policy appropriate to its stage of development to prepare people and firms for this period of rapid technological change.
- It is envisaged that Zambia's 2020 STI Policy will catalyze and serve the aspirations of the country. The recommendations of the UNCTAD STI Policy Review would help to bring into focus several key STI challenges.
- Zambia will need to forge and strengthen partnerships and international collaboration to facilitate economic diversification and technology dissemination and adoption by manufacturing firms in our countries.
- In this regard, I support the recommendations listed in the Report of the Secretary General and, in particular, the call for the international community to help our governments to design and implement national policies, strategies and programmes related to industry 4.0, and support developing countries in designing and implementing pilot programmes and initiatives to apply industry 4.0 technologies in priority sectors.
- **I THANK YOU**