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ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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Contribution by ESCWA

to the CSTD 2020-2021 priority theme on “Using science, technology and innovation to close the gap on Sustainable Development Goal 3 on good health and well-being”

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PRIORITY THEME 2: Using science, technology and innovation to close the gap on SDG 3, good health and well-being

United Nations Commission on Science and Technology for Development (CSTD)

Dear international organization/UN entity/agency,

The CSTD 23rd annual session selected “Using science, technology and innovation to close the gap on SDG 3, good health and well-being” as one of the priority themes for its 24th session (2020-21 period).

Science, technology, and innovation (STI) can play an important role in strengthening the capacity of all countries, in particular developing countries for early warning, risk reduction and management of national and global health risks as described in SDG 3D. Data science, biomedical science and engineering and other technologies can broadly transform health and medicine and specifically support countries and regions in their responses to emerging health crises as well as in their preparedness for future threats. Beyond specific technological innovations, STI policy advice, diplomacy, and international cooperation also play a prominent role in current and future infectious disease preparedness and response. The theme will explore experiences about using STI to strengthen health outcomes as well as approaches to regional and global STI cooperation in this field.

The CSTD secretariat is in the process of drafting an issues paper on the theme to be presented at the CSTD inter-sessional panel meeting. In this context, we would like to solicit inputs from international organizations, UN entities and agencies on this theme. We would be grateful if you could kindly answer the following questions based on your organization’s work at the global level.

1. Can you give examples of international projects/policies aimed at using science, technology, and innovation for early warning, risk reduction and management of national risks? What are the main challenges confronted while trying to implement these projects/policies?

Unfortunately, health is not one of the mandates of ESCWA. This is with the exception of work on the People with Disabilities file. Therefore, the below is our response to this question in relations to what other organizations do:

The UNESCO STI Policy reflects a global initiative to harness science, technology and innovation in a wide spectrum of domains. Namely, UNESCO assists its Member States in formulating their STI policies, strategies and plans as well as in the reform of their science systems.

This is done by means of the provision of guidelines and methodologies, technical advice and guidance on formulation, implementation and monitoring, together with a review of policies and plans concerning national S&T activities to provide early warning and risk mitigation or reduction.

2. Could you share specific examples, projects or initiatives that have used frontier technologies (e.g., AI, drones, blockchain, 3D printing, etc.) or other forms of innovation in general in addressing the Covid-19 pandemic?

The COVID-19 pandemic has caused unprecedented changes and disturbances in the economic, health and social fields, both at individual and societal levels. At the same time, it provided context for frontier technologies to address the pressing challenges. In like manner, the Corona pandemic has paved the way for “blockchain” technologies to prove its usefulness in improving the transparency between integrated networks. Such links between data platforms and systems organized shipment of medicines to areas suffering from an outbreak of the virus, contributes to the continuation of the economy, facilitates the management of cash flow for emerging companies, guarantees payment of installments for their products and helps consumers to track Movement of their requests until it reaches them.

Furthermore, the Corona pandemic has put double pressure on the health care system in most countries of the world, and these pressures affected health care workers both psychologically and

physiologically. Therefore, in order to meet the psychological care needs of about 47,000 employees and doctors in hospitals in the United States, the New York Presbyterian Medical Center has developed a digital tool based on artificial intelligence. This AI solution examines and detects symptoms, provides immediate responses, provides the ability to communicate with counselors in crises and provides referrals for treatment.

Moreover, robots provided around the clock alternative to human force in high-risk situations especially during the initial breakout of the virus when little was known about the diseases. Thus, robot solutions were scrutinized by decision makers as a viable answer to address the constrictions put forward by the COVID-19 lockdown and high infection rates. Airports witnessed a growing number of robots that are capable of disinfecting an entire airport terminal or station within approximately five minutes, and the entire airport within one hour.

Moreover, AI-based heat cameras assisted in detecting the symptoms of infection with the Coronavirus. Thermal cameras monitor a rise in the body temperature to more than 37 degrees Celsius, after which people are directed to conduct more health tests or encourage them to go to home isolation in an effort to contain the spread of the Corona virus.

In addition to mobile applications that include features to spread awareness, cultivate a sense of solidarity and assist patients with their quarantine.

3. Can you provide examples of policies/projects/initiatives aimed at strengthening health innovation systems at the global level? For example, how does your organization support the building of innovative capabilities through investments in R&D and human capital? What projects are in place to stimulate healthcare innovation and effectively address safety, ethical and other concerns?

ESCWA is exploring some health solutions that utilize blockchain technology to manage COVID-19 certification for passengers passing through airports. This initiative is being executed between ESCWA, International Chamber of Commerce (ICC), OakPass, and IATA, Emirates Airlines, and others. The aim of this initiative is to provide technology-based certifications of PCR certificates passing through international borders.

The United Nations Secretary-General Policy Brief on COVID-19 and the Arab Region aims toward overall strengthening of the systems in this region. Such a document offers statistics to better frame the problem and solutions for the fault lines and vulnerabilities exposed by the pandemic.

As such, a wide array of initiatives are recommended, some of which are realized as we speak. In the scope of the question, the policy takes into account prioritizing urgent life-saving medical care to COVID-19 victims and seize opportunities to strengthen the capacity of the region's health care systems, Consider special measures to ensure that COVID-19 prevention and treatment reach refugees, internally displaced persons (IDPs) and host communities and Consider international and regional support to national efforts with greater access to funds (such as a regional social solidarity fund resourced in part by a social solidarity tax rooted in Zakat).

Moreover, the AI for Good summit, overseen by the ITU accelerates adoption of AI solutions for healthcare and bridges the existing fall between technology advancement and its adoption. This summit including global experts and professionals puts forward three AI solutions to step-up global healthcare:

- (1) Reducing the global healthcare shortfall using AI: It is predicted that the healthcare landscape will completely shift in the next 10 years, driven by AI and machine learning (AI/ML). By aggregating and analyzing data from connected-home devices and medical records, healthcare systems will be able to deliver proactive and predictive medical care.
- (2) The opportunities and challenges of introducing AI to improve health care: Establishes a Focus Group on AI for Health which aims to establish the foundations for AI to improve health care on a global scale. The Focus Group is open to all.
- (3) Responsibly unlocking the potential of data in health: As technology becomes more integrated in health services, there is and will continue to be, a huge increase in both the generation and usage of health data. Telemedicine, health chatbots/ apps, and smart watches coupled with monitoring of social media and web data is bringing an opportunity to leverage this generated data to better understand and yield insights about health.

4. Could you share case studies of international cooperation that have strengthened health capacities, particularly in developing countries? Can you provide success stories involving global cooperation in academic research networks, STI diplomacy, or initiatives to make healthcare innovations accessible for all?

Many countries face common health threats and problems. This notion was highlighted by the on-going pandemic. As such, and according to the WHO, cooperation between countries is at heart to solving joint problems and share knowledge and best practices.

To mention some health cooperation models at a regional level:

- (1) South-south and triangular cooperation: This refers to the exchange of expertise in developing nations. In the health sector.
- (2) Cooperation among BRICS countries: This model is evolving, in cooperation with WHO, to accommodate the specific needs, priorities and capacities of these countries and their people.
- (3) Health cooperation in Small Island Developing States: Small Island Developing States (SIDS) are a distinct group of developing countries facing specific social, economic and environmental vulnerabilities.

5. Could you suggest some contact persons responsible for projects/policies, related technologies and international collaboration in this context as well as any experts dealing with projects in this area? We might contact them directly for further inputs or invite some of them as speakers for the CSTD inter-sessional panel and annual session.

6. Do you have any documentation, references, or reports on the specific examples on the priority theme in your organization?

- (1) WHO website
- (2) O1 Government e-magazine
- (3) SG Policy brief for the Arab Region
- (4) AI for Good Summit
- (5) STI UNESCO Policy

Please send your responses and any further inputs on the theme to the CSTD secretariat (stdev@unctad.org) by 7 October 2020. We look forward to receiving your valuable inputs.

Sincere Regards,

CSTD secretariat