# INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)

**Vienna, Austria**
**15-17 January 2019**

**CSTD 2018-19 priority theme on 'The role of science, technology and innovation in building resilient communities, including through the contribution of citizen science'**

Statement submitted by

Shamika N. Sirimanne
Director, Division on Technology and Logistics
Head of the CSTD secretariat

DISCLAIMER: The views presented here are the contributors' and do not necessarily reflect the views and position of the United Nations or the United Nations Conference on Trade and Development.

**Shamika Sirimanne, Director DTL, UNCTAD**

**Introduction of the issues paper on the role of science, technology and innovation in building resilient communities, including through the contribution of citizen science**

**Conference Room C3, VIC, Vienna, 10:20 am, 15 January 2018**

---

**[Introduction]**

Excellencies, distinguished participants, ladies and gentlemen,

I am pleased to introduce the paper prepared by the secretariat of the CSTD on the role of STI in building resilient communities, including through the contribution of citizen science.

The paper highlights new technological solutions; the role of science, focusing on local knowledge and citizen science; mission-driven innovation systems and new approaches to innovation for resilience.

The paper presents examples based on the literature and country case studies by CSTD members.

At the outset, I would like to gratefully acknowledge the contributions from the Governments of Austria, Brazil, Canada, Chile, Dominican Republic, Egypt, Germany, the Islamic Republic of Iran, Japan, Kenya, Peru, South Africa, Turkey, Uganda, and the United States.

I am also thankful for the contributions from the UN Economic and Social Commission for Western Asia, the UN Office for Disaster Risk Reduction, the World Health Organization, and the World Meteorological Organization.

**[Introduction of the topic]**

Distinguished participants,

The paper highlights that people around the world are continuously affected by shocks; from economic crises to health emergencies, from social conflicts and war to natural disasters.

To give you some numbers; in 2016, noncommunicable diseases killed 41 million people; over 7 million died from air pollution-related diseases. In 2017, natural disasters affected more than 95 million.

In the economic dimension, two recent broad-based shocks – the European sovereign debt crisis of 2010-2012 and the global commodity price realignments of 2014-2016 – have resulted in economic slowdown, affecting jobs and the capacity of governments to provide better access to public services.

Moreover, global economic interdependence creates increasingly complex and unpredictable threats.

In summary, social, economic and environmental shocks can derail the progress towards the SDGs.

Therefore, building resilience is critical for sustainable development.

And there is no hope for building resilience without the full engagement at the community level.

Resilient communities are better prepared to withstand, adapt to, and recover from shocks.

They have societies that empower their people to absorb and adapt to shocks.

They have economies that can adapt and self-organize to continue functioning at times of crises.

And they are able to carry out all their activities without harm the environment.

Science, technology and innovation have a critical role to play in each one of these dimensions.

First, new technologies open new pathways for resilience. Digital technologies have empowered and given voice to people. They are critical to assess, monitor and manage risk; and in responding to emergencies.

Second, innovation is a key for economic diversification, which increases the ability of economies to adapt to shocks. New technologies facilitate access to energy and have enabled financial inclusion and risk financing.

Third, new technologies are used for resource management, and they hold the promise of decoupling economic development from environmental degradation, promoting environmental sustainability.

A new development is citizen science, which uses new technologies, particularly mobile Internet, to engage volunteers to carry-out tasks such as data collection in support to scientific explorations.

**[Key issues]**

Distinguished participants,

The paper discusses key technical, social, and market challenges on STI for resilient communities.

Some of the technical challenges are related to data and underlying enabling technologies.

There are gaps in resilience data in developing countries; for example, due to sparse sensor networks.

Crowdsourcing data may be a solution, but there are many challenges. For example, it is hard to broadly share, validate, and integrate crowdsourcing inputs; and with social media for building resilience, issues requiring consideration include the data reliability, privacy and protection.

There is also a need for prudent use of data acquired during citizen science projects.

Another critical issue is the access to communications networks and equipment at the community level. A vital component is the availability of local business to support and maintain that infrastructure.

Some of the social challenges are related to knowledge generation and use.

Community members have different levels of resilience, which are also affected by power relations.

Resilience is not neutral but reflects social norms and competing interests within the community.

For example, technological solutions should consider that women and girls are particularly at risk to the destabilizing effects of shocks such as natural hazards or climate change.

Market challenges are related to scalability and sustainability.

Many technological solutions for community resilience are not developed beyond the prototyping.

A gap is the service delivery models; linking prototyping to entrepreneurs bringing products to market.

Deployment of hardware like drones and sensors have modest scale, rarely beyond small villages.

Another key issue is the need to develop STI solutions that are resilient themselves.

Disruption of critical infrastructure, such as energy and ICT, is extremely harmful for the society.

**[Questions for discussion]**

The paper presents various policy considerations and concludes with some discussion questions.

In relation to good practices and lessons learnt on STI for community resilience:

- What are the opportunities and challenges in innovation for building resilient communities?
- What is the role of the private sector and civil society?
- What are the effective policy instruments for diffusion of technology for community resilience?

In relation to the role of citizen science for building community resilience:

- How new technologies are facilitating or could facilitate citizen science for resilience building?
- What are the main barriers for implementation and scaling up?
- Which policies are needed to address these barriers, with a focus on developing country context?

And in relation to the role of international collaboration:

- What are the experiences in international collaboration on STI for community resilience?
- What could be new areas of collaboration to scale up innovations for community resilience?
- What are the actions that the CSTD can take to harness STI for resilient communities?

I will leave you with these questions, and I look forward to the panel and the discussions.

Thank you for your attention.