United Nations Multi-stakeholder Forum on Science, Technology and Innovation for the SDGs Convened by the President of ECOSOC

**United Nations Headquarters,
New York City, USA**

6-7 June 2016

Panel Presentation

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Session 2: on "Enabling Environment for Science, Technology and Innovation"

(6 June, 11:30 – 13:00)

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[1] These remarks are provided in a personal capacity and should not be regarded as being formally representative of the views of the UVI RTPark or the University of the Virgin Islands, nor constitute an endorsement by the US Virgin Islands government.

Good morning ladies and gentlemen. Thank you you for the opportunity to contribute to the inaugural multi-stakeholder Forum on science technology and innovation (STI) for the sustainable development goals (SDGs.) I wish to thank the President of ECOSOC, H.E. Oh Joon, the Co-Chairs of the Forum H.E. Ambassador Macharia Kamau and Dr. Vaughan Turekian and the organizers of the Technology Facilitation Mechanism for this invitation.

My remarks today will be organized around three main themes, which are as follows: Key Ideas; Pillars of Change and Recommended Actions. While I may not be able to cover these areas in detail in my brief opening statement, am prepared to expand on these ideas in the interactive session, as well as, in the written brief that accompanies the statement. The brief will be available from the organizers and online at CrossingWorlds blog. (http://crossingworlds.blogspot.com)

There is no doubt in my mind that we have reached an important inflection point in thinking about and doing science, technology and innovation so that STI delivers benefits for humanity. The launch of the sustainable development goals (SDGs) was also a watershed moment for

the international community, as the formulation of that agenda placed sustainability at the centre of the development defining the global challenge as the need to ensure and promote peace, prosperity, and well-being while preserving the planet. The promulgation of that agenda recognized the scourge of a growing wealth gap and rising income inequality. The international community has also acknowledged the challenges inherent in decoupling growth and employment and the labour-saving characteristics of technological change. For the last fifty years, when the international community has faced serious challenges, there has been set of guiding propositions and key assumptions about how we should frame responses and act on these. Arriving at this point in the 21st century, having set the SDGs as the goals for 2030, what is clear is that the old ways no longer serve us well. Therefore, this Forum comes at a time when we need to disrupt the status quo in terms of thinking about and doing STI for development.

If we are to avoid making the mistakes of the past and produce a virtuous cycle of change, *how* we go about this is as important as *what* we do. First and foremost we need to draw on the resources, creativity and insights of all groups, not only those occupying positions of privilege. This will not

only greatly enhance the moral authority with which we tackle global problems but is likely to increase the likelihood of successfully delivering meaningful and substantial benefits.

I. Key Ideas

In the area of ideas, it will be necessary to:

1. **Expand concepts of the *triple helix*** to include the financial sector. Increased access to and variety in sources of finance, particularly risk finance are vital ingredients. In STI circles, a great deal of attention has been paid to understanding the linkages and relationships between universities, industry and government, but insufficient effort and focus has been placed on relationships with providers of financial capital. In the developing world, these folks are often not in the room or even part of the conversation.

   When introducing considerations of the financial system in this agenda, it is also important to be mindful of recent changes such as de-risking of the financial system and its deleterious effects on regions of the world, such as the island-states of the Caribbean region.

2. **Reconceptualize innovation** as a set of processes aimed at producing private and social value in which bidirectional exchange of knowledge is key. The secret sauce of innovative nations, regions, cities, and even individual organizations has been shown to be the creation of an

enabling environment that allows actors to generate and circulate ideas and knowledge and combine these in ways that produce value.

The Technology Facilitation Mechanism can play an important role in setting out a critical research program to deepen understanding of how these processes work in the developing world. We cannot simply continue to rely on out-dated formulaic prescriptions about the ratio of R&D to GDP and hope for the best. A much more theoretically bold, granular, context specific agenda for STI and development is required.

3. **Embrace technology acquisition and knowledge exchange**

I would argue that to move forward an important conceptual shift involves abandoning and tossing into the garbage heap of history the notion and term "technology transfer".

I say this in the strongest terms because if the developing world is to be an active agent of change participating fully in the technological and knowledge age, all actors must be considered *apriori* as sources of knowledge that produce value.

The term *technology transfer* and the processes associated with it, is loaded and implies a source of the knowledge in the global North and passive recipients in the developing world.

Global warming and the other deleterious effects associated with climate change did not take place because of superior knowledge in the global North, so why should the world rely on these actors to lead the international community in designing solutions for mitigation and adaptation to climate change.

Democratization of knowledge and truly embracing reciprocity is required. Perhaps, its important to recognize as a starting point that different cosmologies, value systems and the economic and political systems associated with them produce varying environmental effects. With that assumption, it should become clear that the shamans, farmers, and community leaders of the rural villages across the planet may have more to teach about resilience and sustainability than those of us sitting in the global North. Our current processes for sharing knowledge and according value do not allow for those voices to be heard and for their perspectives to be treated with equal respect.

Even beyond the issue of ensuring diversity across sources of knowledge, there is need for change even within the modern and industrialised world. There is recognition that within countries and across the globe, we need to move towards generation, production and diffusion of low-carbon systems. However, the pace at which this transition takes place is slowed down because of political interests. The world has to endure a delay on receiving the benefit of positive multipliers because the power relationships and structures that created the negative effects of climate change are so entrenched. In the

development agenda under the banner of technology transfer, these organizations are in the forefront of offering advice to the rest of the world on how to manage the transition to low-carbon systems.

By denoting the generation and exchange of technological solutions -- technology transfer – we miss the boat! The global community needs to expand its search for solutions and to support active technology acquisition strategies and bi-directional knowledge exchange to diffuse those solutions. This should be done in ways that do not reinforce the existing patterns of inequality and concentration of wealth and power.

Environmental degradation takes place at a planetary scale. The effects of consumption and production patterns in one part of the world have impacts thousands of miles away. These effects are cumulative, system-wide and difficult to change. Designing and deploying solutions will require cooperation and collaboration without the presumption of the one-way flow of technological systems and knowledge from the global North to the rest of the world.

4. **Recognize that geography and practice of innovation and STI effort have changed** dramatically over the last two decades. As show in Figure 1 below:

Figure 1: Location of Estimated Worldwide R&D Expenditures: 1996 and 2007
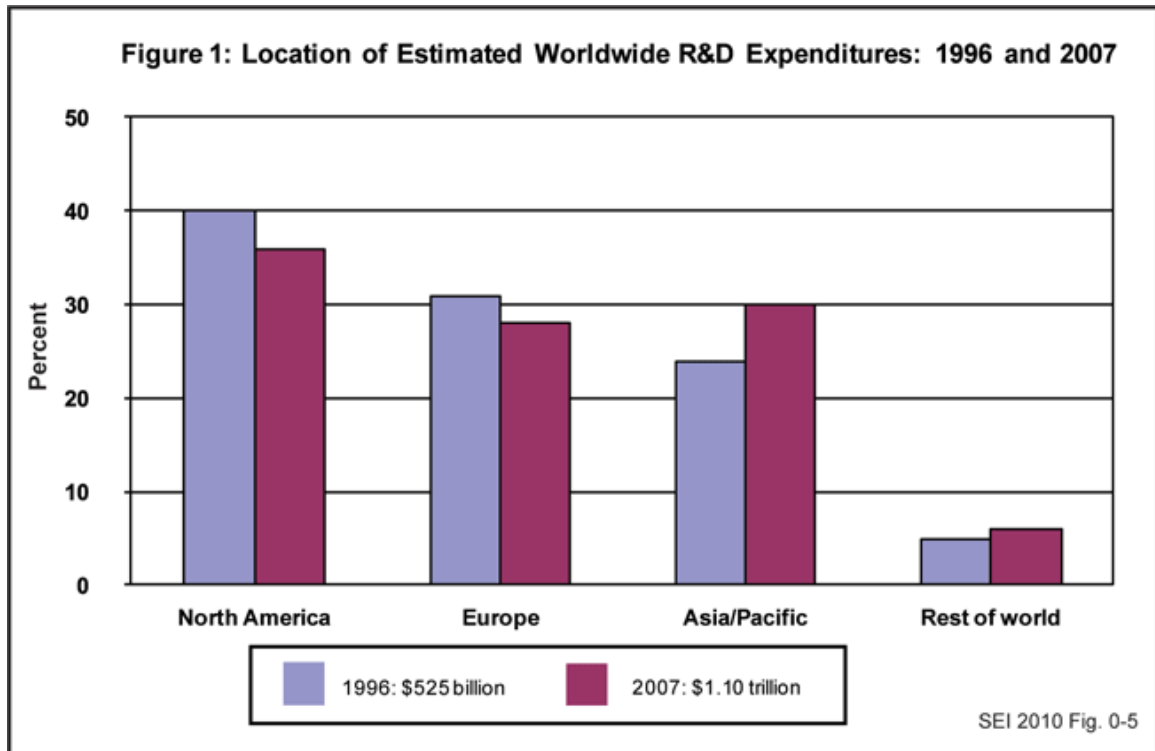
Source: National Science Board (2010)

In addition to changes taking place within the formal and traditional science system, there is also growing recognition of the importance of non-formal ways of knowing and non-science based pathways to innovation, particularly as this relates to innovation for social purposes.

5. **Avoid technological determinism.**

The relative poor performance of the ICT sector in terms of co-creating outcomes of diversity along lines of class, race, gender, sexual

orientation and national origin should be a salutary lesson for the world. Technology is too important to be left up to unshackled market forces. It is important to imbue values and principles of justice, equality and equity into the agenda and to have in mind a set of goals that incorporate an ethical dimension. Without this the social and societal components are left to one side. The ICT sector produced tremendous growth in wealth, notwithstanding the dot.com boom and bust. However, this sector has also allowed a clear view of what happens when only markets rule and the rules of the game are survival of the fittest. The overhyped workplace trends that peaked in the last decade have been shown to be only well suited to a thin slice of humanity and reinforce behaviours and personality traits that do not serve us well.   We have to at least try to demonstrate that it is possible to develop high growth dynamic tech sectors that are not also associated with racism, sexism, homophobia and online bullying.

II. Pillars

These ideas can take root and bring about a virtuous cycle of growth with equity, improve human welfare and well being if we pay attention to the following important pillars:

Values and Principles that promote, secure and protect human rights, justice, equality and equity. C**atalysts** to lead action and **convenors** to bring stakeholders together to undertake actions using appropriate mechanisms and processes, at all levels, including the multilateral.

Mechanisms and processes, including the multilateral system and the United Nations. This set of actions will generate **resources** and also define rules for allocation of those resources.

It will help to set **goals** that are on the one hand aspirational but also achievable.

III. Recommended Actions

I wish to commend the organizers of this Panel and the Technology Facilitation Mechanism for making a start on this important effort, at this time when it is needed. In the preparatory material, we were asked to consider what would it take to entice and enable STI providers to address the challenges of the most vulnerable and marginalized. This shows that the TFM has acknowledged that structural realities and positions in global systems matter. Sadly, these factors shape aspirations and ambitions and can lead to paralysis.

The Technology Facilitation Mechanism stated that the international community should set itself a goal for building an enabling environment that is both attractive to foreign investment and locally supportive of innovation, adaptation of technology and dissemination of knowledge.

This is very much on point. I would like to extend an invitation to the TFM to collaborate with the UVI Research & Technology Park (https:rtpark.uvi.edu), a private-public-academic partnership, which has statutory powers to attract knowledge-based and technology intensive businesses to the US Virgin Islands, and to use this facility as a test bed in its efforts to achieve this goal. The architects of the RTPark were bold and visionary. They had faith that technology enabled diversification would provide a growth impulse for a small US Territory in the Caribbean, where the population is only just above 100,000 and the traditional mainstays have been tourism, agriculture, rum-production and oil refining. This unique program of FDI attraction seeks to harness the benefits of US laws, pro-business regulations and attractive tax incentives to build a sector that would not naturally be associated with this place. In the last year, the Board of Directors approved a new strategy allowing the RTPark to focus on partnering with impact investors. The US Virgin Islands has benefitted from considerable technological infrastructure investment (both publicly and privately financed) with the result that on the North-Western tip of St Croix (as the most Eastern point of the United States) there is a landing point for large capacity sub-terrestrial broadband cables that connect into Tier 1 peering points for the Internet backbone. There is also a high-speed

cable ring across the entire Territory, owned and operated by the Virgin Islands Next Generation Network (VI NGN).   The challenge facing the US Virgin Islands is common to many developing country regions; we must find pathways to optimise the investment in equipment and build a pipeline of talent that can use this capital and knowledge base to create future wealth. We have an opportunity to undertake policy experimentation and catalytic action to ensure that these benefits are realised and optimized. In so doing, this visionary economic development program can provide lessons for the rest of the developing world.

Still keeping within the Caribbean region, I strongly recommend that the Technology Facilitation Mechanism draw on a rich intellectual legacy of the University of the West Indies, and build on that working in cooperation with other partners, to design and carry out a much needed research and policy program that articulates a deep understanding and more sophisticated logic of the nature of the interrelationship between STI and sustainable human development. More than 30 years ago, the Caribbean region, with Canadian funding from IDRC, undertook a path-breaking research program – the Caribbean Technology Policy Studies program. A millennial edition of this program is much needed; it would

build on the work of Lewis, Best, Girvan, Farrell and others, while taking account of the changes in the political economy and technological environment facing this region. The Caribbean region is facing challenges of serious environmental shock; unsustainable debt level; high levels of structural unemployment; low rates of growth and social upheaval and yet it is a space and place of resilience, inspiration, creativity and cultural richness. There is struggle, survival and always the emergence of world-class greats: Lara, Marley, Bolt, Minshall, Walcott, and Williams, and those are just the most recognizable names.

A set of interventions focused on deep engagement with the nature and sources of innovation in the Caribbean would allow the UN system to help where it is most needed and to use its reach to convene groups of stakeholders and build coalitions; processes that are required to better align STI with human development. Working through and with the United Nations would allow this study to be an example of South-South cooperation as it could be designed to facilitate cross-regional exchange among Africa, the Caribbean and Asia with respect to recent experience with STI and sustainable development.

If that sounds too daunting, let me suggest a place to start. The TFM should follow up by introducing any innovation competition winners, especially those from the Caribbean region to the UVI RTPark, StartUp Caribe (siliconcaribe.com) and ACI Avantor Commercial Incubators (acicaribbean.com), all of which are private sector led ecosystem service providers. Ann Mei Chang of the Global Development Lab in a recent interview said that it was essential to involve the private sector in scaling up development efforts and not only for their financial resources but for their particular ways of doing.

Given access to talent, ideas and seed capital, we have the potential to take bold, audacious actions and deliver results. It's a risk worth taking.

Conclusion

It is both important and urgent that the international community undertakes important interventions to better align STI with the important challenges of sustainable human development, and the efforts being taken by the Technology Facilitation Mechanism are laudable.

In contributing to the agenda of the TFM and furthering its work, I have suggested that it is important to: re-conceptualize innovation, science and technology; diversify and democratize sources of knowledge that inform STI doing and policy making; and to define and develop more effective tools, mechanisms and institutions, paying particular attention to performers of innovation in the private sector and innovation ecosystem intermediaries. I look forward to working with colleagues to making these goals a reality.

Without leaps of imagination or dreaming, we lose the excitement of possibilities. Dreaming, after all is a form of planning.

- Gloria Steinem -