

Remarks by Dr. Wang Ruijun at Panel on Science-Policy Interface and Emerging Issues

Ms./Mr. Chair

Mr. Moderator,

Excellencies,

Distinguished co-panelists,

Ladies and gentlemen,

Good afternoon. It is my great pleasure to join you today in what promises to be a most interesting conversation about the science-policy interface and emerging issues.

For the past 20 years, the Commission on Science and Technology for Development has been the torch bearer and the premier international forum for addressing new and emerging issues in science, technology and innovation and its contribution to the collective and global vision of inclusive and sustainable development.

A key component of the Commission's work to strengthen the science-policy interface is to use science to support public policy across various dimensions of sustainable development and to use public policy to promote and more effectively harness the power of science in addressing our global challenges.

In this context, I want to provide three key messages:

- First, we have examples of how scientists - working together with policymakers - have contributed to our understanding of sustainable development and responded to such challenges with innovative solutions.
- Second, despite the lessons that we can learn from the past, our current and future challenges might require new, innovative approaches to achieve the SDGs.
- And third, we can work together to strengthen the policy-interface, and I will propose some possible ways forward.

Message 1: We have examples of scientists and policymakers working to address sustainable development

We know that science, technology, and innovation are critical enablers for addressing food security, an issue addressed in the 20th session of the UN Commission on Science and Technology for Development.

The Green Revolution is a good example of how scientists and government worked together to help South Asian countries, in aggregate, triple their agricultural yields since 1960.

It involved scientists developing high-yielding cereal varieties, fertilizers, and pesticides along with government provision of rural transport infrastructure, irrigation, rural power, subsidized inputs, and research and extension services.

However, in spite of such successes, the Green Revolution largely bypassed Africa and it also had significant environmental costs. Along with population growth, the intensified agricultural practices of the Green Revolution may have also contributed to water scarcity, deforestation, desertification, and greenhouse gas emissions.

In a world where nearly 800 million people are undernourished, the goal of achieving "Zero Hunger" by 2030 will require even more collaboration amongst scientists and policymakers, using new scientific, technical, and innovative approaches to increase productivity, while minimizing environmental damage.

[Dr. Wang to add national experiences in China]

The Commission identified several good practices for strengthening the science-policy interface not only for food security but for sustainable development more broadly.

First, national governments should increase support for R&D aligned with the needs of the poor.

For example, China's government-sponsored R&D, which increased 5.5 per cent annually between 1995 and 2000 and 15 per cent annually after 2000, was considered key to the adoption of advanced technologies by poor farmers.

Increased R&D funding is ever more important as we address the old challenges of improving agricultural productivity while addressing a new set of challenges involving climate change, renewable energy, and resource management.

Second, scientists and policymakers should come together to do technology foresight and assessment to ultimately shape the future of new and emerging technologies.

New technologies like synthetic biology, gene editing, artificial intelligence, 3D printing, drones, big data, and the Internet of Things could potentially unlock new ways of addressing our most pressing sustainable development challenges. But they could also compromise the privacy and security of consumers, disrupt labor markets, or put our health and environment at risk.

Scientists and policymakers should forge stronger links not only to predict the likely impact of scientific and technological applications but develop a normative framework that shapes these technologies in line with national contexts, goals, and values.

Third, regional and international cooperation is a powerful mechanism for more effectively sharing scientific data in support of the Goals.

The CSTD discussed how regional and international early warning systems have enabled the sharing of data from national meteorological, remote sensing, and space agencies. This data has been used to provide timely alerts on expected or emerging crises, like famine and drought, and help farmers improve crop productivity and food security.

Perhaps there are many more opportunities for scientists and policymakers to share scientific data and results in ways that accelerate our progress towards 2030.

The Commission, other UN agencies involved in STI, and the broader international community have a critical role to play in continuing to foster this collaboration between the scientific and policy communities, including sharing best practices, case studies, and lessons learned.

Message 2: New Innovative Approaches for the SDGs

Despite what we have learned from the past, we may need new, innovative approaches to address the challenges of today and tomorrow, an issue also addressed by the Commission in its annual session.

First, we may have to look beyond national borders to the solutions to our global and regional problems. In fact, both governmental and non-governmental organizations are sponsoring grand challenges and innovation competitions to crowdsource innovative solutions to achieve specific technological or social goals.

For example, the "Fighting Ebola Grand Challenge", which was launched by USAID in response to the outbreak of Ebola virus disease in West Africa, received over 1,500 ideas across the world to help front-line health-care workers provide better and more timely care.

Some of the ideas have been tested or deployed in the field, including wearable patient sensors in Sierra Leone, low-cost battery powered infusion monitors in Guinea and Liberia, barrier technology to prevent contamination as well as health communications software for health workers in Liberia.

Second, we may have to look beyond the professional scientific community as the only group that can provide innovative solutions to the challenges of sustainable development. Amateur scientists, smallholder farmers, hackers, makers, and grassroots communities all have a part to play in this regard.

The Commission discussed how frugal, grassroots, and pro-poor innovation is enabling innovation not only for the poor but by the poor. For example, the Mitticool refrigerator was designed by an Indian potter to work without electricity.

And in Brazil, grass-roots innovation was demonstrated by a network of more than 700 non-governmental organizations, institutions, social movements and farmers' groups coming together to provide water cisterns to capture and store rainfall.

Third, we may have to look beyond traditional sources of financing for science, technology, and innovation. Innovation prizes, like the UK-based Longitude Prize, are funding the development of diagnostic tests for antibiotic resistance while advance market commitments have accelerated the development of vaccines for developing countries.

The CSTD highlighted that new financial instruments and mechanisms, including crowdfunding, peer-to-peer lending, social impact bonds, and impact investing may also hold promise for improving access to capital.

Message 3: Moving forward to strengthen the science-policy interface

Finally, I want to propose a few thoughts for discussion and ways of moving forward to strengthen the science-policy interface.

First, there is an opportunity to better align research with the SDGs.

In particular, there is a need to engage in a systematic mapping exercise that links current and expected R&D funding to the SDGs. This process could reveal key gaps in funding needed to address the SDGs.

Globally, it has been estimated that \$3.9 trillion is the annual funding needed to achieve the SDGs. Unfortunately, we do not know how much of that investment should be devoted to research and development.

Linking R&D to specific goals and targets could help the scientific community and policymakers mobilize the resources needed to achieve the SDGs by 2030.

Second, we should explore how to mainstream science in the HLPF review process.

Given that Member States have emphasized that the linchpin of follow-up and review in implementing the SDGs will be at the national level, I propose that we all help mainstream science, technology, and innovation in the preparation of voluntary national reviews at the HLPF.

I would be interested in exploring with you today on ways that the Commission, the scientific community, and intergovernmental institutions can provide inputs to the review process.

Third, we should strengthen links between HLPF and UN bodies that address science, technology, and innovation

Since the SDGs were adopted, the CSTD has started to align its priority themes to focus not only on the 2030 Agenda in general but also on specific goals being reviewed by the HLPF.

For example, in 2016 we reviewed sustainable cities (SDG 11), this year in 2017 we analyzed food security (SDG 2), and next year in 2018 we will look in depth at renewable energy (SDG 7).

Because of CSTD's pioneering role as the key forum on STI in the UN system for over two decades, it is important that the HLPF leverage the collective wisdom developed by the Commission, representing countries, both developing and developed, in their efforts to transform economies, make their societies more inclusive, and make development more sustainable.

I would like to explore ways that the CSTD can better link with the HPLF process.

(Ms./Mr.) Chair(woman/man), ladies and gentlemen,

The UN Commission on Science and Technology for Development stands ready to support our collective efforts to strengthen the science-policy interface for sustainable development.

I look forward to further engaging with all of you in this panel.

Thank you for your attention.