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Member of the Panel
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Our moderator, Dr. Lucilla Spini, has asked panel members to begin with a favorite scientific discovery or breakthrough. I am a quantum physicist, and so would choose the invention of the transistor, semiconductors, and integrated circuits, which has powered the Information Communication Technology (ICT) revolution that has transformed our world. However, the recent discovery that has gotten me most excited is the experimental discovery of gravity waves announced by the LIGO team in 2016. We have not yet discovered how to harness gravity waves, but just give us more time![2]

I will follow Lucilla's subsequent guidance to focus my remarks on empowering member states, in particular to discuss (i) insights from the science, technology, and innovation (STI) community and (ii) what STI community should work on more to empower member states.

I will begin with a discussion of several insights from the Global Sustainable Development Report (GSDR). A key mandate of GSDR in my view is to strengthen the science-policy interface at the United Nations. The process is as important as product.

The 2014-16 GSDRs were produced with significant input from worldwide STI community as well as the UN agencies. There has been a real partnership of the UN with the STI community, involving considerable "pro bono" contributions from experts and interested scientists worldwide. These documents are reports of the UN, and they have strengthened the science-policy interface at the UN.

The three GSDRs have useful insights and analyses well worth reading and studying. Here are three examples of what I consider to be important insights from the 2016 GSDR:

- Chapter 1 focuses on ensuring no one is left behind. It has a comprehensive review of 122 interventions targeting those left behind, and concludes that targeting is not sufficient. Inclusiveness has to be an integral part of design of interventions.

- Chapter 3 focuses on technologies, surveys crucial emerging technologies, and categorizes selected policy and action proposals from contributing scientists. The top four categories give a good indication of what the STI community thinks member states should focus upon, and provides policy suggestions for each. The four categories are: (i) strengthening national systems of innovation to accelerate technology progress; (ii) developing plans, roadmaps and integrated assessments;

(iii) putting technology at the service of inclusion; and (iv) building institutions that support sustainable technology progress.

Chapter 5 focuses on emerging issues. The four emerging issues ranked at the top by contributing scientists are: (i) establishing governance mechanisms for Sustainable Development Goals (SDGs) at the global, regional, national, and local levels; (ii) coping with increasing impacts of climate change; (iii) dealing with political instability and social unrest from inequalities and other sources; and (iv) ensuring access to and accelerating development of affordable, sustainable, environmentally-friendly modern energy services. These priorities are an additional important message from the STI community to member states.

The future of the GSDR is discussed in the zero-draft of the HLPF ministerial declaration. It requests that every four years an independent group of 15 scientists shall be appointed to draft a comprehensive quadrennial GSDR, supported by a UN task team of several agencies and the DESA secretariat and utilizing input from the STI community. In the intervening years, the scientists who work on the report could be invited to provide input to the HLPF, but the GSDR would appear only every four years.

Here is my perspective. The language could be modified slightly to mirror what was done for the 10 Member Group (10MG) of the Technology Facilitation Mechanism (TFM). The 10MG, which I co-chair and includes representatives from the STI community, civil society, and the private sector, supports the TFM. The 10MG works closely with the Interagency Task Team (IATT) of more than 30 agencies and DESA, but the 10MG does not control the TFM.

For guiding the future of the GSDR, it would be a relatively modest change to task the independent group of 15 experts to oversee the process of input, drafting, and production of the GSDR, supporting DESA and all the UN agencies. The GSDR would be a report of the UN, not a report to the UN, and it would continue to strengthen the science-policy interface at the UN. A good suggestion for intervening years is to produce supplements focusing on new and emerging issues.

Now I would like to turn to the consensus recommendations of the 10MG on how to harness and accelerate the contributions of STI for the SDGs.[3] This brief statement from the 10MG was presented at the Multi-stakeholder STI Forum in June, and has strong overlap with the co-chairs summary of the STI Forum that will be presented to the HLPF on July 13.[4]

The 10MG suggests nine areas of emphasis, which I will separate into three recommendations for member states on the enabling environment, three recommendations for member states on actions, and three recommendations for the STI community for greater focus. On July 13, the HLPF will hear remarks from my 10MG colleague Dr. Paulo Gadelha from Brazil.

The three recommendations on the enabling environment for member states concern:

(i) building human and institutional capabilities in STI nationally and internationally (i.e., build knowledge-based and innovative societies with wise policies and investments in education, R&D , and the innovative ecosystem),

(ii) strengthening the science policy interface nationally and internationally (i.e., strengthen scientific advising capabilities inside and outside government; every country should have sources of high quality, objective, and credible scientific advice – free of politics and special interest, independent of government control, and conveyed to the public and government)[5]

(iii) accelerating development and use of new ICT tools that enable societies, firms, institutions, communities, and individuals to learn from each other (e.g., TFM on-line platform).

The three recommendations on actions for member states concern:

(i) developing social actions plans and roadmaps (e.g., facilitate constructive, effective, practical action that gets better over time with feedback from STI community).

– I looked at the voluntary national reviews submitted to the HLPF this year. The one that comes closes to the vision of what I think is needed is the national plan laid out by Finland. I recommend you read the Finland voluntary national review.[6] Also worth examining is the health SDG and its targets and indicators as they provide a beginning framework for developing an action plan for global health. We can also learn from the COP 21 innovation of asking countries to produce transparent nationally-determined contributions for reducing carbon emissions. A similar approach could be used effectively for making progress on other SDGs.

(ii) expanding partnerships between the public and private sector (i.e., the money for deploying technologies is predominantly in the private sector; clever policies and incentives are needed to help align interests of private companies with the SDGs, which can partly be done with public-private partnerships).

(iii) implementing STI tools for providing support for those left behind in every country (e.g., new tools can be implemented for strengthening social safety nets, development assistance, and for putting new technologies directly in the hands of the poor).

The three recommendations for greater focus by the STI community concern:

(i) identifying knowledge gaps (e.g., working with multiple stakeholders and across disciplines, advising on road maps on what is working and not working, to find real-world knowledge gaps).

(ii) conducting integrated assessments (i.e., helping to understand synergies and tradeoffs among SDGs to help maximize the benefits and reduce conflicts among SDGs from interventions).

(iii) advancing STI tools for peace-building (i.e., STI can help in monitoring treaties, countering terrorism, reducing corruption, supporting human rights, increasing security of marginalized groups, helping post-conflict societies, etc.).

As you can see from the two parts of my statement, the GSDR and the TFM can work well together as there is considerable overlap in approaches, thinking, and recommendations. I hope the HLPF continues to seek the input from the worldwide STI community with the GSDR and TFM, and continues to emphasize the importance of strengthening the science-policy interface for achieving the 2030 Agenda.

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[2] Actually the practical implications of Einstein's Theory of General Relativity have provided benefits to society for decades, as indicated by the precision of Global Positioning Systems (GPS) made possible by corrections calculated from Einstein's Theory. The experimental confirmation of gravitational waves from collapsing black holes may lead to observation of more events and gravity wave astronomy.

[3] See statement from 10MG for Multi-Stakeholder STI Forum: https://sustainabledevelopment.un.org/content/documents/21201STI%20for%20SDGs%2010%20member%20group%20STI%20Forum%20final%20clean.pdf

[4] See: Co-chairs summary: https://sustainabledevelopment.un.org/content/documents/10536STI%20Forum%20Co-chairs%20Summary%20-%20final%20-%20June%2022.pdf

[5] See "the art of science advice": http://www.sciencediplomacy.org/editorial/2016/art-science-advice

[6] See Finland national voluntary review report: https://sustainabledevelopment.un.org/hlpf/2016/finland