Session 5: STI for sustainable terrestrial ecosystems (SDG 15)

Co-Chair Hoshino introduced this session on the potential for STI to support the achievement of SDG 15 on sustainable terrestrial ecosystems.

Panel Presentations: Huadong Guo, 10-Member Group, moderated the panel.

Inger Elisabeth Måren, University of Bergen, Norway, noted that humans modified 40% of the Earth's surface mostly for food production. Contrary to the general view, most of the calories currently consumed are produced by small-scale farmers and their surrounding ecosystems. She called for more biodiversity-friendly food-production systems and making the distinction between land use and land abuse. This can be done, she said, through including externalities in prices and regulations.

Skumsa Kathleen Audrey Mancotywa, Department of Environmental Affairs, South Africa, noted that Africa's STI infrastructure, even though improving, is still weak. She called for solutions to poaching and illegal wildlife trafficking. South Africa has been working with the mining sector on the Mining Biodiversity Guidelines, she said, which were developed with the help of biodiversity conservation tools.

Didier Babin, Chair of the International Coordinating Council of the UNESCO Man and the Biosphere Programme, stressed that sustainable development is not an option but an obligation. He called for caution with the "tension areas" within the SDGs, where certain SDG targets pose threats to biodiversity.

Suresh Nair, International Centre for Genetic Engineering and Biotechnology, India, said the solution for tackling the challenges posed by the decrease in arable land, paired with the pressure to use less pesticides and the urgent need to increase food productivity, is host-based resistance. By using plants' natural resistance, he noted that we can produce more in terms of crop yield, and thus decrease pressure to convert forestland into farmland and prevent biodiversity loss. To that end, he recommended carrying out vigorous screening of crop germplasm to identify appropriate resistance against major pests and devise molecular tools to get a better understanding of insect pests.

In the subsequent discussion, a stakeholder asked about gene cultivation versus genetic engineering and associated risks to humans. Yale University described a programme called "Editing Nature," which is developing biotechnology to limit invasive species and protect endangered species. She called for involvement of local and traditional knowledge and historically marginalized communities. UNESCO highlighted the role of biosphere reserves in creating livelihoods while reversing the decline in biodiversity and benefitting from local and indigenous knowledge.

In response, Måren said it is naïve to think we can continue eating and producing food like we do today in the future and we need to restructure our food system. Mancotywa called for all sectors to work together to combat biodiversity loss, drought, and desertification and ensure ecosystems are resilient to climate change. Babin said we need to take scientific and technological risks seriously, but biodiversity and ecosystems are essential for prosperity. Nair said we need to transfer technology to the grassroots level for immediate implementation.