

## **Science Technology, Innovation, and Engineering Solutions For the SDGs: Theory, Practice and Application**

STI Forum Special Event of the Science Technological Community Major Group (STC MG) and Co-Organized by the International Science Council (ISC) and the World Federation of Engineering Organizations (WFEO)

***3 May, 08:15 to 09:30 Trusteeship Chamber UN Headquarters (in-person event open to all registered participants of the STI Forum)***

The role of the Major Groups and Other Stakeholders (MGoS) in the implementation, follow-up and review of the Sustainable Development Goals was established by the General Assembly in its resolution 67/290 and in paragraph 89 of the 2030 Agenda. Paragraph 89 calls for MGoS to report on their contribution to the implementation and follow up of the 2030 Agenda and the Sustainable Development Goals (SDGs). This Special Event, organized by the Science and Technological Community Major Group (co-chaired by WFEO and ISC) aims at bringing together the MGoS to discuss ways for improving understanding and communication of the critical role science, technology, innovation and engineering must play for achieving the (SDGs) with a focus on the SDGs under review at the 2023 UN high-level political forum to be held in July 2023 - SDGs 6, 7, 9, 11, and 17. It will address the urgent need to accelerate progress in the Decade of Action. It will also be an opportunity to discuss sustainable infrastructure and its connections with Science Technology, Innovation, and Engineering for Sustainable Development.

Three topics will be reviewed and discussed to demonstrate how STI & E underpins the achievement of the SDGs and delivers multiplier effects across SDGs. Each topic will be introduced by a brief presentation of the key underlying science, technology, innovation, and engineering concepts. This will be followed by examples of applications in developing countries.

Chair: Dr. K.N. Gunalan, Senior Vice President of AECOM and co chair of the STC MG

Moderator: Nick Perkins Senior ISC Consultant

### **Introduction** (5 minutes)

- H.E. Ms. Lachezara Stoeva, President of ECOSOC (TBC)

### **Program** (36 minutes)

Groundwater for water supply in Developing Countries (SDG 6, 7, 9, 11, SDG 17)) - Dr. Stephen E. Silliman, Dean, School of STEM, Trevecca University (confirmed)

Although groundwater has been developed for water supply and irrigation since ancient times, modern science and engineering have greatly improved our ability to identify and develop groundwater resources. In addition to water supply, groundwater resources are potential energy sources that can be integrated into an overall rural or urban infrastructure system. The water expertise in the UN system is extensive; For example, UNESCO has an almost 50 year record of global leadership in water resources with its intergovernmental Hydrological Program (IHP).<sup>1</sup> The recent UN Summit on Groundwater and the 2023 UN Water Conference provided many examples of science and technology applied to development of ground water resources in all settings.

Sustainable Infrastructure Systems (SDG 6,7, 9, 11, and 17) - Dr. Cris B. Liban, Chief Sustainability Officer, Los Angeles County Metropolitan Transportation Authority (confirmed)

UNOPS demonstrated that infrastructure underpins all 17 of the Sustainable Development Goals.<sup>2</sup> One of the primary expectations for any infrastructure system is to support the provision of basic services. The UN defines the infrastructure-related basic services necessary to eliminate extreme poverty (SDG1) as: water & sanitation (SDG6), electricity (SDG 7); mobility (SDG 9 & 11), waste management (SDG 11), and ICT (SDG 5 & 9).<sup>3</sup> Infrastructure systems must be planned, designed, constructed and operated to support these basic services.

Nature-Based Solutions (SDG 6, 9, 11, 17) -

Natural and nature-based solutions are increasingly being considered as alternatives to gray and green-gray infrastructure for climate mitigation and adaptation, coastal protection, flood protection and mitigation, water quality management, food systems, and reducing urban heat. They can be integral components of urban and rural infrastructure systems.

**Discussants** (10 minutes)

- CY MG Science-Policy platform
- Women MG

**Open discussion** (20 minutes) including through crowd-sourced comments, questions, challenges, and barriers sourced through the Major Groups and Other Stakeholders Coordinating Mechanism and coordinated outreach between, ISC and WFEO.

**Closing Statements** (5 minutes)

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<sup>1</sup> UNESCO IHP <https://www.unesco.org/en/ihp>

<sup>2</sup> Thacker S, Adshead D, Morgan G, Crosskey S, Bajpai A, Ceppi P, Hall JW & O'Regan N. Infrastructure: Underpinning Sustainable Development. UNOPS, Copenhagen, Denmark

<sup>3</sup> SDG indicator metadata <https://unstats.un.org/sdgs/metadata/files/Metadata-01-04-01.pdf>

- Dr Marlene Kanga AO, former President, 2017-2019, of World Federation of Engineering Organizations
- Anthony (Bud) Rock, Senior Advisor, ISC
- H.E. Ms. Mathu Joyini, Ambassador and Permanent Representative of South Africa to the UN, Co-Chair of the 2023 STI Forum
- H.E. Mr. Thomas Woodroffe, United Kingdom Ambassador to the UN Economic and Social Council, Co-Chair of the 2023 STI Forum