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Towards a results-based management approach for capacity-building in space science, technology and applications to support the implementation of the 2030 agenda for sustainable development☆

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ABSTRACT

The United Nations Office for Outer Space Affairs (UNOOSA) has the mandate to assist Member States with building capacity in using space science, technology and their applications in support of sustainable economic, social and environmental development. From 20 to 21 June 2018 the international community will gather in Vienna for UNISPACE + 50, a special segment of the 61st session of the Committee on the Peaceful Uses of Outer Space (COPUOS), to celebrate the 50th anniversary of the first UNISPACE conference and to reach consensus on a global space agenda for the next two decades. "Capacity-building for the twenty-first century" is one of the seven thematic priorities of UNISPACE + 50, identified and agreed upon by COPUOS. The Committee has tasked UNOOSA with undertaking the work under this thematic priority and with reporting regularly to the Committee and its Subcommittees on the progress of its work. It is therefore appropriate, in this context, to take stock of the achievements of the capacity-building activities of the Office, to review the relevant mandates and activities and to consider the necessity to strengthen and better align them with the future needs of the World and in particular with the 2030 Agenda for Sustainable Development. This paper describes the efforts on-going at UNOOSA, building on its experiences with implementing the United Nations Programme on Space Applications and the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) and working with Member States and other United Nations entities, to develop a results-based management approach, based on an indicator framework and a database with space solutions, for promoting the use of space-based solutions to help Member States achieve the Sustainable Development Goals (SDGs) and successfully implement the 2030 Agenda for Sustainable Development.

1. Introduction

On 25 September 2015, with the adoption of General Assembly Resolution 70/1, the Member States of the United Nations committed to implement the 2030 Agenda for Sustainable Development [1].

The Agenda is a call and plan for action for people, planet, prosperity and peace to be achieved in partnership with no one left behind. Taking into account the lessons learned in the implementation of the Millennium Development Goals (MDGs) in the 2000–2015 period [2], the 2030 Agenda encompasses the three dimensions of sustainable development, namely, economic, social and environmental development.

It is based on 17 universal Sustainable Development Goals (SDGs) covering a wide range of global issues, including the elimination of poverty and hunger, providing education and health services for all, maintaining our environment and ensuring decent work and living conditions on the basis of a just society and strong institutions (see Fig. 1) [3]. Through the SDG on climate action the Agenda is linked to the Paris Climate Change Agreement, the outcome of the 21st Conference of the Parties (COP21) of the United Nations Conference on Climate Change. Several of the SDGs also link the Agenda to the implementation of the Sendai Framework for Disaster Risk Reduction. The SDGs are integrated and indivisible and linked to 169 concrete targets that should be achieved by 2030. Success is measured through an intricate set of global indicators, quantifying our progress towards achieving these targets. This example of goal-based planning constitutes a "globally shared normative framework that fosters collaboration among countries, mobilizes all stakeholders and inspires action." [4].

The 2030 Agenda is applicable to countries at all levels of

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Fig. 1. Sustainable development goals.

development. Its successful implementation will require all stakeholders to contribute, national and international institutions and organizations as well as the individual citizens of this World [5]. Achieving the SDGs will be essential for the future of our planet and its inhabitants.

However, the challenges are substantial, considering the increasing pressure on environment and resources due to the growth of the population, which is projected to increase from currently 7.5 billion to reach 8.5 billion by 2030, 9.7 billion by 2050 and 11.2 billion in the year 2100 [6]. Implementing the 2030 Agenda will not only require further strengthening of the relevant institutional frameworks but will not be possible without making use of new technologies to address the global challenges enshrined in the SDGs. Even with the most moderate projections for future population growth we will soon reach planetary boundaries unless we succeed in utilizing new technologies that will enable us to overcome existing limitations. Sustainable Development requires a long-term transformation. Successful implementation of the 2030 Agenda will not be possible with a "business as usual" trajectory but will have to be based on a technology-driven sustainable development trajectory.

This paper addresses the important role that space technology and its applications will play in this process and how the Office for Outer Space Affairs (UNOOSA) is preparing to support Member States in building capacity to ensure that they can make full use of the contributions of space technology solutions.

2. Implementing the 2030 agenda

The task of implementing the 2030 Agenda for Sustainable Development is in the hands of all stakeholders. The Member States of the United Nations have established a High-Level Political Forum on Sustainable Development (HLPF), which convenes annually under the auspices of the Economic and Social Council to oversee the follow-up and review processes and the implementation status of the Agenda at the global level [7].

HLPF will be informed by the annual Sustainable Development Goals progress report, which will be prepared by the United Nations Secretariat, in cooperation with the United Nations system and which is based on the SDG indicator framework, data produced by national statistical systems and information collected at the regional level [8]. In addition, every four years an independent group of scientists will prepare a Global Sustainable Development Report, focused on the science-policy interface, to inform the HLPF [9]. Regional and national implementation mechanisms, based on regional and national sustainable development strategies, will support the review mechanism at the global level. Various other organizations have launched efforts to support the implementation process, such as the "Sustainable Development Goal Index and Dashboard", prepared by the Sustainable Development Solutions Network and the Bertelsmann Stiftung, which provides SDG base data at the country level [10].

3. Space solutions supporting the 2030 agenda

Space technology is one of the technologies that will be essential for successfully implementing the 2030 Agenda. Several space-related organizations have published documents or undertaken studies that assess how space applications can contribute to achieving the SDGs. Among them are the European Space Agency (ESA) [11], the European Space Policy Institute (ESPI) [12], the Group on Earth Observations (GEO) [13], the Committee on Earth Observation Satellites (CEOS) [14] and DigitalGlobe, in collaboration with UNOOSA, GEO and the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) [15]. Information and Communications Technology (ICTs) is also making use of space technology, satellite telecommunications and space-based positioning, navigation and timing services [16].

Space technology can support the 2030 Agenda implementation in two ways:

a) By providing data, information and services that directly or indirectly contribute to achieving particular SDGs.
b) By providing data and information on particular SDG indicators that allow us to assess and measure the status of the implementation progress.

One of the key lessons learned from implementing the MDGs was the lack of availability and access to reliable data. The new SDG framework is addressing this issue, by stressing that the 2030 Agenda will mobilise the data revolution for sustainable development [17].

However, as of today, there is no coordinated effort among space-related organizations to systematically integrate space-based solutions into the implementation mechanisms of the 2030 Agenda.