

ESCAP, *Item 8*

Space and Sustainable Development

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Thank you, Chair.

The “SPACE+ for our Earth and Future”, which is the theme of the 4th Ministerial Conference on Space Applications for Sustainable Development in Asia and the Pacific held in October 2022, encourages the countries in the Asia-Pacific region to transcend conventional space applications through augmenting digital innovations, including Artificial Intelligence, Internet of Things, cloud computing, and Big Data; enhancing the partnership and effective management of geospatial information, and strengthening the multi-sectoral partnership, and engaging end-users in multiple sectors, in particular, the youth to enhance the use of space technology for peace, sustainable development, and cooperation.

Droughts are major challenges for economies in Asia-Pacific that heavily rely on agriculture due to the region's arid climate, population growth, and the impact of climate change. Since 2018, the Regional Drought Mechanism has expanded to Central Asia through the regional service nodes in China, India and Thailand to Central Asia with support from the Government of the Russian Federation. In 2022, a comprehensive drought information system has been built for Kyrgyzstan to enable effective monitoring and early warning.

In 2022, the ESCAP secretariat responded to capacity-building demands by developing nations through long-standing Regional Space Applications Programme for Sustainable Development. The secretariat has facilitated Indonesia and Thailand on integrated spatio-temporal data applications to monitor progress in achieving the SDGs, with the technical assistance of experts from China, who are bringing in tools and lessons from their own experience in Deqing, China, and the Committee of Experts on Global Geospatial Information Management. The pilot project supports the Goal monitoring and reporting centres in Makassar and Bandung, Indonesia, and the city government of Songkhla, Thailand. The primary stakeholders in these centres are local city governments, who own non-georeferenced sectoral data and statistics, and the objective of the project is to integrate sectoral data into satellite-derived data for timely situational analyses and decision-making.

While the opportunities for applying geospatial artificial intelligence to reduce the risk of disasters are well documented, there are several challenges, including the lack of human capacities, that stymie countries from maximizing the full potential of this technology to reduce disaster risk. Since 2022, ESCAP has been working towards enhancing the capacity of flood mapping experts from national space agencies, disaster management agencies and academia in India, Kiribati,

Pakistan, Sri Lanka and Thailand to use digital technology and geospatial information system to map flood-related disaster hotspots. Experts from these countries were assisted in developing flood hotspots and risk maps using open-sourced and easy-to-use models that use digital technologies, such as artificial intelligence, big Earth data, and cloud computing. In 2023, ESCAP continues to provide support towards validating the tools and further improving them by integrating socio-economic data, land cover, building footprints and machine learning algorithms to perform spatial flood probabilistic risk assessment modelling and mapping. The secretariat is working on leveraging the power of Large Language Models (LLMs) to develop an open-access platform for the disaster-prone countries in Asia and the Pacific can use to monitor better and manage disasters.

Till mid.2023, eight Asian countries are participating in a project being coordinated by the secretariat, which aims to build their capacity to process and develop digitally based applications that integrate surface-based and satellite data generated by Korea's Geostationary Environment Monitoring Spectrometer Satellite to improve operational air pollution monitoring and lead to more accurate and faster anticipation of seasonal air pollutants in Southeast Asia.

Engaging the youth in innovative space applications through biannual Youth Forums is now a permanent feature of the secretariat's programme of work. Each forum is organized around one of the six thematic areas of the Plan of Action. In 2022, the themes were natural resource management (including air pollution), disaster risk reduction and resilience. The Government of Indonesia, ESCAP, and nine partners organized a youth-focused side event at the 10th Asia-Pacific Forum on Sustainable Development titled Future Generation: Multi-Stakeholder Roles for Strengthening Space Applications and Sustainable Development. It highlighted concrete initiatives by the youth and other stakeholders that help accelerate the achievement of SDGs in Asia and the Pacific using innovative space applications for such SDGs as clean water and sanitation, clean energy, and sustainable cities and communities. It also showcased partnerships and initiatives by Governments, UN agencies and universities that inspire and build the capacity of stakeholders, especially young people, to increase their involvement in space activities for SDGs.

Thank you, Chair.