Statement of the Pakistan Delegation at the 67th Session of the United Nations Committee on the Peaceful Uses of Outer Space 19 - 28 June 2024

Agenda Item No. 11 - Space and Water

Thank you Chair,

Freshwater is one of the fundamental requirements for terrestrial life and is being depleted at an alarming rate around the world. Developing countries, in particular, are facing severe water scarcity due to multiple factors such as climate change and lack of water resource planning and management. The arid regions of these countries generally receive a nominal amount of rainfall throughout the year, which is mostly wasted due to runoff and salinization.

Moreover, water management is also a complex subject involving numerous interconnected disciplines and various direct and indirect factors. These include rapid and unplanned population growth, urbanization, industrialization, lack of storage infrastructure, reusability, and above all, human behaviour and lifestyle. Freshwater, which is scarce yet vital, is becoming even scarcer by the day. Experts warn that future freshwater scarcity may lead to conflicts or even hostilities amongst states if concerted steps are not taken.

Mr. Chair

Continuous monitoring and efficient use of water resources are crucial for effective water resource management and the prevention of natural disasters like droughts and floods. Space technology is renowned for its synoptic and wide geographical coverage and system efficiency. Geospatial technologies, when augmented with ground observations, serve as an effective tool for water resource management. The Pakistan National Space Policy underscores the vital role of Satellite Remote Sensing (SRS) in the management of water resources. Key applications include monitoring surface water resources, irrigation networks, and watershed management. These measures are critical for formulating national strategies for sustainable water usage and addressing water scarcity challenges.

Mr. Chair

Space for Water resources management is the one most important applications area beside food security in view of the ongoing climate change impact on precipitation patterns in Pakistan. SUPARCO, being the national space agency, utilized space based information for a number of national level projects including mapping of comprehensive glacier inventory, mapping and monitoring of surface water, irrigation network asset management and monitoring etc.

Pakistan is pursuing collaborative research with Institute of Tibetan Plateau, Chinese Academy of Sciences (ITP-CAS) under Third Pole Environment (TPE) framework to study atmospheric composition, climate change patterns and their impacts on snow cover and glaciers across Hindukush-Karakoram-Himalaya (HKH) range in Pakistan since 2010. A "Glacier Atlas" which comprises of a comprehensive inventory of glaciers in Pakistan using historical satellite imagery has been developed. Installation of stakes for glacier mass balance studies, automatic weather stations for high altitude data recording and river flow measurements for hydrological studies are also part of the collaboration. So far, ten joint field expeditions have been undertaken jointly with ITP-CAS in the HKH region. Other studies such as Glaciers inventory of Pakistan, temporal glacier monitoring/ assessment, and glacier mass balance study were also conducted.

Furthermore, SUPARCO is involved in coastal flood hazard mapping, identification of potential fishing zones, monitoring and mapping of oil spill events, and impacts of climate change on sea level rise, coastal erosion/ accretion and land subsidence along ~1000 km coastal belt of Pakistan. For the purpose, a collaborative project with National Institute of Oceanography (NIO), Pakistan has been persuaded since 2022 to assess sea level rise, coastal erosion/ accretion and land subsidence along Pakistan coast and their socio-economic impacts.

Through the use of space applications, large scale spatial data can be used to support conservation and sustainable management of water resources.

I thank you.