

**Check Against Delivery**  
**Agenda Item No10: Space and Water**

**Mr.Chairman and distinguished delegates**

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

**Mr.Chairman**

Water management is a complex subject consisting of myriad disciplines interconnected whereby various direct and indirect factors are at play.These include most notably rapid and unplanned population growth, urbanization, industrialization, lack of storage infrastructure, reusability,and above all human behavior and lifestyle.Freshwater which is scarce yet so vital is becoming scarcer by the day. Experts are of the view that scarcity of freshwater in the future may result in armed conflicts or even wars among the countries if concerted steps are not taken.

**Mr.Chairman**

Continuous monitoring and efficient use of water resources is vital for effective water resource management and prevention of natural disasters like droughts and floods. Space technology is best known for its synoptic and wider geographical coverage and system efficiency. Geospatial technologies act as an effective tool for water resource management,particularly when augmented with ground observations augmented.

**Mr.Chairman**

Pakistan is facing serious water insecurity and has been declared amongst the water-scarce countries in the world. Therefore, efforts are in hand to properly and efficiently monitor and use available water resources of the country. SUPARCO, as National Space Agency, is intensively working to harness space technology applications to address issues of water management. SUPARCO has leveraged remote sensing

technologies to monitor and manage water resources effectively. Satellite imagery and data have been utilized to assess the availability, distribution, and quality of water resources, enabling informed decision-making processes. A number of major projects in this area are being carried out which include the development of geospatial systems for irrigation management, river, and flood mapping, vulnerability assessment studies for early response and damage mitigation measures, seawater intrusion mapping, and groundwater modeling.

**Mr. Chairman**

SUPARCO has developed a remote sensing and GIS based system titled, **Development of Geo-database for Monitoring the Improvement of Water Courses under National Program for Improvement of Watercourses (NPIW)** for monitoring the progress of watercourses lining project in Sindh province. The system comprised mapping of irrigation network down to the level of watercourses using SPOT 2.5m pan-sharpened satellite imagery, development of customized GIS solution, geodatabase and a communication component to transfer data collected at watercourses by field monitoring teams directly to main server via GPRS using GPS enable iPAQ. The developed system is capable of collecting and disseminating field data, updating records, generating reports and thematic maps. The system not only caters the current / daily requirements but also allows significant capability for future enhancement including the incorporation of other attributes such as soil classification maps, cropping pattern in command areas of watercourses etc, in order to address the needs of agricultural activities. System has been completed and is currently operational for Sindh, Punjab and Khyber Pakhtunkhwa Provinces.

**Mr. Chairman**

SUPARCO has also carried out an analytical study titled, **Monitoring the Construction of 100xDAMS in Balochistan using Satellite Imagery** for monitoring the construction status of 100xDams in Balochistan using satellite remote sensing technology and ancillary data provided by the irrigation department, Govt. of Balochistan. In this study, SUPARCO analytically delineated the work progress using multi-temporal data of various satellite sensors. The observations regarding construction activities (including concrete structures, protective embankments etc.) at specified dam sites were recorded. In order to study the long term impacts on landuse / landcover, it is proposed that satellite imagery based monitoring may be carried out biannually. In addition to that,

the long term monitoring would also help for analyzing the impacts of the dams on development of agriculture land and resultant socio-economic / environmental benefits.

**Mr.Chairman**

These projects represent a few of the many endeavors undertaken by SUPARCO in collaboration with national and international partners. Pakistan remains committed to leveraging space technology and its applications to address water-related challenges, not only domestically but also through regional and international cooperation.

My delegation believes in the imperative use of space technology applications for the optimal utilization of available water resources. In this regard, SUPARCO is in harmony with the latest developments and techniques of space technology in the domain of water resource management for the socioeconomic development of the country.

**I thank you.**

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