# SPACE FOR SGD 6: AN OVERVIEW OF GLOBAL INITIATIVES

MUSTAPHA IDERAWUMI Space Industry Analyst Space in Africa

Water-ForCE



# PRESENTATION OVERVIEW







#### Introduction

Increasing adoption of space-based technologies for water management

#### **Global initiatives**



#### INTRODUCTION

Water is a primary element for sustaining life on the planet as humans and other living organisms require it for survival. However, water management is complex as it requires considerable diverse and accurate data. Space technology, via Earth observation, offers multiple applications that can be leveraged to ensure water management and conservation. Furthermore, space technologies are increasingly utilised globally in the fight for universal access to safe water and are paramount for the achievement of SDG 6. To put things into perspective, in 2020, 129 countries and territories were not on track to meet the target for implementing integrated water resources monitoring and management by 2030.

### INCREASING ADOPTION OF SPACE-BASED TECHNOLOGIES FOR WATER MANAGEMENT

Space technology (Earth observation satellites) is leveraged to improve investigations into the global water cycles, map watercourses and build early warning systems to mitigate the effects of floods, landslides, storms and droughts. This is increasingly utilised globally in the fight for universal access to safe water. Also, the traditional barriers (such as the cost of building and launching satellites) to the access and usage of satellite data are reducing as technological innovations are opening new doors to the management and delivery of important information to a broader audience.

Space4Water Project

UNOOSA partnered with the Prince Sultan bin Abdulaziz International Prize for Water (PSIPW) in 2018 to promote the use of space-based technology for increased access to water. The space4water portal is a comprehensive repository of resources that have helped to create an enabling environment for leveraging space technologies and space-based solutions to improve water management, monitor SDGs and indicators directly or indirectly linked to water, facilitate improved water use and water resource sharing globally, and assist in related disaster management.

Space4Water Project

Examples of projects accessible within the Space4Water portal include

• Airbus' OneAtlas;

• JAXA's Global Change Observation Mission;

 Water Accounting by UNESCO's Institute for Water Education (water resource planning, water allocation);

• G3P(Global Gravity-based Groundwater Product) by the International Groundwater Resources Assessment Centre

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#### Hyperspectral missions

Several hyperspectral EO missions, for example, NASA's HyspIRI, the Italian Space Agency's PRISMA demonstrator, the German Space Agency's EnMAP mission, and India's HySIS (Hyperspectral Imaging Satellite), offer advancements in spatial resolution of up to 30 m, more frequent revisit times and opportunities in the data collection of both water quality and availability.

 NASA's Gravity Recovery and Climate Experiment Follow-On (GRACE-FO)

NASA partnered with the German Research Centre for Geosciences (GFZ) to launch the GRACE Follow-On mission in 2018 to test a new technology designed to significantly improve the already remarkable precision of the GRACE measurement system. In addition, GRACE-FO continues to monitor changes in ice sheets and glaciers, underground water storage, the amount of water in large lakes and rivers, and changes in sea level to provide a unique view of Earth's climate.

#### CONCLUSION

Water can be both a key and a limiting factor to economic survival and poverty alleviation. Thus, water conservation and protection are essential aspects for managing Africa's water resources. However, water sustainability is essential to achieve many of the SDGs, particularly Goals (3, 6, 7, 11, 14, 15 and 17) but is interconnected to all the Goals. Similarly, the SDGs are interwoven as such; to realise a positive result from SDG 6, they must be addressed collectively, as a unit.

Lastly, the world needs to leverage space technologies to transform how it manages its water resources and delivers water and sanitation services for humankind. In addition, urgent action is necessary to overcome this global crisis, as it affects all countries around the world, environmentally, socially and economically.



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