

EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Applications and Economic Benefits (5)

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11TH ANNUAL SPACE GENERATION CONGRESS: EARTH OBSERVATION SESSION REPORT ON
SPACE APPLICATIONS FOR WATER MANAGEMENT

Abstract

Water is one of the most fundamental resources, needed for drinking, agriculture, sanitation and industry. Due to its vitality, the issues and practices of water resource management continue to be a rising challenge for stakeholders and decision makers. Space-based Earth Observations (EO) is a valuable technology to efficiently monitor the Earth's resources. It is beneficial for assessing the water cycle on local, regional and global levels and in providing information (with peaceful objectives) for events that may span the borders of multiple countries. A great number of space-based technologies such as land and marine observation, along with weather satellites, are available and allow for the precise monitoring and measurement of water resources and factors that influence the water cycle and inform water management.

This paper focuses on EO applications for water management related to consumption, agriculture, and safety. Accessing clean water and monitoring water quality and resources are vital to the consumption component. Improving or enhancing agricultural productivity and benefiting from ecosystem services are vital to the second focus area of agriculture. Enhancing water-related disaster (e.g. floods and landslides) management and improving sanitation fall within the third focus area of safety. The study sought to make concrete connections between EO applications and secure, sustainable access to the basic living necessities such as food, water, and shelter. The analysis identifies the importance of utilizing EO for water management by assessing the current global situation and the perspectives of stakeholders, decision makers, international organizations, the public, and the commercial sectors. The importance of stakeholder awareness of space capabilities and of their cooperation in water management is underscored. Finally, the paper presents four main recommendations on ways to improve or enhance the use of EO in water resource management.

This study was undertaken during the Space Generation Congress of the Space Generation Advisory Council in September 2012. The final paper represents the ideas and the recommendations of representatives of the young generation from more ten countries.