

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

Author: Mr. George Dyke  
Australia, gdyke@yahoo.com

Dr. Stuart Gill  
The World Bank, United States, sgill@worldbank.org  
Mr. Stanislaw Ostoja Starzewski  
Novanano SAS, France, stanislaw.ostoja@novanano.com  
Ms. Fatoumata Kebe  
Université Pierre et Marie, France, fatoumata.kebe@gmail.com

APPLICATIONS OF EARTH OBSERVATION TO DISASTER RISK MANAGEMENT

**Abstract**

The field of disaster risk management is relatively new, and takes a structured approach to managing uncertainty related to the threat of natural and man-made disasters. This includes risk assessment and the development of strategies to mitigate disaster risk using managerial resources. In this paper we discuss how the increasing availability of quality Earth observation data in combination with the information revolution - powered in part by Silicon Valley – could contribute to disaster risk management.

The paper presents the results of a project conducted by an international an interdisciplinary team of experts at the 2009 session of the International Space University in NASA Ames Research Center (California, USA). The aim is to explore the combination of current, planned and potential space-based Earth observation activities, the emergence of powerful new Internet based data management tools and how this combination can support and improve the emerging field of disaster risk management. The question addressed is how the link between the rich and voluminous Earth observation data sources and strategic investments and development decisions can be strengthened in order to optimize disaster risk mitigation.

The starting point of the project was the World Bank's Comprehensive Approach to Probabilistic Risk Assessment (CAPRA) program, focused in Central America. This program was used by the team as a test bed to analyze current space technologies used in risk management and to develop new strategies and tools to be applied in other regions around the world.

The paper provides recommendations on how existing space-based Earth observation missions and tools can be better applied to the field of disaster risk management, identifies where gaps exist in current space-based Earth observation missions and tools, and defines possible missions, data products or methods that may address those gaps. Finally, further recommendations are given for future international planning in order to implement space technologies and global integrated teams for disaster risk management.