The earth observation data in supporting global change research and data sharing effort in China

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The Earth system is undergoing severe environment challenging, especially over the last ten years, along with the global climate change, that results to the sea level rising and the increasing frequency of extreme weather events. The society is depending on the observation data to understand the different changing factors of earth system and to make decisions for adaptation and mitigation measurements.

Recently, at the Rio+20 conference, the benefit of the earth observation data (both remote sensing and in-situ data, and reliable geospatial information), for the global environment issues has been highlighted.

The earth observation data plays a critical role to the global changing research, and which is intensive, dynamic, multidisciplinary, long time series, in big volume and consequently computing power consuming. Hence, its coordination, access and processing is big challenge to the geoscientists and decision makers. Group on Earth Observations (GEO) is addressing this issue by building a global environmental observing and monitoring system, the Global Earth Observation System of Systems (GEOSS). GEOSS will be a global system of integrated and interoperable earth observation and monitoring systems, coordinating different data. It will be built across nine Society Benefit Areas (SBAs), featured by the GEOSS Common Infrastructure (GCI), and the GEO-Data CORE principles.

In support of the Global change research, GEOSS facilitate the exploration of essential variables, such as Essential Climate Variables (ECVs) developed by the GCOS, GOOS, and GTOS, the Essential Biodiversity Variables (EBVs) in ecosystems and biodiversity and Global Changing Sensitive Factors (GCSFs). These product oriented variables, seek for high accuracy and sustain data archiving and sharing system.

China walked through decades' global changing research using earth observation data, has set up data archiving and sharing online systems locally and specifically, such as the Data Sharing Information of Earth System Science, International Scientific Data System Platform, China Center for Resource Data and Application, Satellite Environment Center, Fengyun Satellite Data Web-Service, Data Sharing Plan for Earth Observation (Center for Earth Observation and Digital Earth, CEODE) and China Meteorological Data Sharing Service System, Ocean Science Data Sharing Center. Now, China works towards the development of a regional data sharing strategy appears for more open and inclusive data policy and cooperation principle for the interoperable data sharing system.

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