



Global projects as pre-cursors to cryospheric essential climate variables

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The European Space Agency (ESA) is running within its Data User Element a series of projects with global dimension addressing mapping and monitoring of various geophysical parameters. The GLOB series has been a sound baseline for the recently approved ESA initiative on Climate Change (CCI) for “Global Monitoring of Essential Climate Variables” (ECV). Projects like GlobGlacier, GlobSnow and GlobIce are pre-cursors in achieving a long term monitoring of cryogenic ECVs.

- The GlobGlacier project will establish a service for glacier monitoring from space, which aims at providing a global picture of glaciers and ice caps, and their role as ECVs.
- The GlobSnow project aims at generating 15-year global datasets of the Area Snow Extent and the Snow Water Equivalent from existing satellite ESA data records.
- The GlobIce project explores ESA’s SAR archive and develops an information system on high resolution sea ice dynamic. Validated sea ice motion, deformation and flux measurements will be produced over large areas.

During the last decade the Parties to the UNFCCC have placed responsibility for defining and specifying the requirements for observations relevant to climate change with the Global Climate Observing System (GCOS). GCOS has issued two Adequacy Reports to the UNFCCC on the global climate observing systems, and in its second report in 2003 GCOS established a list of Essential Climate Variables (ECV) that are both feasible and have a high impact on the UNFCCC requirements. Each ECV is derived from a Fundamental Climate Data Record (FCDR). The FCDR is a long-term data record, involving a series of instruments, with potentially changing measurement approaches, but with overlaps and calibrations necessary to allow the generation of homogenous products, providing a measure of the intended variable that is accurate and stable enough for climate monitoring.

The objective of this new ESA programme is to realize the full potential of the long-term global Earth Observation archives as a significant and timely contribution to the ECV databases required by UNFCCC. It has been initially funded by the ESA member states with 75 million for the next six years.

The talk will inform about achievements within the three cryospheric Glob projects paving the way on long term monitoring and linking towards ESA’s new Climate Change Initiative and its implementation.