THE SIBERIAN EARTH SYSTEM SCIENCE CLUSTER (SIB-ESS-C)

ABSTRACT

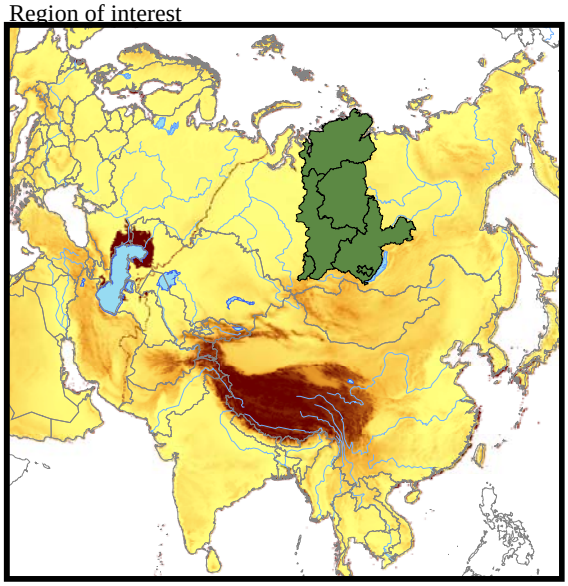
With the recent advancements in information technology especially in the field of spatial data infrastructures new opportunities became available to the earth science community to efficiently share data, results and also applications over the World Wide Web using standards published by the World Wide Web Consortium (W3C®), the Open Geospatial Consortium (OGC™) or the International Organization for Standardization (ISO). Based on these technologies the Siberian Earth System Science Cluster (SIB-ESS-C) will be developed as a spatial data infrastructure for remote sensing product generation, data dissemination and scientific data analysis.

The Siberian Earth System Science Cluster currently being established at the University of Jena (Germany) is the follow-on activity to the EU funded SIBERIA-II project (Multi-Sensor Concepts for Greenhouse Gas Accounting of Northern Eurasia, EVG2-2001-00008). SIBERIA-II was a joint Russian-European remote sensing project that improved greenhouse gas accounting over a 300 Million ha area in the central Siberian region. This area represents a significant part of the Earth's boreal biome which plays a critical role in global climate change and has been defined as one of IGBP's Boreal transects representing a strong climate change hot spot in Northern Eurasia. The project lifetime was from January 2002 until December 2005. The overall objective of the SIBERIA-II project was to demonstrate the viability of full carbon accounting including greenhouse gases (GHG) on a regional basis using state-of-the-art environmental methods and advanced remote sensing technologies. The results showed that the Russian boreal forest is a carbon sink to increased CO_2 in the atmosphere; however its sink capacity is smaller than earlier publications indicated because of the underestimated impact of land cover disturbances.

In the initial phase of the SIB-ESS-C project, data sets and value-added products created within the SIBERIA-II project will form the basic set of products to be disseminated. These products include regional maps of land cover, fire induced disturbances, phenology, snow depth, snow melt date, onset and duration of freeze and thaw, LAI and others. Most of these products are available for several years and cover the entire SIBERIA-II region. A major goal of SIB-ESS-C is to continue product generation in order to build up time series for environmental monitoring and as input parameters for earth science models. As research is advancing and new algorithms and data products are being developed additional data sets of the region shall be included. In order to provide a comprehensive spectrum of data sets relevant for earth systems research collaboration with other data providers and research organisations to share data sets is highly desired.

The Siberian Earth System Science Cluster is being supported by the Friedrich-Schiller University Jena (Germany) for the period commencing January 2006 until December 2010.

Region of interest



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