

## Background Material on GEO and EuroGEOSS

The Group on Earth Observation (GEO) at the 2007 Cape Town Summit declared that coordination at national, regional and global levels...will be vital for upgrading and expanding Earth observation and building the capacity of individuals, institutions and systems, particularly in developing countries.

The EuroGEOSS Project addresses this and other issues raised in the Summit Declaration in order to provide improved information for decision making in the GEO “societal “benefit areas” (SBAs)(see [www.earthobservations.org](http://www.earthobservations.org)). Complex decision-making requires data from diverse domains to be synthesized into coherent information. Yet specialties such as geology, biodiversity and drought have evolved their own approaches and processes for data analysis and modeling.

EuroGEOSS demonstrates the added value to the scientific community and society of making existing systems and applications interoperable and used within the GEOSS framework. The project will build an initial operating capacity for a European Environment Earth Observation System in the three strategic areas of Drought, Forestry and Biodiversity. It will then undertake the research necessary to develop this further into an advanced operating capacity that provides access not just to data but also to analytical models made understandable and useable by scientists from different disciplinary domains.

**The focus of the first year of the project is on European systems.** Interoperability of national systems is being addressed by the INSPIRE Directive 2007/2/EC adopted in March 2007. This establishes an infrastructure for spatial information in Europe to improve the accessibility and interoperability of spatial needed for environmental policy making and monitoring. The successful implementation of this Directive will go a long way towards overcoming existing inefficiencies relating to the use and usability of spatial data held by public authorities.

The INSPIRE directive provides a foundation, upon which practical implementation of information systems can be built. This must be done in stages and the EuroGEOSS has selected three disparate yet inter-related Societal Benefit Areas of forestry, drought and biodiversity for developing interoperability methodologies and demonstrations. In doing this, EuroGEOSS will:

- address complex scientific challenges that the fragmentation and the cultural diversity of Europe presents (syntactic and semantic interoperability, data heterogeneity, multilingual issues, social and economic aspects...) through research and innovative methods.
- offer initial operating capacities in three Societal Benefit Areas to GEOSS and establish a bridge between them through a multidisciplinary approach and crosscutting research issues

- develop a framework for model interoperability to allow the discovery and access not only of heterogeneous data and services but also process models. Particular emphasis will be placed on understanding the consequences and statistical validity and error bounds of models that use conflated data sources involving differing source data resolutions.

Through the initial focus on European systems, EuroGEOSS is addressing a critical European need for comprehensive data and information that go beyond the local and national capabilities. As recognized in the last decades with issues of climate change and global scale processes, even this may not be enough. Thus, **in its next phase, EuroGEOSS will begin to address the interoperability of data and information in a broader context.** The project has identified Africa as a region for emphasis. The three Societal Benefit Areas of the project have challenges in Africa, in some cases more severe than in Europe. The solutions for interoperability and information systems will be applied to a different cultural and infrastructure base. This offers an important opportunity to expand the methodologies and test the robustness of the EuroGEOSS approach.

Within this context, **the EuroGEOSS Capacity Building and Dissemination Work Package is hosting two Conferences.** **The first** provides a forum with the European community. **The second** addresses the issues to the broader global community and addresses the opportunities offered by the European project outcomes and possible directions for collaborative globalization of the efforts. **The second conference will be held in Africa.** Specialists from Africa will work with the EuroGEOSS team to identify target developments and applications within the three SBAs that will be the themes for the conference. **The conference is planned for mid 2011** and an announcement of the details and a solicitation for contributions will be posted on the EuroGEOSS web site in the coming months.