WHY TOGETHER

Cooperation of Geological Surveys of Bavaria, Catalunya and Emilia-Romagna

In 1992, the Geological Surveys of Emilia-Romagna, Bavaria and Catalunya started an innovative collaboration in the fields of Earth Sciences and Information Systems. Conferences in Bologna (1994), Barcelona (1997), München (2000) and Bologna (2003) entailed an effective cooperation across Europe between the Regional Geological Surveys, through their respective scientists and technicians. The congresses brought together numerous participants coming from many European countries, and even from Northern Africa and Asia, and produced important innovations and solutions regarding geo-environmental topics and information systems.

Effects of climate change, increase of soil degradation, quality and quantity of groundwater, extent of hydrological risks and popularising geology are some of the topics of our common interest. The main aims of our collaboration are:

- to develop an integrated and multidisciplinary approach to applied Earth Sciences;
- to increase the reliance on the information systems for management of geo-environmental data and the elaboration of thematic maps.

We strongly believe that integrating geoscientific knowledge represents the first step towards sharing of territorial and geo-environmental information between European regions and countries. To support this purpose, the European Commission and EuroGeoSurveys participated in the Scientific Committees of the last meetings.

Extended public interest in natural hazards, as floods, landslides and earthquakes, contributes to define the priorities of the Geological Surveys. Natural hazard maps are powerful tools to increase our knowledge and to reach a better understanding of the hazards which Europeans are potentially exposed to, and of the importance of prevention as well. Compiling risk maps of Europe and the Circum-Mediterranean area requires common approaches and definition of standards. It has been proved that our congresses are an outstanding opportunity to progress towards this goals.

The Fifth Congress, with the subheading "Earth and Water", will be held in Barcelona on 13-15 June 2006. It will focus on the effectiveness of geological, hydrological and soil surveys, on public needs and technical and administrative initiatives, on executing European, national, regional and local directives, and on the requirements of land planning and sustainable development.

See you

5th European Congress on Regional Geoscientific Cartography and Information Systems

earth AND water

● **Barcelona | Catalonia, Spain | june 13th - 15th 2006**

Catalunya
www.icc.es

RegioneEmilia-Romagna
www.regione.emilia-romagna.it/geologia

Freistaat Bayern
www.geologie.bayern.de

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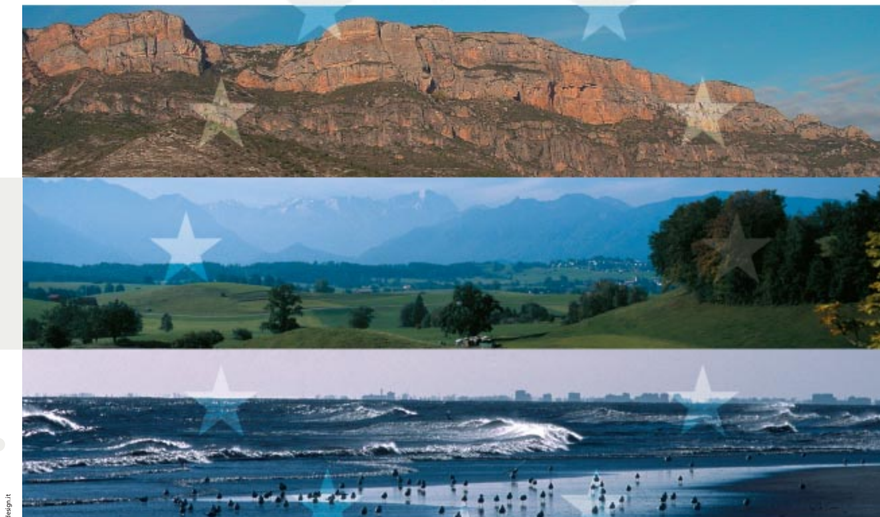
European Regions for Earth Sciences



Catalunya

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popularising geoscience

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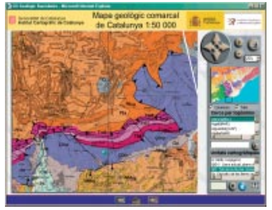
Internet is the most used and accepted medium for fast information spreading to a wide community. On **our web sites** you will find geological maps, general geological data and information on many geoscientific questions, as the origin of the Earth, the evolution of life, natural resources, geo-hazards and our geological heritage.

Interactive tools make geologic information easier to understand. Information technologies allow, for instance, the data contained on a traditional paper map to be combined with interactive guides and with other information using attractive and user-friendly visualisation formats. **The interactive geological map of Catalunya** (1:50.000), the CD-ROM "**Pianeta Terra**" for the students of Emilia-Romagna, and the multimedia CD "**Bavarian geological map 1:500.000**" are just few examples on how to make geological information available to the public.



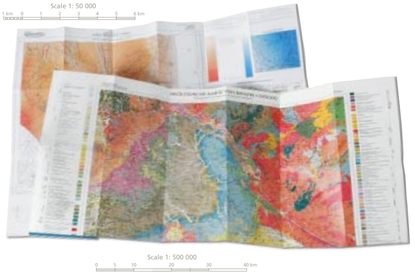
Our **geological heritage** represents one of the most important, yet disregarded, treasures of Nature. Hence, Bavaria, Emilia-Romagna and Catalunya patronise their geological heritage by stimulating responsibility and sensitivity for the environment: The programme **Geologie erleben** reveals to the public 100 Bavarian geotopes representing major steps of the geological history. Emilia-Romagna publishes **maps for field trips** into the beauties of Nature. And in Catalunya, the consortium **GeoCampus** sensitises the public to the origins and history of the landscape of the Pyrenees.

mapping

Scientific maps at different scales are very important means for the economic development and sustainable use of the natural resources. Their geological contents inform about conditions and treasures of the surface and underground.

On basic geological maps on a scale of **1:25.000**, Bavaria, Catalunya and Emilia-Romagna synthesise the geology of their territories.

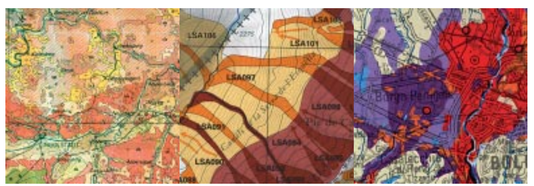
These detailed maps are essential for land planning and to implement sustainable human activities on the territory. A long-range objective is the production of basic geological maps using common standards and methodologies, as a first step to construct a common geo-scientific database.



Geological maps display, store and transfer geoscientific knowledge on occurrences, properties and formation of rocks. Catalunya and Emilia-Romagna publish their general geological maps on a scale of 1:250.000 while Bavaria does it on a 1:500.000 scale. Catalunya and Bavaria also produce 1:100.000 scale maps. Additionally, Emilia-Romagna and Catalunya are involved in the Italian and in the Spanish Projects on Geological Mapping on a scale of 1:50.000.

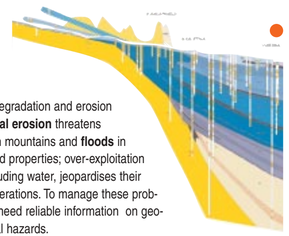
Digital databases allow storing, processing and transferring geological knowledge and facilitate the production of general and thematic geological maps at different levels of resolution. The digital geo-database of Catalunya contains the information related to the 1:50.000 scale maps and is linked with other geographical databases. The digital Bavarian Soil Information System is used as a tool for all purposes of soil conservation by scientists and the public as well. The system contains about 20 million single data from more than 100.000 geo-objects and 900 geoscientific maps of different subjects. Emilia-Romagna arranged a digital geo-database containing the information related to the 1:25.000 scale regional maps and, just for the Appennines, to the 1:10.000 scale maps. Since 1976, the Emilia-Romagna Soil Information System stores a great amount of information on regional soils allowing the production of soil maps on 1:250.000, 1:50.000 and 1:10.000 scales.

hazard evaluation



Natural hazards can cause serious damages to citizens, buildings and infrastructure entailing high economic losses and human casualties. Intensified utilisation of areas formerly considered uninhabitable increases risks. Assessing hazards and minimising risks is one of the main targets to enhance sustainable development and quality of life.

Loss of soil due to degradation and erosion destroys agriculture; **coastal erosion** threatens tourist areas; **landslides** in mountains and **floods** in plains endanger people and properties; over-exploitation of **natural resources**, including water, jeopardises their availability for the next generations. To manage these problems, planning authorities need reliable information on geological settings and natural hazards.



Bavaria, **Catalunya** and **Emilia-Romagna** implement technologies and methodologies, providing knowledge for natural hazard assessment to support planning policies. The role of our Geological Surveys is to collect data in the field, to process data through information systems according to scientific evaluation procedures, to present the results in **hazard maps** and to make knowledge available to society.

Mapping natural hazards is the basis for an integrated risk evaluation, for defining monitoring activities and for implementing mitigation policies. Natural hazard thematic maps are powerful tools for the management of hydrological and other natural risks. Hazard maps are useful for many applications such as to prepare land, urban and emergency plans, to project specific prevention measures and to provide information to the citizens.