Geological surveys' capacity to address economic and social challenges

A piece introducing EuroGeoSurveys, the association of the European Geological Surveys, and its policy work. The organisation is collaborating with the EGU on a science policy workshop at the 2014 General Assembly (The Role of Geoscientists in Public Policy).

Every geoscientist knows that geological data, information, knowledge and expertise are key tools to respond to many of the key social and economic challenges facing the European and global communities in the 21st century. The European society, in particular, faces great challenges for which ecologically, economically and socially sound solutions and scientific advice are required. These challenges include geo-energy, raw materials, groundwater and geohazards.

The various National Geological Surveys are key players to respond to these major geoscientific challenges. They are the national entities responsible for policy support in all subsurface-related survey and management activities, including mitigation and exploration research, vulnerability and risk assessments, forecasts and statistics. As such, the Geological Surveys of Europe – united in EuroGeoSurveys (EGS) – jointly represent the critical mass of knowledge, research capacity and capability, data and facilities needed to fulfil that same role on a European level. As a not-for-profit international organisation based in Brussels, EGS has 31 member countries, also representing some regional surveys in Europe, and an overall workforce of several thousand experts.

EGS aims to play a role in stimulating economic growth, mitigating the effects of climate change, guaranteeing a sufficient supply of food and water, providing a healthy and clean living environment and in protecting EU's citizens against natural hazards. Its mission is "to provide public Earth science knowledge to support the EU's competitiveness, social well-being, environmental management and international commitments". To achieve this, EGS has drafted a vision document which adheres to three pillars. These include a joint research programme with significant impact at EU policy level, creating an information system for Europe, and a focus on building a common European Geological Data Infrastructure (EGDI). EGS' vision is also based on sharing knowledge, capacities and infrastructure to address capacity building through training and participation in multinational and multidisciplinary research, multinational exchange of researchers and of best practices, and sharing of laboratories, facilities and infrastructures. These three pillars are essential for establishing a common European geological knowledge base and providing a geological service for Europe that ultimately will guarantee a common single access point for EU bodies and other stakeholders.

EGS has the capacity to achieve its vision due to its flexible structure and the broad range of scientific fields it covers. The organisation coordinates a number of expert groups and temporary task forces that integrate information, knowledge and expertise deriving from the member countries in fields such as natural hazards, water, soils, energy, mineral resources, marine geology, spatial data, carbon capture and storage, geochemistry, Earth observation and international cooperation. These expert groups have contributed significantly to the definition of some fundamental legislative initiatives and policy provisions within the European Commission. These include the INSPIRE Directive, the Raw Materials Initiative, the Directive on the geological storage of CO_2, the Maritime Policy, the Soil Thematic Strategy, the Water Framework Directive, the Mining Waste Directive, the Resource Efficiency Policy and the Coastal Zone Policy. Moreover the participation of our member geological surveys in a substantial number (over 250 since 1998) of EU-funded Research and Development (R&D) and policy support projects has contributed to solving important societal challenges and promoting sustainable and competitive growth.

New geological knowledge has become essential as it can lead to the discovery and safe and sustainable exploitation of new energy, mineral and other resources. At the same time, knowledge and information on the dynamic geosphere are indispensable in helping European citizens cope with anthropogenic pressures, climate change and natural hazards. They are also key elements in protecting the European environment. The subsurface, including soils and groundwater, is increasingly used and therefore under pressure. Many human activities have positive effects, increasing safety, generating renewable energy or creating valuable habitats. Some others affect the Earth negatively. Essential parts of Europe are facing pollution, erosion, soil sealing and loss of fertility as a result of urbanisation, industrialisation and land-use change. These affect the availability and access to food, drinking water, clean air and other benefits from resources and processes that are supplied by ecosystems for Europe's citizens. Exposure to naturally occurring toxic substances like arsenic, mercury or radioactive materials (e.g. radon) or harmful minerals (e.g. asbestos) may also endanger human health. In short, geological knowledge and information are essential to allow us to make optimal use of the geosphere without compromising it for future generations. Operating according to their legal national mandate, the Geological Surveys of Europe are ideally positioned to operate at EU level through EuroGeoSurveys for the development of geological knowledge and the provision of official and reliable information.

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