

Geosciences for Europe's environment in the 21st century

Ed. F.J. de Mulder & Richard N. Annells

While the 20th century was the era in which mankind learned to travel in the air and outer space, the 21st century will witness dramatic progress in the discovery and utilisation of the subsurface. The national governments of the European Union are developing a shared administration based in Brussels and individual regions will play a more important role in its affairs, particularly in cross-border environmental legislation issues. Since 1984 European geoscientists have developed continental co-operation enabled by successive four-year EU R&D Framework Programmes. In 1995, the Geological Surveys of the 15 EU member countries plus Norway formed the association EuroGeoSurveys to increase their input to EU policy making through a permanent Bureau in Brussels.

In the 21st century Europe geoscientists will initially focus on making integrated databases of subsurface information available across the Web. By 2025 the subsurface conditions of large regions will become 3D visualised and coupled with prediction models. By 2050 Europe will be entirely mapped geologically at the 1:50 000 scale. By 2075 the influence of subsurface behaviour on socio-economic conditions at any spot in Europe will be visible to clients on line. Geoscientific expertise will further focus on smart, sustainable use of the subsurface by applying advanced geo-knowledge for efficient utilisation of the Earth's physical and (bio)chemical potentials. New exploration and exploitation techniques will target deeper levels for new materials and safe waste disposal sites. Geoscientists will become key members of new clusters focused on societal problems in a dramatically changed society.