EGS published a comprehensive Atlas on European bottled waters

European groundwater has no secrets anymore, thanks to the new atlas of bottled water recently published by EGS. The new comprehensive guide, prepared on the basis of analysis of bottled water will allow consumers to make a conscious choice of the best product for their health and taste. The book provides the chemical composition of 1785 bottled water samples, divided into 1247 different sources at 848 locations, from 38 European countries altogether. EuroGeoSurveys geochemists analyzed the chemical composition of European bottled water from a geological point of view.

The samples were purchased in supermarkets during 2008 and subsequently analyzed in one single laboratory. The survey is important, since more than 1900 brands of bottled water are currently registered in Europe and the market is rapidly expanding. The book has been edited by Clemens Reimann, from the Geological Survey of Norway (NGU), and Manfred Birke, from the Federal Institute for Geosciences and Natural Resources (BGR) in Germany, and is the result of the multiannual work of the EuroGeoSurveys’ Geochemistry Expert Group, an international pool of top level European specialists in the field of regional geochemistry, in cooperation with a number of hydrogeologists. Some bottled water samples exceeded the water norms for parameters like Arsenic, Barium, Fluoride, Nitrates and Nitrites and Selenium.

Moreover, the data demonstrates that a common European action level for Uranium in drinking water is urgently needed. As an example, the highest amount of the rare earth elements were found in Norway, the highest Uranium value in the Czech Republic and the highest nitrate value in a mineral water from Slovakia. Overall, however, the editors say that the quality of the analyzed bottled water samples was surprisingly good.

Only very few samples exceeded mineral (or drinking water) action levels. The editors also point out that given the large natural variation for some elements deficiency problems may play an as large or larger role than toxicity.

“As a matter of fact – the editors say – the range in concentration of chemical elements in bottled water represents the range naturally found in European groundwater. The new results from this harmonized overall European survey show an enormous natural variation (up to 7 orders of magnitude for some elements, including uranium) of many elements in water at the European scale”. But the main message from the atlas is really that geology influences the quality of groundwater.

“The atlas is another success story of our Geochemistry Expert Group.

It is evident that it brings a further crucial contribution to the knowledge of the quality of groundwater at the continental scale, and of its strong dependency on the geology of Europe”, says Luca Demicheli, Secretary General of EuroGeoSurveys.
Some important news for European geology comes from Copenhagen, where in September the latest General Meeting of EuroGeoSurveys (EGS) has taken place. On that occasion, the European Environment Agency (EEA) decided to promote probably the most important project on the use of geological spatial data carried out on our continent.

One Geology-Europe, accessible through a web portal hosting the first ever digital geological map of the continent, has developed a common computer language and makes the data available for free. To explain these and other unique characteristics of the project, the EEA has hosted an awareness raising seminar in its headquarters in the Danish capital. A good chance for strengthening the cooperation between EuroGeoSurveys and EEA, that is indeed very important from a scientific point of view, but also opens room for discussions on how to better provide the European decision makers with joint information that can be used to facilitate decisions on land protection and use. In the future they could finally have at their disposal one single intuitive tool for the analysis of geological hazards, such as floods or landslides, health-related issues, such as those connected to the presence of Radon, or the building of infrastructures and waste disposal, among others.

At the meeting, Tim Haigh and Ronan Uhel from the European Environment Agency joined, in a round table, scientists involved in OneGeology-Europe, the Managing Director of the Geological Survey of Denmark, Johnny Fredericia, and the Secretary General of EGS, Luca Demicheli. The discussion laid down the basis for a formal agreement between the two organisations on the use of the contents of the OneGeology-Europe portal by the EEA for the environmental protection of our continent.

The project success is also due to the benefits its future development is expected to provide for the daily lives of European citizens, as shown by the researchers during the seminar. In particular, the book ‘One Europe, One Geology’ provides examples on how geological spatial data can be used to discover what is under EU citizens’ homes or to understand which cultivations are the better ones to grow crops, based on the minerals enriching the soils.
An agreement between EGS and EEA has been signed in Beijing on the 3rd of November. The Agency was represented by Prof. Jacqueline McGlade, Executive Director, while on behalf of EGS the Secretary General, Luca Demicheli, signed the paper “in the area of integrating environmental and geo-scientific data, information and knowledge”.

The general objective of this agreement is to “secure a long-term cooperation in integrating environmental and geo-scientific data, information and knowledge. The specific objectives are to secure awareness and commitment to the provision and use of EGS data and capacities by EEA, promoting the appropriate use of geological data and knowledge in the whole spectrum of environmental issues”.

The agreement says that EGS will provide EEA with “non-exclusive access to the OneGeology-Europe interoperable onshore geological data for all Europe at the scale of 1:1 million. Data can be downloaded for a specific area and they are free in accordance with the OneGeology-Europe Licensing Agreement, signed by EGS data providers”. The other points of the agreement are about the help that EGS will give to EEA in the best exploitation of the data for environmental protection purposes, the cooperation between the parties in order to secure “broader, sustainably free and open access to geological data and information on the Internet”, and thus seeking to extend the cooperation to the areas of “natural resources – specifically groundwater – climate change, natural hazards and geochemistry, and they shall organise specific meetings to address this issue”.

EEA recognises the success of the OneGeology-Europe project

Interview with Tim Haigh, Head of Group GMES (Global Monitoring for Environment and Security) at the European Environment Agency.

Why is EEA keen to have an agreement with EGS for the use of data in the OneGeology-Europe portal?
The OneGeology portal is a key step forward in relation to geological data access. It is all too easy for the achievements of a project to not be fully recognised until well after the project is over and also for the longer term vision to be lost. By having an agreement, EEA wanted to recognise the success of OneGeology-Europe and to help ensure the sustainability of the system. One of the key achievements for EEA is the creation of a digital European geological map at a 1: to one million scale, from distributed sources with a common free and open licence agreement.

How would you foresee a future evolution of the data through the OneGeology-Europe portal to further assist the EEA in the field of environmental protection?
I think that the success of this moment needs some time to be savoured and distilled into priorities for the next steps. However as with many data access achievements, the next steps are probably on harmonisation, improving the inventory of available data and ensuring operational sustainability of the service. Harmonisation can cover many areas, but I think that it will important to address two aspects: the first are gaps in terminology and definitions between geo-science and information in support of policy processes, such as for the water framework directive or soil strategy.

The second aspect are the type of issues that can be seen at national borders. Neither of these are easy to address, but some conceptual bridge-building will lead to a much wider use of geological data in support of the environment.

“in-situ” data are essential for the GMES services to meet expectations. Which role could geo-scientific data play in the short-term?
GMES services are operational from 2011 onwards, which is a major milestone in itself. At first the focus will be on the Land and Emergency services, both of which include geo-scientific data in their in-situ requirements. In Europe, the emergency service is activated around 30 times a year to support issues such as landslides, earthquakes, flooding, or technological disasters. Naturally geoscientific data can support some of these disasters, and that is where OneGeology-Europe comes in.
From map to apps: European geology without frontiers

On line OneGeology-Europe: the first shareable multilingual European web geoportal.

Progress on a continental scale in preventing natural disasters, exploring for resources and identifying risks to human health!

OneGeology-Europe, the first ever multilingual and digital internet geological map of Europe, is on-line. The new portal provides a comprehensive overview of Europe’s subsurface. It improves territorial planning at a European level and empowers citizens to discover not just their own country’s geology, but also that of the other nations of the continent.

The project, started in 2008 and co-financed by the European Commission with 2.6 millions euro, has built a system to make geological map data freely available on the internet to anyone. Thanks to a ground-breaking one click licensing agreement by all 21 nations, it tackles the enormous challenge of harmonising decades of scientific data from 21 different Member States, the project has also joined the geology of our old continent through one single computing language. All the data are “interoperable”, which means that users, whoever they are, whatever they are and whatever computing system they use, can now share digital geological map data.

Today, with only one standard web browser and regardless of location, one simple click of the mouse on the area of interest is enough to obtain geological information in more than 12 languages. This removes a major barrier which previously made access to environmental information extremely difficult.

The extractive industry, institutions, insurance companies, engineers or European citizens can now view data related to rocks and the project prepares the way for maps of the highest national resolution (50 metres) to be placed on-line.

“Geology and rocks don’t respect man-made political frontiers – says Ian Jackson, who coordinated the project – and nor do the environmental problems and natural resources that go with them. With our changing climate – he continues – there is an even more urgent need for Europe and its citizens to have coherent and comprehensive data about our environment, easily and freely available to those who need it.”

The European Environment Agency will be the first institution to exploit the huge potential of freed by OneGeology-Europe, thanks to an agreement with EuroGeoSurveys. The Agency has now available for the first time the capability to assess at a continental scale solutions to problems such as floods, habitat protection, coastal erosion and pollution.

The availability of Europe-wide data provides a springboard for technological breakthroughs, making geology to cross not just European territorial borders, but also technological ones: the information can be made directly accessible via mobile phones.

“This project has taken cutting edge internet mapping technology and standards – François Robida, one of the technical leaders of the project explains – and applied it to geological data distributed across a whole continent. It is the first example of a multi-national deployment of environmental data on this scale. Making available geological data like this opens up a host of possibilities – some of which are already in train – including a geological App for your mobile phone”

To complement the internet development, the team have also produced a richly illustrated book, One Europe One Geology, which describes the use and application of geological knowledge across our continent.

Geology: why is it so important?

Are we capable of predicting where an earthquake is going to strike? Are we able to determine where flooding or landslides will take place? How much longer will we be able to rely on energy sources such as petroleum and natural gases, mineral and geochemical deposits, which are so important for our Society?

Geology is able to provide the answers to these questions, and because of the continuous development of sophisticated science and technologies we have dramatically increased our understanding of the rocks beneath our feet. In order to anticipate risks and create safe places in which to live, it is vital that we know about our planet and geology is fundamental to our daily lives.

It is our Earth which provides the materials necessary for our development. Water – the prerequisite for life – is found and abstracted using geological knowledge.

Rocks and minerals have always been exploited as construction materials. It is no coincidence that the essential stages of human evolution are marked by periods such as the “Bronze age” or the “Iron age”, with unmistakable reference to materials discovered by mankind over time. Mankind’s ability to come together in social units and make technological...
progress would have been impossible without materials from the ground. Due to the action of geological processes, elements such as aluminum, platinum, iron, mercury, zinc, etc. accumulated and could be extracted from the rocks.

Through geology, we can identify and exploit energy sources, such as coal, uranium, oil and natural gases. Sedimentary rocks hold oil deposits that originate millions of years ago and are today refined to fuel our cars, ships and airplanes. Geological materials were the basis for the industrial revolution and the enormous improvement in the standard of living.

Today the science of geology is contributing to alternative energy sources, such as geothermal and hydroelectric energy, and playing a crucial role in sustainable development.

Geology is essential in indicating where not to build areas of natural risk such as on volcanic or tufaceous terrain, or where particular concentrations of gas are found, or even not to live in low ground which may flood.

Geology's influence extends to our diet! The taste and quality of all that we eat and especially, drink, are influenced by the rocks. Some of the best wines are cultivated on sandy or volcanic lands, such as in the Castelli Romani, the Langhe or the zones on the slopes of Mt. Etna in Italy, while the quality and the taste of beer are strongly influenced by the water used to produce it.

The many varieties of beer in Great Britain owe much to their geology and groundwater.

Onegeology-Europe Project

OneGeology-Europe is a project funded under the European Commission’s eContentplus programme for 2008 – Best Practice Networks: Geographic information. The overarching objectives of the eContentplus programme are to make digital content in Europe more accessible, usable and exploitable, facilitating the creation and diffusion of information, in areas of public interest, at Community level. The eContentplus programme is intended to have an enabling role.

OneGeology-Europe has 28 partners from 21 European nations. 20 of these partners are national geological surveys, 7 are users of geological information and one partner organisation is expert in the legal aspects of digital data. A list of the participants is included in an Annex.

One of the prime aims of OneGeology-Europe has been to test and advance the implementation of a new European Directive – INSPIRE – which was brought into force in May 2009. This EC Directive requires each Member State to make available and share Public Sector spatial environmental data to enable better delivery of policy and actions across Europe.

The OneGeology-Europe web portal can be accessed at http://www.onegeology-europe.eu.

There is an illustrated book describing the project: One Europe One Geology. ISBN 978-0-85272-668-6.

Copies supplied on request. A variety of graphics and images from OneGeology-Europe, covering the data, the internet portal and the applications of geological knowledge can also be provided.
EGS reinforces its role in Beijing

A very important outcome, for EGS, from the attendance at the 2010 GEO Beijing Ministerial Summit that has been celebrated at the beginning of November in the Chinese capital.

Apart from the signature of the agreement with the EEA about the OneGeology-Europe project data, EGS has managed its own booth, inside the European Union area, where The Secretary General, Luca Demicheli, met diplomats, scientists, and EU executives, like the Director of the European Environment Agency (EEA), Prof. Jacqueline McGlade, and the Vice President of the European Commission, Mr. Antonio Tajani, Commissioner for Industry and Entrepreneurship.

People from EGS attended to the booth during the entire event, showing the visitors video slides about EuroGeoSurveys main activities. In the final day of the summit, during the plenary, EuroGeoSurveys was assigned a very important task which reafirms the importance of the organization role: in fact, EGS was accepted as co-chair for the GEO Science and Technology (S&T) Committee, that engages the scientific and technological communities in the development, implementation and use of a sustained GEOSS in order to ensure that GEO has access to sound scientific and technological advice.

In fact, the Group on Earth Observations is coordinating efforts to build a Global Earth Observation System of Systems, or GEOSS. GEO was launched in response to calls for action by the 2002 World Summit on Sustainable Development and by the G8 (Group of Eight) leading industrialized countries. These high-level meetings recognized that international collaboration is essential for exploiting the growing potential of Earth observations to support decision making in an increasingly complex and environmentally stressed world. GEO is a voluntary partnership of governments and international organizations.

At the moment, GEO’s Members include 85 Governments and the European Commission.

In addition, 61 intergovernmental, international, and regional organizations with a mandate in Earth observation or related issues have been recognized as Participating Organizations.

Dr. Peadar McArdle retirement

Dr. Peadar McArdle, Director of the Geological Survey of Ireland, retired at the end of 2010 after a long, distinguished career. Dr. McArdle, who successfully directed GSI for almost 20 years, is one of the founding fathers of EGS, and his invaluable support has been instrumental to the progress of EuroGeoSurveys. We are most grateful to Peadar for the tremendous and always enthusiastic contribution provided over the years.

New EuroGeoSurveys President

Since January 2011 Dr. Marko Komac, Director General of the Geological Survey of Slovenia, is the new President of EuroGeoSurveys.

Prof. John Ludden, Executive Director of the British Geological Survey, who provided EGS with a terrific leadership during his mandate, will continue serving EGS by leading the implementation of its strategic programme.

New EuroGeoSurveys Treasurer

Since January 2011 Dr. Peter Seifert, Director of the Geological Survey of Austria, is the new member of the Executive Committee of EuroGeoSurveys, covering the function of Tresaurer.

Dr. Johnny Fredericia, Managing Director of the Geological Survey of Denmark and Greenland, has become the new EGS Vice-President.
Mineral Resources became an important economic and societal issue within the European Union in the second half of the first decade of the 21st century, despite the world economic crisis. The main cause was disruption of raw materials access. Concern about this situation is reflected by EU Communication (COM (2008) 699; THE RAW MATERIALS INITIATIVE – MEETING OUR CRITICAL NEEDS FOR GROWTH AND JOBS IN EUROPE - {SEC(2008) 2741}), the Raw Materials Initiative (RMI) for short.

The follow-up to RMI has included creation of two Working Groups, one on Criticality and the other on Exchange of Best Practices. Reports from these WGs has passed the consultation process. In the second half of 2010 a preparation for an Innovation Partnership planning also began. It is entitled Innovation Partnership: Non-Energy Raw Materials for a Modern Society.

In late 2009, the EuroGeoSurveys Expert Group Mineral Resources (MREG) was reorganized, as were other the Expert Groups. Membership was newly appointed by the management of Member Surveys and the relationship with the EGS office was clarified. The MREG, which officially has 33 members from 23 member surveys, did not start from scratch; a good foundation was laid by EGS ex-Secretary General Patrice Christmann, among others.

First, the MREG re-thought the essence of existence and its basic framework: mission and vision. The mission of the MREG is to provide the best available mineral expertise and information based on the knowledge base of member geological surveys, for policy, industry, communication and education purposes on the European level. The Vision of the MREG is based on the goal of becoming the leading partner within a European mineral information network, or other forms of cooperation, that will be providing tools and expertise to support sustainable minerals supply for Europe. Mineral information provided by the MREG is based on globally comparable standards of excellence for science and expertise, and it is agreed that these standards will be maintained. The Vision will be carried out collaboratively with other organizations that have mineral information and expertise, and with consumers of that information.

The main features supporting the MREG program are to:

1 - strengthen the EGS MREG and its relations with other relevant bodies or institutions by improved communication and coordination and


Within the RMI the EU Commission has laid out two tasks for national geological surveys:

1 - improve the knowledge base of mineral deposits within the EU, and

2 - ensure that there is better networking between the national geological surveys to facilitate the exchange of information and improve the interoperability of data and their dissemination, with particular attention to the needs of SMEs.

Mineral Resources Expert Group in 2010: building a prosperous future?

Slavko Solar
EuroGeoSurveys Mineral Resources Expert Group Chairman
The MREG response includes “EuroGeoSurveys proposal for the implementation of a coherent EU non-energy raw materials policy” (April 2008), concept notes: “CRISYS (Geological data to locate mineral deposits)” and “eMINEnt (Data sources for EU-level mineral development” (November 2009), and first upgrade of eMINEnt proposal (May 2010).

European Minerals Network (eMINEnt), based on Raw Materials Initiative, has been proposed. The Network will comprise three coordinated programmes.

Each programme will build on existing national-level data that are already being collected, including that for which annual national-level collection is mandatory, as well as outcomes of relevant, and in particular EU, minerals projects and other sources. All data and information will conform to globally comparable standards, through adaptation or transformation if needed.

The DEPOSIT (EU mineral deposit database) programme will develop an investors’ portal, giving information on the mineral resources and deposits within European Union. The RESOURCE (EU mineral data / statistics) programme will collect national-level data on minerals and harmonize it among the Member States. These data will be reported at the European level in a format that correlates with data already collected and reported by EUROSTAT, which has the MS and EC responsibility for economic data such as exports and imports.

The OUTLOOK (EU mineral outlook) programme will produce an annual or bi-annual forward-looking analysis on the minerals supply and demand situation in Europe with special attention given to critical minerals based on the outputs of the programmes DEPOSIT and RESOURCE and various other sources. The Coordination body will deal with horizontal activities and harmonization, such as terminology, data interoperability, communication / education, uniform output, promotion, distribution / dissemination etc.

The other important part of MREG work is assistance in creation of EU mineral project proposals, as well as support of on-going projects with EGS members such as AEGOS, EO-MINERS, EuroGeosource POLINARES, Promine, SARMa, etc. EGS MREG is member of ETP SMR Steering Committee and has an impact of European Technology Platform on sustainable Mineral Resources (ETPS SMR) activities and intends to increase it in the near future.

Slavko Solar
INSPIRE sets up a framework of data, technology, policies, standards, and human resources, necessary to facilitate the sharing and using of spatial information. This broad and ambitious objective has been recognized as strategic for the Geological Surveys, giving the opportunity to provide a better visibility, access and use to the subsurface data, information and knowledge.

The development of the INSPIRE rules is therefore very important to consider, as it will condition the success and the efficiency of the implementation of the European Spatial Data Infrastructure.

EGS has been involved in the design of the Directive from 2003, and has been identified as a very supportive and contributive community. European projects, such as OneGeology-Europe have demonstrated the capacity of EGS members to develop and implement prototypes of INSPIRE compliant infrastructures.

EGS experts have contributed to the initial drafting teams covering network services, metadata, data sharing, and data specifications. The thematic communities are now involved in the definition of the 25 themes of the Annex II and III. These themes cover all the environmental domains. This work is done by TwGs (Thematic Working Groups) through a very precise and strict process developed by the data specification drafting theme during the last years. The quality of this work will be critical for:

- the evaluation of the cost of implementation for the data providers (such as the Geological Surveys),
- the usefulness of the information for end users,
- the capacity to merged data coming from different themes to address complex environmental issues.

Therefore, the contribution of the EGS community is really important at this stage. EGS has proposed 14 experts to the Commission to participate to the TwGs. All of them have been selected by the JRC (in charge of the technical coordination of INSPIRE). They contribute and facilitate the work of 3 themes: geology, mineral resources and natural risk zones. Other themes are also relevant for EGS: energy, soils, restriction/regulation zones, environmental monitoring facilities.

The TwGs are currently working on a first version of the data specifications, which will be made available in spring 2011 to the SDICs (Spatial Data Interest Communities) and LMOs (Legally Mandated Organizations) for review, comments and testing.

In coordination with the other EGS Expert Groups, the Spatial Information Expert Group will prepare and consolidate the contribution of EGS to this review work.

According to the current planning, the final specifications for the Annexes II and III will be adopted mid-2012, and will have to be implemented from December 2014 for the new datasets, and in May 2019 for the existing datasets.

On a longer perspective, it is important to notice the strong connection of INSPIRE with Global Monitoring for Environment and Security (GMES) and with SEIS (Shared Environmental Information System). SEIS aims at developing a comprehensive European network of information services based on the INSPIRE principles that could be used in particular for reporting on environmental directives. The Commission will prepare in 2011 an implementation plan for SEIS that will develop the relationships and between three major European initiatives.

Francois Robida
EuroGeoSurveys Spatial information Expert Group Chairman
GEUS has recently hosted the last EGS General Meeting; what does it mean for GEUS to be a member of EGS?

GEUS from the start has been active in EGS and in the former organizations WEGS and FOREGS, which developed to EGS. Our former director was among its founders. EGS is the most important European geological network for GEUS and EGS gives us an optimal platform for exchanging experiences and sharing work.

The national geological surveys are different with respect to many issues, but seen from a distance, they are based on the same basic idea. Each country has a geological survey organization (GSO) and we share many types of missions and tasks, but also our “culture” is quite similar, making it quite easy to cooperate. EGS has been an enhancing vehicle for joint European projects especially projects dealing with the core business of every EGS member: knowledge about natural resources, data and mapping about the subsurface and harmonisation. The result has been beneficial for the European community and GEUS has been a partner in most of the initiatives.

In your opinion, what are the strengths of EGS and which steps must still be taken to strengthen its position in Europe?

A main function of EGS is to create a platform for integrated work and a pool of expertise. We need to work in a more integrated manner in the future to be able to respond to the needs for geological information and knowledge at the European scale. This can be done through several models of organization and the newly submitted application for a “design study” about research infrastructure will – if it is funded – give the members of EGS the possibility to explore this in depth.

There is no doubt in my mind that we need to strengthen EGS and it members at European scale, but we need to build on the strength of the national geological surveys (GSOs). If we disconnect the work of the GSOs from the way the European work is organized, the GSO’s will loose importance and the European deliverances will be much less optimal and have less continuity.

During the climate change conference in Cancun, it has been pointed out that more than 100 million people are threatened by rising sea levels. Is the Baltic area at risk? At European level which actions should be undertaken?

The Baltic Area - as well as the North Sea area – with it surrounding low lands is at risk to a sea level rise. The challenges will be several, and not just inundation of land, both also increasing flood risk along the rivers and saltwater intrusion in the groundwater. In coastal areas the groundwater level – if connected to sea level will rise.

Climate adaption is thus a key challenge where geosciences play a core role in risk management, planning, managing of water with respect to new or renewed infrastructures as well as with respect to management of nature e.g. establishment of new - and buffering- wetlands. As the climate – temperature, evaporation, rainfall and rainfall intensity most certainly also will change - we need to look at the full hydrological circle.
An issue which seems to be overseen is the some of the geological environments are quite dynamic and may by itself adapt to a sea level rise.

At the European scale, initiatives to establish dynamic tools that can underpin regional cooperation on adaptation have to be taken. Otherwise society cannot optimize the effect of its measures to prevent the negative consequences of sea level raise.

How is GEUS helping to fight climate change?

GEUS is working along tree lines to underpin the implementation of the climate policy. Along the first line we assess and map the potential of CO₂ storage, which can be a future measure to reduce CO₂ emissions, but we also work with Enhanced Oil Recovery (EOR) using CO₂, combining reduction in emission with increase of energy resources. The oil and gas are still very important for the economy and security of energy supply. Along this line GEUS also assess and promotes geothermal energy, which can get a significant increasing role in the energy supply.

Along the second line GEUS works with climate adaptation using dynamic groundwater-surface water models. E.g. they are used for assessment of flooding risk or assessment with respect to construction of new roads or sewage systems, which has to function under a future climate. We use the scenarios of the IPCC for year 2100 to make climate modelling. The coastal dynamics and its dependency on geology is another task along this line.

And last we monitor the change of the Greenland Ice Sheet, to get improved records of it's change in volume and improved understanding of its dynamic, so we can a make better prediction of the future contribution to the sea level change.

The Geological Survey of Denmark and Greenland, GEUS

The Geological Survey of Denmark and Greenland, GEUS, is an independent research and advisory institution under the Danish Ministry of Climate and Energy. GEUS has its own Act and was established in 1995 by merging the Geological Survey of Denmark, DGU (1888) and the Geological Survey of Greenland, GGU (1946).

Responsible for the scientific geological research of Denmark and Greenland and the continental shelf, GEUS advises the Danish authorities in matters concerning nature, environment, energy and raw materials, and it supports university education. As the Danish geological data centre, GEUS makes data available for the public.

In 2009 GEUS’ total revenue was 44 M€, including 19 M€ state appropriation. The external income is mainly programme resources and co-financed contract research. GEUS’ employees counted 313 in 2009 of which more than 2/3 holds a M.Sc. or Ph.D. degree. 13 Ph.D. students completed their degree in 2009 and 54 PhD students had GEUS tutors by the end of 2009.

In the week 13th -17th September GEUS hosted the EuroGeoSurveys 29th General Meeting and Directors Workshop, and the Field Trip. In the same week GEUS, together with the European Environment Agency (EEA) and EuroGeoSurveys, organised a workshop on OneGeology-Europe at the EEA premises.

The Field Trip organised by GEUS encompassed mineral industry issues at the Stevns Limestone Quarry, geotourism at Møn Cliff, hydrology and water supply at VCS, Denmark and geotechnics at the Great Belt Fixed Link.

Senior Researcher Peter Frykmann describes the Cretaceous - Tertiary boundary at Stevns Limestone Quarry.
In the next Newsletter issue

The next issue of the Newsletter will be dedicated to the celebration of EuroGeoSurveys’ 40th Anniversary, and will feature an article by Dr. Peader McArdle, the recently retired Director of the Geological Survey of Ireland, describing our history during the past four decades.
New MODEG members appointed

The EC has appointed the new Members of the Marine Observation and Data Expert Group (MODEG) of the Directorate General Maritime Affairs and Fisheries (https://webgate.ec.europa.eu/maritimeforum/node/1451). Several of the experts appointed in a personal capacity also serve as key members of the EGS Expert Group on Marine Geology. On 12 October 2010 the Commissioner for Maritime Affairs and Fisheries, Ms. Maria Damanaki, specifically referred to the work of the geological surveys (the EMODNET-Geology project) as an example of marine policy integration in her opening remarks at the EuroOCEAN Conference.

EC consultations

• Consultation on a future EU financial instrument for the environment (continuation of LIFE+) (Open until 15/02/2011)

• Proposal for a definition of the term “nanomaterial” that the European Commission intends to use as an overarching, broadly applicable reference term for any European Union communication or legislation addressing nanomaterials (Closed on 19/11/2010)


• Public consultation on the Raw Materials Initiative (Closed on 19/09/2010)


• Public consultation on The external dimension of the EU energy policy (Closing on 21/02/2011)

New EC Communication on research and innovation strategy

The European Commission has launched a new strategy on research and innovation. The “Europe 2020 Flagship Initiative Innovation Union” - COM(2010) 546 - launched by the EC as a follow up of the EU 2020 strategy, outlines the important role played by raw materials.

European Commission - LIFE+ Information Session 2011

The European Commission will publish the fifth Call for Proposals under the LIFE+ Programme in February 2011, with up to €265.36 million available across the EU for co-financing projects under three headings: nature and biodiversity; environment policy and governance; and information and communication.

The European Commission, in conjunction with STELLA Consulting and MWH, will organise an Information Session in French on the LIFE+ Programme in Belgium. The aim of the Information Session is to inform potential applicants for the 2011 Call for Proposals about the LIFE+ Programme, to help potential applicants decide whether or not to submit a LIFE+ proposal, and to highlight some key issues to help avoid common problems if they do submit a proposal.

The Information Session will be held on:

Tuesday 01.03.2011 at the Public Federal Service of Employment, Work and Social affairs, Brussels

For further information, or to register for this LIFE+ Information Session, please go on www.surveymonkey.com/s/2011RegistrationformBelgiumFR. Registration for this Session will close on: 15.02.2011.

There will also be a LIFE+ Information Session in Dutch, on 03.03.2011. For further information, please go on www.surveymonkey.com/s/2011RegistrationformBelgiumNL. Further information can be found on the LIFE website: http://ec.europa.eu/environment/life/funding/lifeplus.htm.
23rd Colloquium of African Geology (CAG23)
8th - 14th January 2011 - Johannesburg, Gauteng, South Africa
Nature has gifted Africa as a foremost continent in terms of its mineral and natural resources. However, it is our responsibility to ensure that the Geosciences in Africa will continue to play a part commensurate with this position, hence the Colloquium theme “Together in Africa for a leading role in Geosciences”. By understanding the geological history and geodynamic evolution of the African continent, we will contribute towards a better and deeper insight into the nature and occurrence of a wide range of natural resources (groundwater, energy resources, mineral resources, etc) that are essential not only to mankind but also to our modern society, its social well-being and the global economy.
http://www.cag23.co.za/

GIS in Mining & Exploration Europe
18th - 19th January 2011 - Stockholm, Sweden
GIS in Mining & Exploration 2011 will uncover the most advanced strategies of effective usage of Geographic Information system in Mining and Exploration and help you achieve efficiency and efficacy of your operations. Hearing experts from across the sector will allow for an interactive improvement opportunity, where you can hear from the best in the business on how they implement and utilize GIS in innovative, cost-effective ways.

Symposium GIS Ostrava
23rd - 26th January 2011 - Ostrava, Czech Republic
The symposium GIS Ostrava 2011 follows four main topics – Advances in Remote Sensing, Advances in Spatial Modelling, Geoinformation Technology Challenges and Harmonization and Integration Tools supporting INSPIRE implementation.

Global Mining Forum

Symposium Mines Guinée
22nd - 24th February 2011 - Conakry, Republic of Guinea
Symposium Mines Guinea is now established as the largest mining event currently organized in West Africa. In 2008, the event attracted over 800 participants emanating from 25 countries, 46 companies exhibited and 85 presentations were delivered. SMG 2011 main theme is Mining: Good Governance - Sustainable Development.

Groundwater Conference
14th - 16th March 2011 - Orleans, France
This conference is the 24th European Regional Conference of the International Commission on Irrigation and Drainage (ICID). The conference will accept contributions from worldwide since they deal with management of groundwater resources issues, that is to say a human action on the system (physical, economic, institutional, regulation). Trans boundary groundwater issues will not be addressed by the conference.
http://www.groundwater-2011.net

NATO Advanced Research Workshop `Drinking Water Protection by Integrated Management, 21st - 23rd March 2011 - Belgrade, Serbia
The workshop will include three sessions: the technical, country specific and round table/discussion sessions. In the country sessions, expert and representatives from relevant national institutions will present experiences gained, current issues and research needs on integrated management of contaminated land and groundwater/drinking water in respective countries. Technical presentations on case studies and specific projects from the NATO member and partner countries and Mediterranean Dialogue countries will be given. Round table and discussion sessions will take place during the program in order to assess the existing knowledge and identify needs for further research in the future and identify attendee's needs and suggestions for possible following workshops.
http://www.nato.int/science/index.html

Upcoming Events
Upcoming Events

- **European Geosciences Union General Assembly**
  3rd - 8th April 2011 - Vienna, Austria
  The EGU General Assembly 2011 will bring together geoscientists from all over the world into one meeting covering all disciplines of the Earth, Planetary and Space Sciences. Especially for young scientists the EGU appeals to provide a forum to present their work and discuss their ideas with experts in all fields of geosciences.

- **International Conference on Environment & Health incorporating the 28th SEGH European Conference and workshop**
  10th - 15th April 2011 - Lancashire, England
  The conference provides an internationally recognized forum for interaction, discussions and the exchange of research between academic scientists, consultants, practitioners and public servants who are engaged and active in the multi-disciplinary area of environment and health.
  [http://www.edgehill.ac.uk/seg2011/about](http://www.edgehill.ac.uk/seg2011/about)

- **VII International Brown Coal Mining Congress, 11th - 13th April 2011 - Belchatow, Poland**
  This will be the seventh edition of the Congress under the theme: “Role and position of brown coal in the world power industry of the XXI century”.

- **Waste Management & Recycling Conference, 13th - 15th April 2011 - Sofia, Bulgaria**
  The International exhibition Save the Planet combines thematically the sectors of waste management and recycling, environment. Climate changes and commitments of Bulgaria to the EU in environment sector issues require infrastructure reconstruction and market liberalization. The aim of the exhibition is to stimulate investments in the sector by presenting the most advanced concepts and technologies.

- **Energy Efficiency & RES Congress for SE Europe, 13th - 15th April 2011 - Sofia, Bulgaria**
  Innovative technologies and practices, strong international participation, a lot of new business contacts, many parallel initiatives and discussions – this is what the 7th edition of the International Congress and Exhibition on Energy Efficiency /EE/ and Renewable Energy Sources / RES / for South-Eastern Europe will offer.

Colophon

The EuroGeoSurveys Newsletter is a three-monthly publication of:

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**Layout and design**: www.tango-grafix.be
“I have been reading your book on the bottled water geochemistry and I really admire the work you put in on this. It is both scientifically an important contribution and a valuable reference piece for the public.”

Dr. Kirk Nordstrom, USGS

“This new geochemical atlas is an impressive piece of work reflecting the creativity of EGS”

GIS in Mining & Exploration Europe

Utilise the most innovative GIS technologies to maximise exploration & advance your mining activity

18th-19th January 2011 - Grand Hotel Stockholm, Sweden

Exclusive insight from Geological Surveys, Mine Operators and Exploration Companies

14+ Outstanding Experts:

- Jorgen Tulstrup, Head of Department for Geological Data Centre, GEOLOGICAL SURVEY OF DENMARK & GREENLAND
- Lars Kristian Stølen, Head of Division Geodata Management, GEOLOGICAL SURVEY OF SWEDEN
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Maximise the value from your GIS software to optimise your data management during the exploration process.

Understand the best methods of implementing effective Data Management ensuring that others that use the system adhere to guidelines.

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Cross-country insight! Understand how Geological Surveys across Europe effectively utilize GIS software for exploration targeting.

"I am looking forward to the opportunity of networking with other GIS professionals from within the mining industry at Mining IQ's GIS in Mining & Exploration event"

Gareth Thomas, Senior GIS/CAD Specialist, SRK CONSULTING

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