geotechnical information are inserted to provide detail information for geotechnical professionals to assess the slope stability conditions and to select the best suited mitigation solution using the best suited technology. The success of the decision support system is ensured by involvement of wide spectrum of professionals for its design and the result verification. System is designed to accommodate any technical solution provided by otherwise competing companies to find the best mitigation option for defined problem. The presentation will introduce you into the rock slope stability problems in the Czech Republic, their typical technical solutions, basic database structure of the NEMETON system, results of its implementation and further research steps leading to the full operation of the NEMEOTON program welcoming broader European cooperation.

Geology and minerals of Kosovo* – Perspectives for national development

Knobloch A.[1], Legler C.[1], Barth A.[1] and Rexhaj A.[2]

[1]Beak Consultants GmbH, Am St. Niclas Schacht 13, 09599 Freiberg, Germany, www.beak.de, info@beak.de
[2]Independent Commission for Mines and Minerals, Rr. Armend Daci Nr. 1, 10000 Pristina, Kosovo, www.kosovo-mining.org, icmm@kosovo-mining.org*

In 2002, the UN Kosovo administration has identified the key economic potential of the mineral industry for the further sustainable development of Kosovo. Consequently, between 2003 and 2009, under supervision of the Directorate of Mines and Minerals (DMM) (now Independent Commission for Mines and Minerals of Kosovo (ICMM)), Pristina/Kosovo, a comprehensive review of the geology and mineral potential of Kosovo was carried out. The results have been stored in the GEO-Database Kosovo (GDK) – a customised geo-scientific information management system, powered by ESRI ArcGIS 9.2 and Microsoft SQL 2005. The GDK comprises of a system of primary and derived geo-scientific and geo-economic data, such as mineral concessions, drill holes, geochemistry, field observation data, reports and documents, and a wide variety of thematic maps at scale 1:50,000 – 1:200,000. The database, reports and maps are currently used as the key working tools for the management of the mining sector of Kosovo and its further development.

In 2003, the activities have been launched by digitalisation of the existing geo-scientific maps, followed by the implementation of a unified national geological legend and the creation of a reviewed seamless national geological map at scale 1:100,000 (finalised in 2008). Extensive field work was executed in order to investigate thematic geological issues and to evaluate the mineral potential of the country.

An atlas of new thematic maps at scale 1:200,000 covers the most important geo-scientific and geo-economic issues: Metallogenic / Minerogenic Map, Map of Minerals, Geological Map, Hydrogeological Map, Tectonic Map, Quarry Map, Map of Construction Raw Materials, Map of Mineral and Thermal Waters, Morpho-Orographical Map, Soil Map, Satellite Imagery Map, Maps of Mineral Prospectivity for Au, Pb/Zn and Cr.

Detailed maps have been created in order to investigate special issues of key economic importance: Map of Construction Raw Materials and related maps of land use conflicts (Kosovo Quarry Plan) 1:50.000, the Kosovo Mineral Resources Management Plan 1:50.000, the Geohazards Map of Planned Kosovo Highway 1:25.000, the Geochemical Survey Maps of gold prospective areas 1:50.000.

Between 2007 and 2008, as part of the field mapping and sampling campaign, a stream sediment sampling survey was executed with main focus on precious metals (Au, Ag), base metals (Zn, Pb, Cu) and rare metals. As result, high-grade Au-anomalies (up to 11 g/t in stream sediments) were found at different locations, proven by findings of native gold in heavy concentrates and Au recorded in hard rock samples. In 2009, the existing knowledge and data was used for the creation of national mineral prospectivity maps for Pb/Zn, Au and Cr. These maps have been produced by support of the newly developed– advangeo® - software, which uses neural networks technology based on artificial intelligence. The

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resulting prospectivity maps set the basis for further detailed exploration activities in the country.

Developed in 2009, the Kosovo Mineral Resources Management Plan (KMRMP) targets on the sustainable utilisation of the high mineral potential of the country in the given economic and social framework. All known mineral deposits and occurrences were ranked with regard to their economic potential and legal status. The KMRMP clearly outlines the prospective areas and describes steps for further investigation. It forms the basis for the development of the mining industry of Kosovo, the implementation of improved land use planning procedures and environmental protection as well.

Data Management System GEORIOS – Documentation and evaluation of natural hazards

Kociu A., Tilch N. and Schwarz L.

Department of Engineering Geology, Geological Survey of Austria, A-1030 Vienna, Neulinggasse 38, Austria, arben.kociu@geologie.ac.at, nils.tilch@geologie.ac.at and leonhard.schwarz@geologie.ac.at

Natural hazards and their effects on the population and economy are for the Austrian Alpine region of increasing relevance. The events of the last years have shown that high meaning is to be attached to a comprehensive scientific understanding of mass movement processes. The quest for security gives rise to develop strategies and measures to counter the threats and to protect the people and the infrastructure. To determine where protective measures are necessary, we produce landslide inventory and risk assessment maps for many areas in Austria.

Since the foundation of the Geological Survey of Austria (GBA) in 1849 have been received a lot of data or knowledge about geogen natural hazard into the archives of the department of engineering geology.

To manage this data diversity and to make this entire pool of data available for everyone is necessary to develop a row of policies and strategies. Three main steps are followed in order to create this management system: (i) the development of spatial database, (ii) the development of an integrated procedure for design of susceptibility maps, (iii) and development of a tool set for the visualization and web-enabled data query. The final application based on the concept of Landslide Information Systems, will be used as an additional tool for risk and emergency assessment as well as for planning and decision making purposes.

Landslides unfortunately, do not display a clear relationship between magnitude and frequency as do for example floods. Landslide studies are challenging to scientists, due to the difficulty to represent landslide hazards in quantitative terms over large areas.

To be able to clarify which method to which conditions (scale of area, quality of data, area heterogeneity) and for which questions /objectives is suitable in the different measure, a classification of the areas to be modelled is necessary. However, this also means that the modelling results must be judged concerning her statement quality for different objectives (at least semi quantitatively). Otherwise it would be unclear furthermore for what, the produced maps (e.g., hazard potential maps, susceptibility maps) by means of different methods and data quality, are to be used generally.

Experience has shown that in this regard the following criteria should be used:

- Relative size of area
- Data quality (the quality of process data, the quality of the parameter maps)

Nevertheless, all these criteria cannot be quantified. Therefore, different areas with regional variety and different data quality are very important for model calculations. Only different models and methods, can be tested concerning her usefulness for the production of maps as bases for spatial planning, and estimated, under which conditions which method is for which question more suitable

In addition, the GBA is also keen to apply methods and to develop strategies, through which an evaluation of existing data towards large scale maps (for example hazard potential maps).

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