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## REPORT OF THE SLOVENIAN IGCP COMMITTEE FOR 2014

### 1. MEMBERS OF THE IGCP NC

The Slovenian IGCP NC had in 2014 16 members, of which one is an honorary member and one has no voting rights. The members are:

1. Prof. Emeritus Dr. Matija Drovenik, regular member of Slovenian Academy of Arts and Sciences (SAZU), NC honorary member,
2. Prof. Emeritus Dr. Simon Pirc, University of Ljubljana (UL), Dept. of Geology,
3. Dr. Katica Drobne, Ivan Rakovec Institute of Paleontology, Research Institute of SAZU,
4. Assoc. Prof. Dr. Nina Zupančič, UL, Dept. of Geology, Secretary of IGCP NC,
5. Assist. Prof. Dr. Špela Goričan, Ivan Rakovec Institute of Paleontology, Research Institute of SAZU,
6. Assist. Dr. Mateja Gosar, Geological Survey of Slovenia,
7. Assoc. Prof. Dr. Martin Knez, Karst Research Institute of SAZU,
8. Prof. Dr. Jože Pezdič, Research Organization GEORIS,
9. Dr. Miloš Bavec, Geological Survey of Slovenia,
10. Assoc. Prof. Dr. Marko Vrabec, UL, Dept. of Geology,
11. Assist. Dr. Marko Komac, Geological Survey of Slovenia, (without voting rights),
12. Dr. Tea Kolar-Jurkovšek, Geological Survey of Slovenia,
13. Mag. Suzana Fajmut Štrucl, Geopark Karavanke/Karawanken,
14. Bojan Režun, Geopark Idrija,
15. Marjutka Hafner, Director of Slovenian Office for UNESCO,
16. Dr. Mirka Trajanova, Geological Survey of Slovenia, Chairperson of IGCP NC.

## **2. SHORT REPORT OF THE SLOVENIAN IGCP COMMITTEE FOR 2014**

The Slovenian contribution to the IGCP projects consists mostly of the research results obtained on the national territory of Slovenia.

The IGCP NC prepared a common research program based on applications obtained from the interested Slovenian research groups and individuals. The program proposal was accepted at the NC meeting, and the financial plan for the current year prepared in the frame of funds assigned to the IGCP National Committee by the Slovenian office for UNESCO.

The research work was carried out on 15 projects in 2014. By the end of 2013, the IGCP Projects No. 571, Radon, Health and Natural Hazards, and IGCP No. 572, Permian-Triassic Ecosystems terminated, however, new projects were accepted, so that the total number was increased by four in 2014. Projects continuing from the previous year are: IGCP No. 598, Environmental Change and Sustainability in Karst Systems (M. Knez, Karst Research Institute, ZRC SAZU), Project IUGS/IAGC (International Union of Geological Sciences/International Association of Geochemistry and Cosmochemistry), Geochemical Baselines (M. Gosar, GeoZS), IGCP No. 567, Earthquake Archaeology – Archaeoseismology (N. Zupančič, University Ljubljana, NTF), IGCP No. 588, Preparing for Coastal Change: a detailed process-response framework for coastal change at different timescales (M. Bavec), IGCP //TU MANJKA ŠTEVILKA PROJEKTA// Project Paleocene and Eocene, climate and changes in that time (K. Drobne, ZRC SAZU), IGCP No. 571, Radon, Health and Natural Hazards (T. Dolenc, University Ljubljana, NTF), IGCP No. 572 Permian-Triassic Ecosystems (T. Dolenc, University Ljubljana, NTF; T. Kolar-Jurkovšek, GeoZS), IGCP No. 575, Pennsylvanian terrestrial habitats and biotas in southeastern Europe and northern Asia Minor and their relation to tectonics and climate (T. Kolar-Jurkovšek, GeoZS), and IGCP No. 543, Low-Temperature Thermochronology (J. Pezdič, GEORIS). The activities of the two Geoparks, Idrija (B. Režun) and Karavanke/Karawanken (S. Fajmut- Štrucl) are also associated with the IGCP.

Projects that started this year are Urban geochemistry (M. Gosar), IGCP No. 594, Impact of Mining on the Environment in Africa (N. Zupančič), IGCP No. 600, Metallogenesis of Collisional Orogens (T. Dolenc), and IGCP No. 609, Taphonomy and Fossilisation (K. Drobne, ZRC SAZU).

## **3. PRESENTATION OF ACHIEVEMENTS IN 2014**

To the most important research achievements certainly belongs a comprehensive study of environmental pollution, especially the part caused by human activities (project IUGS/IAGC) that is particularly strongly reflected in the urban areas. Over 500 years of Hg mining and ore processing in Idrija resulted in a widespread contamination, especially in soil. A large number of geochemical data on soil on arable land and permanent grazing land soil in Slovenia were collected as well. The data are needed for the newly adopted EU regulation (REACH - Registration, Evaluation and Authorisation of Chemicals) as well as for the emerging EU directive on soil protection, which requires accurate information about the current quality of the soil at the European level, and for tracking the status of the usefulness of the land at the national level. Of particular importance is recording the pollution caused by atmospheric

fallout and local sources, such as the long-term mining and processing industry (IGCP 594). Among the most vulnerable areas are the karst systems, where the impact of anthropogenic pollution is particularly acute (IGCP 598). The need for raw materials also imposes the exploration for new mineral deposits (IGCP 600) in the collisional systems to which belongs also the Alpine region.

In the framework of geohazards is the study of past seismic activity in the archaeological sites (IGCP 567), which is the basis for directing the research in the recently active areas. Of great importance is determination of sea level fluctuations (IGCP 588) at the end of the last glacial maximum (LGM), and active tectonics and paleoseismology in the regions of low intensity of deformation, which was held in collaboration with the University of Padua and CNR in Italy. In the frame of the project EMODNET Geology (The European Marine Observation and Data Network), a map of the upper part of the seabed sediments, and the geological map of the seabed bedrock at the scale of 1: 250,000 were prepared for the Slovenian part of Adriatic Sea.

Among the naturally conditioned risks to the human health belongs the study of radon emanations (IGCP 571). Measurements of radon transport in ground air and its emanation from the ground were performed. The measurements were continuously carried out in karst caves, indoor air of kindergartens, schools and housings.

Prognosticating of geologically-conditioned hazards is based primarily on the knowledge of past events which are recorded in rocks. In this segment of research of the Permian-Triassic ecosystems (IGCP 572) occurs the period of the mass extinction due to extreme climate changes. Such events have occurred several times in the geological past, among others at the transition from the Cretaceous to Tertiary, and during the Tertiary. In the latter period lived sensitive large benthic foraminifera that are good indicators of climate change, and have been therefore carefully studied (IGCP-WOLF).

The Geopark Idrija and the Slovenia-Austria crossborder Karavanke/Karawanken Geopark were admitted to the European (EGN) and the Global Geoparks Network (GGN) in 2013. In the two Geoparks a number of activities were held in 2014 for attracting the greatest possible number of visitors. Between May 14<sup>th</sup> and May 6<sup>th</sup> 2014 a week of European Geoparks was organized at the Geopark Idrija. The Centre for Idrija Heritage, Idrija 2020, and the Idrija Mercury Mine organized the intergenerational event "Povej mi eno po rudarsko" ("Tell me one in the miner's way"). Children's adventure camp was organized in the Natural Park Topla of Geopark Karavanke/Karawanken, between July 26<sup>th</sup> and August 7<sup>th</sup> 2014. The meeting and "Geoparks and Marketing" workshop were held on October 21<sup>st</sup> and 22<sup>nd</sup> 2014 in Idrija and Mežica.

It is encouraging that all events were well attended, since the activities of Geoparks educate people in the most direct way and spread awareness of our responsibility for the natural and cultural heritage.

A summary report of results of the IGCP projects for the year 2013 was presented in February 2014 on the 42th Open Session of the Scientific Board of the International Geoscience Programme (IGCP) in Paris.

Several papers were published and results of the projects presented on international and domestic conferences. Follows a list of some of them.

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