

CHRONICLE

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GEOGRAPHICAL RESEARCH INSTITUTE Hungarian Academy of Sciences

Scientific Activity Report'09

I. Main tasks of the research institute in 2009

The GRI HAS continued to pursue research activities as a member of the Association of Institutes in Geosciences of the HAS. The most important tasks included the investigations into the short- and long term natural environmental changes anticipated and into the transformation processes of socio-economic spatial structure. These activities formed part of both projects started in 2009 (Margins, MTA-DFG), and those launched earlier (SefoNe, SOWAP, BORASSUS, ACRE, UNESCO-MOST etc.), and projects announced by domestic research centres and by academic and governmental organizations (OTKA, OFA etc.). An eminent task was the preparation of a map series presenting the change in ethnic patterns on the present territory of Hungary between 1495 and 2001 and the publication of a thematic atlas compiled in a broad national collaboration entitled Hungary in Maps.

The main tasks in the physical geographical domain in 2009 were the continuation of the projects in progress and presentation of the results on Hungarian and international forums. The following topics were cultivated independently or in collaboration:

- BORASSUS project (funded by EU FP6 INCO): The environmental and socio-economic contribution of palm geotextiles to sustainable development and soil conservation
- SOWAP (funded by EU LIFE/Syngenta UK): Soil and surface water protection using conservation tillage in Northern and Central Europe
- Effect of landscape pattern on macro and micro element budgets of wetlands
- OTKA project: The role of gully erosion in the present-day relief development of Hungary
- The start of the „Margins” project
- The elaboration of sample preparation methods for particle size analysis

Research activities in sample areas to facilitate deposition and safe storage of radioactive wastes of low and intermediary activity as by-products of nuclear energy generation continued to be a complex scientific task. Comprehensive studies focused on environmental monitoring, hydrogeographical and soil erosion measurements in the surroundings of Radioactive Waste Treatment Disposal Facilities at Püspökszilág and of the National Radioactive Waste Repository at Bataapati.

Five current OTKA projects were cultivated in support of the solution of the tasks in 2009 (Correlation of Quaternary sediments, Ethnic geography of Hungary and recent eth-

nic processes in the neighbouring countries, Health tourism and quality of life in Hungary, Impact of urban rehabilitation programmes on the quality of life of the population in metropolitan areas, Impacts of industrial investments on the spatial structure and their transport related issues), added by a novel one entitled Ethnic geography and cartography of the countries in the Carpatho-Pannonian area.

An important target was the timely performance of the tasks within current multi-annual EU framework programmes, such as the project ACRE (Accommodating Creative Knowledge: competitiveness of European metropolitan regions within the enlarged Union) and running in EU-FP6 SefoNe (Searching for Neighbours: dynamics of physical and mental borders in the New Europe). Financed jointly by MTA-DFG there were two projects in 2009: „Revitalisierung von gründerzeitlichen Altbauwohnquartieren in Budapest – Prozesse, Strategien, Perspektiven“, and „Zwischen Gentrification und Abwärtsspirale“.

On behalf of the Presidium of HAS a thematic atlas in English entitled „Hungary in Maps“ was published by synthesizing the merits of a book and an atlas thus serving as a business card of the country. Another major venture was reambulation and preparation of the second edition of a 800 page monograph „Inventory of Natural Microregions in Hungary“ for publication which included the revision of the manuscript with the thematic checking and edition of insert maps.

Two important meetings were organised. One in preparation for the Fourth Hungarian Conference on Landscape Ecology to be held in 2010. Another was the arrangement of the closing session of SefoNe/Carpathian Basin (conference and cultural event).

II. Outstanding research and other results and their socio-economic impacts in 2009

– SOWAP supported by EU LIFE and Syngenta is aimed to combat landscape degradation. A preliminary conclusion has been that soil erosion represents the highest risk. Special soil tests were purposed for the establishment of technological, agronomic and economic requirements for and consequences of conservation vs conventional modes of cultivation. The amount of pesticides washed off and their enrichment in natural waters were measured too. Concerning soil loss a most conspicuous result is that under wheat the amount of soil loss was 125 times more on the conventional plot compared with that on the conservation plot.

Participants: 10 persons; of them 6 from the Institute

Estimated expenditure of the Institute: 27 m HUF fully covered by the grant support

Applicability: confirmation, and presentation of the advantages of conservation methods in cultivation; and propagation of their contribution to landscape protection and biodiversity. Presentations occasionally attract 40–50 people engaged in farming and decision makers and are instrumental in the propagation of the methods.

– The BORASSUS project terminated in 2009. The most important research results were achieved about soil moisture on the effect of geotextiles on soil moisture. Organic geotextiles cannot only be used as a tool against soil erosion but they can be applied also on embankments and dams in establishing a grass cover on their slopes by providing better conditions for the development of the vegetation cover. Organic geotextiles may have a positive effect also in new agricultural plantations where the water supply of cultivated plants during the first years after plantations comes mainly from the topsoil (e.g. newly planted stone-fruit orchards). The results can be applied in soil loss prevention.

Participants: 16 persons; of them 6 from the Institute

Estimated expenditure of the Institute: 12 m HUF fully covered by the grant support

Applicability: Geotextiles have a positive impact on soil moisture reducing soil loss and promoting the initial growth of new plantations.

– In the frame of SefoNe EU FP6 project the effects of the introduction of Schengen regime was evaluated on the one hand for the Hungarian-Hungarian contacts whereas on the other hand for the interethnic relations. Thanks to the strict border crossing regulations the grade of formerly remarkable smuggling decreased, at the same time the number of temporary legal (or illegal) job opportunities were also reduced. This led to change in life-strategies of local inhabitants, especially in the Hungarian community. Within the Romanian-Hungarian border zone the research site is Oradea/Nagyvárad where the main area of interest is the local interethnic relations. It was found that the local interethnic co-existence is closely related to the local and national political events and actions. (For more information see: www.sefone.soton.ac.uk)

Participants: 18 persons; of them 3 from the Institute

Estimated expenditure of the Institute: 70 m HUF fully covered by the grant support

Applicability: The research results contribute to the framing of problems and conflicts in relation with the social-economic effects of the enlargement of the EU and the introduction of Schengen border control regime. The evaluation of problem and present conditions can contribute to the more effective exploitation of economic-cultural opportunities in neighbouring countries.

– OTKA project entitled „Impact of urban rehabilitation programmes on the quality of life of the population in metropolitan areas” has dealt with the overview of domestic and foreign results on surveys about the quality of life and their evaluation; theoretical and applied aspects of the experience gained from urban rehabilitation in Hungary and abroad and of its social effects; new information obtained from the scientific analysis of the results of empirical studies. A volume of studies was published and information is available on website (www.varosrehabilitacio.net).

Participants: 2 persons, 1 from the Institute

Estimated expenditure of the Institute: 3.8 m HUF, fully covered by the grant support

Applicability: The research project has produced results and a model helping in promotion and development of interdisciplinary approach to urban planning and development.

III. Presentation of national and international relations

The institute pursued extensive cooperation with the earth science institutes of the HAS, and with the Centre for Regional Studies, Research Institute for Ethnic and National Minorities, with the Institute of History, Research Institute for Soil Science and Agricultural Chemistry, Institute of Sociology, as well as with different research stations under ministerial supervision (Ministry of Environment and Water Management, Ministry of Agriculture and Regional Development, Institute for Transport Research Ltd).

The institute participated in several projects of nationwide importance, initiated or organized by Prime Minister’s Office, different ministries (Ministry of Environment and Water Management, Ministry of Education, Ministry of Foreign Affairs), or other institutes with nationwide scope of action (National Health Office, Hungarian Central Statistical Office), by foundations.

Thirteen researchers were engaged in tuition at various institutions of higher education (on BSc, MSc, PhD level) as part time tutors. The contacts were the most intensive with universities (Eötvös Loránd University (ELTE), University of Pécs (PTE), University of Szeged, University of West Hungary, University of Miskolc, University of Pannonia, Corvinus University of Budapest, Central European University, Andrásy Gyula University in Budapest, Selye János University, Babeş-Bolyai University), and colleges (Kodolányi János College, Budapest Business School).

The GRI HAS is the headquarters for the Applied Geography Department of ELTE for more than ten years, where active education activity has continued in 2009 as well. In the frame of this cooperation researchers regularly hold courses at ELTE, while the professors from ELTE participate in scientific projects in the GRI HAS. In 2009 nine researchers from GRI HAS participated in geographical PhD programmes in Hungary as professors, eleven researchers conducted degree works on BSc and MSc, thirteen evaluated grants for academic and higher education positions, PhD theses, degree works. Three young researchers, financed by the HAS, attended doctoral programmes in ELTE and PTE.

One scientific advisor is the president of the Committee of Earth Sciences Complex Scientific Research (Section X of HAS), another one is the president of the Scientific Committee on Human Geography (Section X of HAS) and UNESCO-MOST National Committee. The deputy director is the president of Jury of Earth Sciences I (OTKA) and president of HUNGEO-TOP Operational Committee. Several colleagues have functions in Hungarian Geographical Society (vice-president, secretary general).

Seventeen researchers gave eighty six lectures during the year, forty nine of them were delivered at international scientific conferences. Of domestic scientific events the report meeting of the Association of Research Institutes in Earth Sciences, the international conference of IUSS (International Union of Soil Sciences, Budapest) are worth mentioning.

The institute made efforts to maintain and enlarge its multilateral international relationships. In order to fulfill this aim it participated in several EU and other international projects, making use of the researchers' international contacts. One researcher is employed by Selye János University (Komárno, Slovakia), another by Babeş-Bolyai University (Cluj, Romania).

Among scientific conferences in 2009 two have to be highlighted: one entitled „Creating economic and social neighbourhoods across political borders” was organized by the institute and the University of Bern in Komárno (Slovakia). The „Challenges of ageing in villages and cities: The Central European Experience” conference (Szeged, May) was organized by a scientific advisor of GRI HAS, who in one person is the president of UNESCO-MOST National Committee.

International scientific conferences with participation of researchers from the institute were the followings: 2nd International Multidisciplinary Conference on Hydrology and Ecology (Vienna, Austria), International Conference on Land and Water Degradation – Processes and Management (Magdeburg, Germany), Ancient Landscapes–Modern Perspectives (Melbourne, Australia), 2nd EUGEO Congress „Challenges for the European Geography in the 21st Century” (Bratislava, Slovakia), 3rd International Conference Advances in Tourism Economics (Lisbon, Portugal), ICA Symposium on Cartography for Central and Eastern Europe (Vienna, Austria), Géopolitique et Démographie, Colloque International (Geneva, Switzerland).

The international relations were especially strong with the Romanian, Ukrainian, Croatian and Slovakian academies, with the Institut für Länderkunde (Leipzig), Shevchenko

University (Kyiv), Akademie für Raumordnung und Landesplanung (Hannover), with the universities in Zagreb, Leipzig, Cluj, Bern, Berlin, and the college in Berehove (Ukraine). These relations are associated with special research programmes, research projects or bilateral research agreements. Similarly to former years the GRI HAS received foreign researchers from Romania, Slovakia, Switzerland, Austria, Italy, and from colleges, universities in the Carpathian basin (Novi Sad, Beograd, Oradea, Cluj, Zagreb, Berehove).

Six researchers participate in international scientific associations as committee members, five researchers are members of the editorial board of international geographical journals. One scientific advisor is the vice-president of ESSC (European Society for Soil Conservation) and president of Hungarian National Committee of IGU (International Geographical Union). In 2009 the researchers of GRI HAS published seven papers in international journals and eleven items in conference publications.

IV. Brief evaluation of successful national and international grants

In 2009 the researchers of the institute won two OTKA grants („The role of gully erosion in the present-day relief development of Hungary” and „Ethnic geography of the countries in the Carpatho-Pannonian Area”). All in all the researchers were working on five OTKA grants.

Two EU FP6 projects continued into the year. In the frame of ACRE („Accommodating Creative Knowledge – Competitiveness of European Metropolitan Regions within the Enlarged Union”) project the main findings were published under the title „Comparing paths of creative knowledge regions”. Summarising the research results was the main task in case of SefoNe (Searching for Neighbours – the dynamics of physical and mental borders in the Enlarged European Union) project, which conducted research in the issue of interethnic and cross border neighbourhood relations in the Carpathian basin among other areas.

The tasks were fulfilled in the „Zwischen Gentrification und Abwärtsspirale” project in cooperation with Institut für Länderkunde (Leipzig, Germany) and coordinated by HAS and DFG. In the frame of this project the comparative evaluation of neighbourhoods in five Central European cities were performed to promote the outline and implementation of efficient rehabilitation plans.

In SOWAP project started in 2003 the tasks (experiments and their evaluation) planned for 2009 were carried out. The BORASSUS project started in 2005 finished in 2009, publishing of the research results is in progress.

V. The most important publications and patents in 2009

- DÖVÉNYI Z. 2009. A belső vándormozgalom Magyarországon: folyamatok és struktúrák, *Statisztikai Szemle* 87 (7–8): 748–762.
- EGEDY T. 2009. Városrehabilitáció és életminőség, *MTA Földrajztudományi Kutatóintézet*, Budapest, 152 p.
- JAKAB G.I., MADARÁSZ B. and SZALAI Z. 2009. Gully- or sheet erosion? A case study at catchment scale, *Hungarian Geographical Bulletin* 58 (3): 151–161.
- KERTÉSZ Á. 2009. The global problem of land degradation and desertification, *Hungarian Geographical Bulletin* 58 (1): 19–31.

- KISS E.É. 2009. Major trends in the development of industrial areas of Budapest in the early 21st century, *Hungarian Geographical Bulletin* 58 (3): 163–180.
- KOCSIS K., BOTTLIK Zs. 2009. Magyarország etnikai térképe, Ma. 1: 500 000 = Ethnic map of Hungary, 2001, *MTA Földrajztudományi Kutatóintézet, Budapest*.
- KOCSIS K., SCHWEITZER F. (eds.) 2009. Hungary in Maps, Geographical Research Institute of H.A.S., Budapest, 211 p.
- KOCSIS K., TINER T. 2009. Geopolitics of pipelines and Eastern Europe with especial regard to Hungary, *Hungarian Geographical Bulletin* 58 (1): 49–67.
- KOVÁCS Z. 2009. Hinterland Development In: The International Encyclopedia of Human Geography, Volume 5 (Ed. KITCHIN, R., THRIFT, N.), Elsevier, Oxford, 128–135.
- KOVÁCS Z. 2009. Social and economic transformation of historical neighbourhoods in Budapest, *Tijdschrift Voor Economische En Sociale Geografie* 100 (4): 399–416.
- LÓCZY D., KIS É. and SCHWEITZER F. 2009. Local flood hazards assessed from channel morphometry along the Tisza River in Hungary, *Geomorphology* 113 (3–4): 200–209.
- MICHALKÓ G., RÁTZ T. and ILLÉS S. 2009. The gate of happiness: Budapest in the focus of European mobility In: Migration and citizenship : the role of the metropolis in the European Union process of enlargement (Ed. MORRI, R., PESARESI, C.), *Società Geografica Italiana*, Roma, pp 143–152.
- SCHWEITZER F. 2009. Strategy or disaster: flood prevention related issues and actions in the Tisza River basin, *Hungarian Geographical Bulletin* 58 (1): 3–17.

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‘Searching for Neighbours’: summary of an EU research project

The three-member research group of the Geographical Research Institute Hungarian Academy of Sciences (GRI HAS) participated in an EU FP 6 project called ‘SefoNe – Searching for Neighbours: Dynamics of Physical and Mental Borders in the New Europe’. The three-years long research (March 2007–February 2010) was designated to explore and compare models of ‘translocal’ neighbourhood within the enlarged European Union, where these relations are periodically challenged by „nationalised” political conflicts. The main aims of the project were to understand the interdependency of state borders and mental borders in the creation of good neighbourhood relations, and to try to emphasize what ‘good-neighbourhood’ means for people in culturally diverse border regions. A special attention was laid on bottom-up activities, initiatives, such as those embodied in cultural events, that aimed to strengthen cultural tolerance and neighbouring in culturally diverse communities.

The research consortium investigated three different borders, from which the GRI HAS carried out research in the first strand that was dedicated to ‘Transnational and translocal neighbourhoods across state borders’. In this strand on the one hand the Greek-Turkish Cypriot border (studied by the University of Nicosia) on the other hand the borders of different grades of permeability in Hungary were in focus. In both cases the borders are marked by long-standing political conflicts and separate formerly multicultural settlements, regions, populations.