

# GI in agricultural monitoring and land use planning

## International Summer School

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In 2001, a series of one-week courses, called the “Geoinformation International Summer School (GISS)” was started at the University of West Hungary, College of Geoinformatics. The main promoter of these events is the UNIGIS International, which is co-ordinated by the European Masters in Geographical Information Science (EMGISc) consortium. In 2003, the International Institute for Geo-Information Science and Earth Observation (ITC, the Netherlands) joined the organizing team. The latest course in this series took place in August 12-19 2005, which was an official event of International Federation of Surveyors (FIG) and Association of GI Laboratories in Europe (AGILE).

This year, GISS focused on the area of GIS applications in agricultural planning and monitoring. Some of the topics which were touched upon were: Comparison of implementations of the EU area-based subsidizing system, agricultural parcel identification systems, remote sensing based monitoring and change detection, land use planning, interaction between wetlands and the surrounding areas; developing different land use scenarios in GIS, Internet GIS in public use and collaboration. Special emphasis was given to the impacts of the accession of new countries to the EU.

The students were enrolled into 3 thematic work groups:

- **WG1: Remote sensing based monitoring of agricultural subsidies utilization**
- **WG2: Sustainable land use planning and monitoring**
- **WG3: Web GIS in public use and collaboration**

The project-oriented programme has included lectures in plenary session, methodological seminars, training sessions, fieldwork, work in computer labs and presentation of the results achieved by the students in the work groups.

## *PANORÁMAKÉP HELYE*

ESRI, EUROSENSE and GraphIT were the main sponsors of the event. The Institute of Geodesy, Cartography and Remote Sensing (FÖMI), the International Institute for Geo-Information Science and Earth Observation (ITC) and the Ministry of Agriculture and Rural Development have contributed to its successful organisation. Guest lecturers from University of Natural Resources and Applied Life Sciences Vienna (BOKU, Austria), AgrarMarkt Austria, Joint Research Centre (JRC, Italy), Szent István University (Hungary) and University of Debrecen (Hungary). A number of students received grants offered by the sponsors to cover their participation fees. As the last action, the students gave shared their observations with the organisers by filling up an evaluation questioner.

## VÉLEMÉNYEK HELYE

Very **important** and useful for the future development is the evaluation by the participants that spurs the further improvement of the summer school. The GISS 2005 was evaluated for such reason and also as part of evaluation programme for REVE project – Real Virtual Erasmus, in which the College of Geoinformatics participates.

Students received evaluation forms with two types of questions. The first type contained the questions, which were answered by grading from 9 to 1. The second type required answers in short, freely formulated sentences. Four major topics were covered by the evaluation form: Content, Materials/facilities, Support and Logistics.

The evaluation reflected real satisfaction but also brought up enough issues to consider in the future. Students were mostly satisfied with content of summer school and judged it to be valuable and useful for their professional development. Important for organizers was to see, which topics students wanted to discuss more deeply or on the contrary, which ones they would have suggested to tackle more briefly. Useful suggestions were made about topics, in which students are interested in the future: **using RS and GIS in environmental impact assessment; environmental modelling with GIS; GIS in water management; analyzing crustal movements using geophysics, geology, GPS and surveying; advanced WebGIS; dynamic web design and etc.**

Materials and facilities including handouts, data, software, equipment and classroom settings were also mostly positively evaluated. Anyway, there were some remarks from students calling for improvement of software availability and asking for more work with GIS software.

Support given to students during the GISS 2005 covered GISS website that was daily updated and thus were positively assessed by students. Furthermore students were very satisfied with leaders performance with average grade 8. It is important to mention there were three leaders of three working groups. With very high mark was valued staff. Students also well assessed the co-operation among themselves, but some remarks alerted us about weaker communication between Hungarian and foreign participants.

For comfortable feeling of students we should not take lightly the logistics part of questionnaire. Actually in this part we can see some weaker places calling for improvement as accommodation and meal. The students did not see any problems during registration and workshop seemed to them rather well organised. The pace of the workshop as last criteria was balanced.

We have found for us very interesting answers in the last part of questionnaire and we must admit that they pleased us and give us new power to further work. On the question whether students would recommend this workshop to a friend, 90 % of students answered yes. Next question that asked students whether they would come here to International Summer School again was answer by 75 % yes, only by 10 % no and rest of students did not know or did not answer at all.

Finally, let us listen to the personal experiences of a student from each work group:

## **Veronika Weignerova (Czech Republic): WG 2 – Sustainable land use planning and monitoring: sustainable coexistence of nature and agriculture**

The WG 2 was the biggest working group lead by Zoltán Vekerdy, a hydrologist working at ITC in the Netherlands. The group was focusing on the land use issues in the Császár watershed that is located in the vicinity of Lake Velence. This is a test area of the College of Geoinformatics, approximately 10 km from Székesfehérvár on the way to Budapest. Students were acquainted with the area on the field trip in the very beginning of the summer school. Our work group focused on the balance between natural and agricultural land cover types in the watershed.

During the practical exercises, several individual tasks were given to us, which were at the end compiled into one summarising presentation on the last day. The topics included land cover/use mapping from satellite images; operations on the digital elevation model of the basin; and GIS methods in land use planning using and further developing a zonation system of ecotypes.

We had a colourful group of students amalgamated from representatives of different EU countries and even two participants from China. This variety meant different backgrounds and specializations that could be seen as big advantage for the group work, leading to interesting results at the end.

The Chinese participants had a special task. They were working on the implementation of a remote sensing based Chinese ecological-environmental model to the Lake Velence test area. This task is part of a Chinese-Hungarian project, based on bi-lateral cooperation.