

Final report on the project
AKTION 75p8
“Rainfall kinetic energy as driving force of Water erosion”
for year 2016

Czech partner:

Department of Drainage Irrigation and Landscape Engineering
Faculty of Civil Engineering
CTU in Prague
Tomáš Dostál doc.Ing.Dr.

Austrian partner:

Department of Water, Atmosphere and Environment,
Institute of Hydraulics and Rural Water Management
University of Agricultural Sciences (BOKU) Wien
Andreas Klik Prof., Dipl.Ing. Dr.

The topic of the project for 2016 had been at first exchange visit of both teams, to coordinate ongoing research projects, cooperation and to prepare the intensive student courses with duration one week each (1 week at CTU Prague and 2 weeks at BOKU Wien – one for Czech and one in Prague and second in Wien for Austrian students) and at second, intensive common student courses themselves:

- Intensive course for 14 Czech students within Vienna (6. – 11.11.2016) – 14 students + staff CTU Prague (Applied methods of soil erosion research)
- Intensive course for 20 Austrian students at BOKU Vienna, given by Czech staff (20. – 25.11.2016) – 2 staff CTU Prague in Vienna (GIS simulations of soil erosion and sediment transport processes)
- Intensive course for 40 Austrian students at CTU Prague (40 students + 2 staff BOKU Vienna) (27.11. – 1.12.2016) (GIS simulations of soil erosion and sediment transport processes)
- Visit of two BOKU staff at CTU Prague during 5. – 7.12.2016 (evaluation of the courses, planning of further activities, assessment of measured data) (Dr.Romanofski, Dr.Faulhammer)
- Visit of two Czech staff at BOKU Vienna during 8. – 10.12.2016 (doc.Krásá, Dr.Schwarzová)

Within the project, all three planned courses were realized in planned duration and terms, just with increase of number of participants at Austrian side, without increasing of planned costs. Concerning of the staff visits also some partial changes had been adopted, mainly in terms of the visits. The organizers succeeded and saved part of the money, mainly due to they have got a significant credit for accommodation prices in Prague, in comparison to originally announced ones and also reduction of price of bus tickets compared to train, which was originally planned. Also, after agreement with Austrian partner, allowances for students in Prague was reduced significantly. Due to this fact, the number of Austrian participants of the course could be increased significantly (40 students compared to 30 planned). The

same, number of Czech students was increased from planned 13 to 14, without increasing of the budget. Ca 10 native student participated at the courses for foreign students in Prague and in Vienna.

The detailed specification of the activities and costs follows:

I. course at BOKU Wien under the title “Applied soil erosion research methods“ during 6. – 11.11.2016 with following program:

6.11.2016 – arrival of the participants, welcome
7.11.2016 – introduction, general methodological presentations and lectures
8.11.2016 – modeling of erosion processes in soil laboratory
9.11.2016 – field trip to experimental plots, presentation of soil conservation technology
10.11.2016 – calculation of measured results, statistical evaluation of measured data
11.11.2016 - final discussion, conclusion, finishing of the course, departure of the participants

There were in total 24 students and 4 teachers participating at the course – from the Czech Republic 14 students and 2 teachers (Doc.Dr.Ing. Tomáš Dostál and Ing.Miroslav Bauer) and from Austria 10 students and 2 teachers (Prof. Dr. Andreas Klik a Florian Darmann).

II. course at BOKU Wien under the title „ GIS simulations of soil loss and sediment transport “ during 20. – 25.11.2016 with following program:

20.11.2016 – arrival of the professors, Introduction
21.11.2016 – introduction lectures, basics of computer modeling
22.11.2016 – Soil loss assessment using GIS techniques
23.11.2016 – sediment transport from the watershed assessment, using GIS technology,
24.11.2016 – final balancing, map production
25.11.2016 - results assessment, final discussion, conclusions, departure of the participants

The course was organized for students who could not or were not interested to participate at the same course held next week at CTU Prague. In total 15 Austrian students participated. The course has been given by doc.Dostál and doc Krása from CTU Prague and Prof.Klik from BOKU Wien. No expenses were spent related to this course.

III course at CTU in Prague under the title „ GIS simulations of soil loss and sediment transport “held on 27.11. – 1.12.2016 with following program:

27.11.2016 – arrival of the participants, introduction
28.11.2016 – introduction lectures, basics of computer modeling
29.11.2016 – soil loss calculation using GIS techniques
30.11.2016 – sediment transport from the watershed assessment, using GIS technology, measurement on the laboratory rainfall simulator,

1.12.2016 - results assessment, final discussion, conclusions, departure of the participants

There were in total 50 students participating at the course and 6 teachers – 10 students and 5 teachers (doc.Dr.Ing. Tomáš Dostál, doc. Ing. Josef Krása Ph.D., Ing.Miroslav Bauer, Ing.Tomáš Laburda a Ing. Pavla Schwarzová Ph.D) from the Czech Republic and 40 students and 2 teachers from Austria (Prof. Dr. Andreas Klik, Florian Darmann). The number of Austrian students has been increased from planned 30 to 40, due to very high interest at BOKU to take a part at the course. The number of participants from Austria has been increased due to the fact, that cheaper accommodation have been provided with university facilities and some funds were saved also from travel costs of Czech group to the course in Austria, where cheaper train has been used. Also, in agreement with recommendation of AKTION board and in agreement with Austrian partner, daily allowances of the students were reduced to 830,- CZK/week.

At the end of common courses the participants obtained certificates, which approved, that students passed intensive course, held under AKTION project 75p8. The sample of the certificate is enclosed. The evaluation of the course by several Czech students is also enclosed at the project report.

IV. visit of two staff of BOKU Wien at CTU Prague during 5. – 7.12.2016

The plan was to evaluate the courses, to plan further activities and to assess the measured data within the courses in Prague and Vienna. (Dr.Romanofski, Dr.Faulhammer)

V visit of two staff of CTU Prague at BOKU Wien during 8. – 10.12.2016

The task was to bring to BOKU Wien the nozzles of CTU rainfall simulator to calibrate them at disdrometer, available at BOKU Wien. Also, common publication, summarizing common measured results was prepared during short common workshop. The only travel expenses were covered from AKTION project. Expenses of Doc.Krasa were covered from the project just partly, as his mission included also meeting at Petzenkirchen, realized within other research project. Living expenses were in both cases covered from another sources – not from AKTION project.

Allocated budget has been used effectively and fully with no excess. Detailed specification is presented at the table:

<i>Activity</i>	<i>Expenses – planned (CZK)</i>	<i>Expenses – reality (CZK)</i>
Travel expenses Prague – Vienna (student course)	17.500,-	11.590,-
Travel expenses Prague – Vienna (staff visit and teaching)	6.400,-	8.770,-
Allowances for student course in Prague	47.000,-	38.200,-
Accommodation for the course in Prague	75.500,-	88.160,-
Allowances BOKU staff in Prague	3.000,-	3.000,-
Accommodation BOKU staff in Prague	3.200,-	2.880,-

Total	152.600,-	152.600,-
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All the invoices are stored at the economic department of CTU Prague. Regardless of relatively significant changes in project organization and general enlargement of the project's goals, the expenses have not been exceeded at all.

List of participants from the Czech Republic at the course at BOKU Wien in November 2016:

- | | | |
|----|------------|----------|
| 1 | Melichar | Jonáš |
| 2 | Joštová | Adéla |
| 3 | Kubínová | Romana |
| 4 | Zemanová | Tereza |
| 5 | Brdková | Pavλίna |
| 6 | Vavruška | Vít |
| 7 | Tománková | Nela |
| 8 | Brunnerová | Zuzana |
| 9 | Blovská | Markéta |
| 10 | Čermáková | Kateřina |
| 11 | Rada | Milan |
| 12 | Bureš | Dominik |
| 13 | Popelková | Kateřina |
| 14 | Vacíková | Anna |

Professors:

1. Doc.Ing.Dr. Tomáš Dostál
2. Ing.Miroslav Bauer

List of participants from Austria at the course at CTU Prague in November/December 2016:

- | | | |
|----|-------------|-------------------|
| 1 | Andersson | Jakob Martin Arne |
| 2 | Asghari Asl | Kamyar |
| 3 | Busch | Erich |
| 4 | Havlíček | Josef |
| 5 | Hecht | Julia Elisabeth |
| 6 | Hofer | Gerald |
| 7 | Holzmann | Lea |
| 8 | Jury | Gerhild |
| 9 | Kienböck | Matthias |
| 10 | Komissarov | Mikhail |
| 11 | Mold | Lisa |
| 12 | Müller | Helene |
| 13 | Ördögh | Max |
| 14 | Stelzer | Sophie |
| 15 | Tatzreiter | Raphael |
| 16 | Wächter | Maria Franziska |
| 17 | Wiesmair | Elke |
| 18 | Wimmer | Doris |
| 19 | Wittberger | Carina |
| 20 | Wypchlo | Stephanie |

21	Yeung	Wing-Shan Sandra
22	Ziesel	Georg
23	Alonso Vazquez	Loreto
24	Aschenbrenner	Paula Amrei Rosario
25	Augdoppler	Miriam
26	Bahrami	Bahareh
27	Breuß	Judith Johanna
28	Büchen	Steffen
29	Döber	Stefan
30	Germann	Verena
31	Melaku	Nigus Demelash
32	Meshkova	Natalia
33	Odusanya	Abolanle Elizabeth
34	Pereira de Souza	Renata
35	Pichereau	Baptiste
36	Plangger	Peter Andreas
37	Rehrl	Anna-Lena
38	Ruepp	Anna
39	Schelakovski	Nathalie
40	Wille	Florian Reinhard

Professors:

1. Prof.Andreas Klik
2. Florian Darmann

V Praze dne 29.1.2017

Doc.Ing.Dr.Tomáš Dostál

