

Final report on the project
AKTION 78p17
**“Research and modelling of on- and off-site effects of soil
erosion and sediment transport”**
for year 2017

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.

Reported project is first half of two years project, approved by AKTION agency for 2017 – 2018.

The topic of the project for 2017 had been at first exchange visit of teams of CTU Prague and BOKU Wien, to coordinate ongoing research projects, cooperation and to prepare the intensive student courses with duration of one week each (1 week at CTU Prague and one week 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:

- Opening visit of 2 Austrian PhD students (N.Balenovic, L.Johannsen) to set up year plans for 2017 (3. – 4.4.2017)
- Intensive course for 14 Czech students at BOKU Wien Vienna (22. – 26.10.2017) – 14 students + 2 staff CTU Prague (Applied methods of soil erosion research)
- Intensive course for 32 Austrian students at CTU Prague (32 students + 2 staff BOKU Vienna) (5.11. – 9.11.2017) (GIS simulations of soil erosion and sediment transport processes)
- Visit of two BOKU staff at CTU Prague during 24. – 26.11.2017 (evaluation of the courses, planning of further activities, assessment of measured data) (Dr.Romanofski, Dr.Faulhammer, Dr. Fellner)
- Visit of one Czech staff at BOKU Vienna during 30.11 – 2.12.2017 (M.Běhouňková) to transport disdrometers after experimental season at CTU to BOKU and installation for common experiments
- Visit of one Czech staff at BOKU Vienna during 4. – 5.12.2017 (Ing.M.Bauer) to participate at common experimental campaign at laboratory rainfall simulator. The trip has been co-financed from other sources, as there was also other reasons. Only part of travel costs, no allowances were covered from AKTION.

- Visit of one Czech staff at BOKU Vienna during 7. – 9.12.2017 (Dr.Schwarzová) to participate at finalization of common laboratory experimental campaign to compare disdrometers, unstallation of devices and transport back to Czech Republic

Within the project, all two 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 and number of 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. Due to this fact, the number of Austrian participants of the course could be increased (32 students compared to 30 planned) and additional two days visit of two people from BOKU (April 2017) could have been supported. 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. Visit of two Ph.D.students of BOKU Wien at CTU Prague (3. – 4.4.2017)

(N.Balenovic and L.Johannson spent two days in Prague to plan fall activities within students courses and scheme for fall common planned experiments to compare different distrometers (unique devices, operated at CTU Prague and BOKU Wien from different producers (THIESS, Parcivell)).

II. Course at BOKU Wien under the title “Applied soil erosion research methods“ during 22. – 26.10.2017 with following program:

22.10.2017 – arrival of the participants, welcome, introduction

23.10.2017 – general methodological presentations and lectures, first part of laboratory works (rill erodibility experiments, CO₂ analyses experiment)

24.10.2017 – modeling of erosion processes in soil laboratory (rill erodibility experiment, aggregate stability experiment, laboratory rainfall simulator).

25.10.2017 – field trip to experimental plots, presentation of soil conservation technology

26.10.2017 – calculation of measured results, statistical evaluation of measured data, 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.Barbora Jáchymová) and from Austria 10 students and 2 teachers (Prof. Dr. Andreas Klik and Eng. Florian Darmann). Name list is enclosed.

III. Course at CTU in Prague under the title „ GIS simulations of soil loss and sediment transport “held on 5. – 9.11.2017 with following program:

5.11.2017 – arrival of the participants, welcome, introduction

6.11.2017 – introduction lectures, basics of computer modeling

7.11.2017 – soil loss calculation using GIS techniques

8.11.2017 – sediment transport from the watershed assessment, using GIS technology, measurement on the laboratory rainfall simulator,
9.11.2017 - results assessment, final discussion, conclusions, departure of the participants

There were in total 42 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 and Ing. Pavla Schwarzová Ph.D) from the Czech Republic and 32 students and 2 teachers from Austria (Prof. Dr. Andreas Klik, Eng.Florian Darmann). The number of Austrian students has been increased from planned 30 to 32, due to 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 bus has been used. Name list is enclosed.

At the end of common courses the participants obtained certificates, which approved, that students passed intensive course, held under AKTION project 78p17. The sample of the certificate is enclosed. The evaluation of the course by several Czech students and report of their activities within the course, which they submitted at CTU Prague to be evaluated are also enclosed at the project report. Several photos from course in Vienna and Prague are also included to document various activities performed.

IV. Visit of three staff of BOKU Wien at CTU Prague during 24. – 26.11.2017

Three administrative and research staff (Dr.Romanofski, Dr.Faulhammer, Dr.Fellner) visited CTU Prague after courses, to evaluate results, to plan further activities (for the end of year – common experiments – and for next years).

V. Visit of three staff of CTU Prague at BOKU Wien during three single visits

30.11.-2.12.2017 – M.Behounekova – to transport disdrometer THIESS to BOKU Wien, to help with installation and to start experimental campaign on laboratory rainfall simulator, to compare both experimental devices (CTU – THIESS, BOKU – Parcivell)

4. – 5.12.2017 – M.Bauer – to participate at experimental campaign and data assessment with two disdrometers under laboratory rainfall simulator.

7. – 9.12.2017 – P.Schwarzova – participation at experimental campaign, data acquisition and pre-processing, uninstallation of devices and transport of THIESS disdrometer back to CTU Prague

Some money from CTU budget has been saved compared to original plan, regardless of significant extension of activities (increased number of Austrian students, increased number of Austrian staff visits and increasing of Czech staff visits at BOKU). Those money were effectively used to cover material expenses directly related to his and previous courses – mainly related to printing of study materials, certificates, data distribution and so on (printing cartridges, papers, presenter, etc.). Effective use of those money are declared also by Faculty representative – see bellow.

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)	18.600,-	10.185,-
Travel expenses Prague – Vienna (staff visit and teaching)	3.200,-	12.778,-
Allowances for student course in Prague	47.000,-	47.240,-
Accommodation for the course in Prague	83.000,-	53.600,-
Allowances BOKU staff in Prague	3.000,-	6.500,-
Accommodation BOKU staff in Prague	3.200,-	4.960,-
	0	22.737,-
Total	158.000,-	158.000,-

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 October 2017:

1. Prokop Šindlar
2. Vera Oberg
3. Anna Žohová
4. Anna Kuckelmann
5. Celien Mertens
6. Hedvika Šimandlová
7. Jiří Wildt
8. Martin Flaks
9. Jakub Novotný
10. Lucie Vodrážková
11. Kristýna Svitavská
12. Adéla Roudnická
13. Jakub Stašek
14. Anna Prokopová

Professors:

1. Doc.Ing.Dr. Tomáš Dostál
2. Ing.Barbora Jáchymová

List of participants from Austria at the course at CTU Prague in November 2017:

- | | | |
|----|--------------|--------------------|
| 1 | Aigner | Philipp |
| 2 | Balenovic | Nives |
| 3 | Bugl | Felix |
| 4 | Büchen | Steffen |
| 5 | Dober | Daniel |
| 6 | Döber | Stefan |
| 7 | Freiberger | Florentina |
| 8 | Fritsch | Emil |
| 9 | Haimann | Marlene |
| 10 | Hemetsberger | Norbert Johann |
| 11 | Johannsen | Lisbeth Lolk |
| 12 | Knoth | Thomas |
| 13 | Melaku | Nigus Demelash |
| 14 | Meshkova | Natalia |
| 15 | Mitterlehner | Stefan |
| 16 | Mwanake | Hope Wakio |
| 17 | Neuhauser | Herbert |
| 18 | Neuwirth | Stefanie |
| 19 | Odusanya | Abolanle Elizabeth |

20	Omonge	Paul Omondi
21	Pereira de Souza	Renata
22	Pichereau	Baptiste
23	Preiml	Max
24	Prinz	Susanne
25	Rapottnig	Leena
26	Rehrl	Anna-Lena
27	Ruppert-Gutmann	Helena
28	Ruppert	Karl
29	Schorn	Josef
30	Schur	Daniel
31	Spechtl	Barbara
32	Thiemann	Zeno Sebastian

Professors:

1. Prof.Andreas Klik
2. Florian Darmann

Project leader and Head of Faculty declares, that all CZK financial sources were used effectively and with maximum care to provide profit for students, participating at main dedicated activities (student courses, held at CTU Prague).

In Prague 25.1.2017

Project leader
Doc.Ing.Dr.Tomáš Dostál



Head of institution – dean
Prof.Ing.Alena Kohoutková, CSc.

