

Final report on the project  
**AKTION 90p3**  
**“Splash erosion – initial stage of soil erosion processes”**  
***for year 2021***

Czech partner:  
Department of Landscape Water Conservation  
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 the second half of two-years project, approved by AKTION agency for 2019 - 2020. However, the project during 2020 has been stopped by COVID19 restrictions at both sides, Austrian partner applied for project extension, while Czech partner returned funding and applied formally for new project for 2021, identical with one from 2020.

The topic of the project for 2021 had been at first exchange visit of teams of CTU Prague and BOKU Wien, to coordinate ongoing research projects and students activities. At second it was to realize main educational activities: two intensive student courses with duration of one week each (one week at CTU Prague and one week at BOKU Wien – one for Czech students in Wien and second for Austrian students in Prague). Following activities were performed within the AKTION project during 2021:

- Intensive course for Czech students at BOKU Wien (10. – 14.10.2021) – 14 students + 2 staff CTU Prague (“Applied methods of soil erosion research”) (list of participants – see attachment)
- Intensive course for Austrian students at CTU Prague (30 students + 2 staff BOKU Vienna) (14.11. – 18.11.2021) (“Splash erosion: the initial stage of soil erosion process - Assessment of soil erosion and surface runoff from agriculturally used watersheds, using GIS techniques”) (list of participants – see attachment)
- Visit of one BOKU PhD student at CTU Prague during 21. – 24.9.2021 (4 days – Francis Musyoka) - (planning of upcoming activities – both student courses)
- Visit of one Czech staff at BOKU Wien during 16. – 18.12.2021 (doc. T.Dostál – to conclude all year activities and prepare preliminary program for project application for 2022. Delivery of disdrometer from CTU Prague to BOKU Vienna – the reason for car use.
- Visit of one Czech staff at BOKU Vienna during 10. – 12.12.2021 (doc. Josef Krása) to participate at common experimental campaign at laboratory rainfall simulator – to measure kinetic rainfall energy. Travel expenses were not

required by the project, due to combination of transportation with other person within another project.

Unfortunately, no further planned visits of BOKU staff at CTU, nor CTU staff at BOKU were realized, due to pandemic restrictions, applied during November/December 2021 in both countries.

Within the project, all two main planned activities - student courses, were realized in planned duration and terms, with planned number of participants. Concerning of the staff visits, some partial changes have been adopted, mainly in terms and number of visits – as mentioned above, due to COVID restrictions during fall 2021. The organizers succeeded and saved part of the money, mainly due to they have got a significant credit for accommodation prices in Prague + part of Austrian students preferred to find their private accommodation due to COVID situation, or stayed with their friends here in Prague. Also reduction of price of transportation of train tickets switching to bus.

Due to savings and not realized staff visits, we saved in total 48.234,- CZK, which were returned back to AKTION office.

#### **Detailed specification of main activities:**

##### ***I. Course at BOKU Wien under the title “Applied methods of soil erosion research “ during 10. - 14.10.2021 with following program:***

10.10.2021 – arrival of the participants, welcome, introduction

11.10.2021 – general methodological presentations and lectures, first part of laboratory works (rill erodibility experiments, splash erosion experiments)

12.10.2021 – modeling of erosion processes in soil laboratory (rill erodibility experiment, aggregate stability experiment). Common dinner.

13.10.2021 – field trip to experimental plots, presentation of soil conservation technology – Mistelbach, Hollabrunn

14.10.2021 – 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. Miroslav Bauer, Ph.D.) and from Austria 10 students and 2 teachers (Prof. Dr. Andreas Klik and Eng. Gunther Liebhard). Name list is enclosed.

##### ***II. Course at CTU in Prague under the title „Assessment of soil erosion and surface runoff from agriculturally used watersheds, using GIS techniques“ held on 14. – 18.11.2021 with following program:***

14.11.2021 – arrival of the participants, welcome, introduction

15.11.2021 – introduction lectures, basics of computer modeling. Common dinner.

16.11.2021 – soil loss calculation using GIS techniques. Experimental determination of splash erosion and kinetic energy of raindrops using rainfall simulator.

17.11.2021 – sediment transport from the watershed assessment, using GIS technology

18.11.2021 - results assessment, final discussion, conclusions, departure of the participants

There were in total 40 students participating at the course and 8 teachers – 10 students and 6 teachers (doc.Dr.Ing. Tomáš Dostál, doc. Ing. Josef Krása Ph.D., Ing.Miroslav Bauer, Ph.D., Ing. Martin Neumann, Ing.Petr Kavka, Ph.D. and Ing.Michal Vrána) from the Czech Republic and 30 students and 2 teachers from Austria (Prof. Dr. Andreas Klik, Dr.. Giuseppe Brunetti). 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 90p3. The sample of the certificate is enclosed. The one sample report of one student group worked during their activities within the course, which they submitted at CTU Prague to be evaluated are also enclosed at the project report.

Allocated budget has been used effectively. Saved money – due to more economic transportation, due to better prices of accommodation and private accommodation of several Austrian students in Prague and reduction of staff travelling due to COVID restrictions – were returned to project provider – AKTION agency. Detailed specification is presented at the table:

<b>Activity</b>	<b>Expenses – planned (CZK)</b>	<b>Expenses – reality (CZK)</b>
Travel expenses Prague – Vienna (student course)	18.600,-	12.590,-
Travel expenses Prague – Vienna (staff visit)	3.200,-	5.464,-,-
Allowances for student course in Prague	47.000,-	47.000,-
Accommodation for the course in Prague	83.000,-	42.712,-
Allowances BOKU staff in Prague	3.000,-	2.000,-
Accommodation BOKU staff in Prague	3.200,-	0,-
Returned to project provider – AKTION agency	0	48.234,-
<b>Total</b>	<b>158.000,-</b>	<b>158.000,-</b>

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 2021:**

Students:

1. Dušková Kateřina
2. Do Thi Mai Dung
3. Šmahel Viktor
4. Křížová Monika
5. Mužík František
6. Hoffmann Marek
7. Šišková Markéta
8. Hainc Martin
9. Václavová Karolína
10. Školová Kateřina
11. Benda Pavel
12. Jan Kubát
13. Parlář Petr
14. Šlancová Veronika

Professors:

1. Doc.Ing.Dr. Tomáš Dostál
2. Ing. Miroslav Bauer, Ph.D.

**List of participants from Austria at the course at CTU Prague in November 2021:**

Students:

1. Ginga Adrian
2. Denzel Jacqueline
3. Bomatter Kaspar
4. Mirghorbaniganji Seyedehroja
5. Spörk Thomas
6. Čepon Neža
7. Schäfer Sarah Irmgard
8. Hövel Adriane
9. Horacek Nadja Isabelle
10. Merlet Hugues
11. Jeanneau Martin Nicolas
12. Resch Franz Josef
13. Vadibeler Devakunjari
14. Cornelia Fuernkranz
15. Karl Ruppert
16. Maxime Chavet
17. Aschauer Florian
18. Bauer Thomas
19. Bischinger Melissa
20. Burrell Leigh David

21. Chovancova Sabina
22. Deissenberger Florian
23. Ecker Ursula
24. Exel Thomas
25. Feigl Dominik
26. Fejer Doris
27. Fessler Jakob
28. Hamader Klaus
29. Huber Lisa
30. Huber Petra

Professors:

1. Prof. Andreas Klik
2. Dr. Giuseppe Brunetti

*Project leader and Head of Faculty declare, 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 25.1.2021

Project leader  
Doc. Ing. Dr. Tomáš Dostál

Head of institution – dean  
Prof. Ing. Jiří Máca, CSc.

