

Final report on the project
AKTION 94p3
“Land degradation through soil erosion – from mean to extreme”
for year 2022

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This is report of the project, which proposal was submitted in September 2022 for fall 2022.

The topic of the project for 2022 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 2022:

- Intensive course for Czech students at BOKU Wien (7.11. – 11.11.2022) – 14 students + 2 staff CTU Prague (**“Applied methods of soil erosion research”**) (list of participants – see bellow)
- Intensive course for Austrian students at CTU Prague (31 students + 2 staff BOKU Vienna) (20.11. – 24.11.2021) (**“Land degradation through soil erosion – from mean to extreme”** - Assessment of soil erosion and surface runoff from agriculturally used watersheds, using GIS techniques) (list of participants – see bellow)
- Visit of one BOKU PhD student at CTU Prague during 14.12. – 16.12.2022 (3 days – Marton Toth) - (planning of upcoming activities – both student courses)
- Visit of Dr.Strohmeier in Prague 25. – 26.11.2022, to conclude the results of the project just after its end – he stayed in Prague after course end, to save funds for one way transportation.
- Visit of one Czech staff at BOKU Wien during 15.12 – 17.12.2022 (doc. Tomáš Dostál – to conclude all year activities and prepare preliminary program for project application for 2023. T.Dostál was travelling with another person, therefore travelling expenses were not accounted to AKTION project.
- Visit of one Czech staff at BOKU Vienna during 7.12 – 9.12.2022 (doc. Josef Krása) to participate at common experimental campaign at laboratory rainfall

simulator – to measure kinetic rainfall energy. Delivery of disdrometer from CTU Prague to BOKU Vienna – the reason for car use

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 very limited partial changes have been adopted, mainly in terms of form and duration of visits – as mentioned above. 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, 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 8.314,- 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 7. – 11.11.2022 with following program:

- 7.11.2022 – arrival of the participants, welcome, introduction
- 8.11.2022 – general methodological presentations and lectures, first part of laboratory works (rill erodibility experiments, aggregate stability)
- 9.11.2022 – modeling of erosion processes in soil laboratory (rill erodibility experiment, aggregate stability experiment, presentation of disdrometer). Common dinner.
- 10.11.2022 – field trip to experimental catchment and research institute of soil and water conservation BAW – Petzenkirchen and Wachau region, presentation of soil conservation technology
- 11.11.2022 – calculation of measured results, statistical evaluation of measured data, students presentation, 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 (Dr. Stefan Strohmeier and Dr.Giuseppe Brunetti). 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 20. – 24.11.2022 with following program:

- 20.11.2022 – arrival of the participants, welcome, introduction
- 21.11.2022 – introduction lectures, basics of computer modeling, GIS presentation. Common dinner.
- 22.11.2022 – soil loss calculation using GIS techniques. Experimental determination of splash erosion and kinetic energy of raindrops and spatial homogeneity laboratory measurement using rainfall simulator.
- 23.11.2022 – sediment transport from the watershed assessment, using GIS technology

24.11.2022 - results assessment, final discussion, conclusions, departure of the participants

There were in total 40 students participating at the course and 6 teachers – 9 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 31 students and 2 teachers from Austria (Dr. Stefan Strohmeier, 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 94p3. 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, same of written evaluation of the course by several Czech students.