



BULGARIAN-SWISS COOPERATION PROGRAMME  
БЪЛГАРО-ШВЕЙЦАРСКА ПРОГРАМА ЗА СЪТРУДНИЧЕСТВО



## Arsenic contamination of Ogosta river: Linking biogeochemical processes in floodplain soils with river system dynamics (ASCOR)

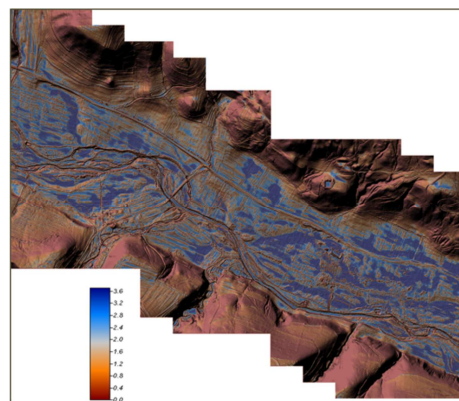
**Starting Date** 01.11.2014

**Duration** 36 Months

**Discipline** Pedology

### Main Goals

- To investigate arsenic (As) spatial distribution in contaminated soils of the Ogosta Valley, NW Bulgaria
- To investigate As release from soils to river and groundwater
- To integrate molecular and river-system scale information to better understand As fate in the Ogosta Valley's landscape



Index of valley bottom flatness for Ogosta Valley

### Activities

- Spatial analysis of river floodplain morphology using GIS and airborne LiDAR data
- Building a groundwater monitoring system considering the floodplain morphology
- Flood modeling for certain high flow events in the period of industrial mining in the Ogosta River basin
- Process studies on reductive As release from flooded soils as influenced by Fe and Mn
- Investigation of microbial communities and processes controlling As reduction

### Expected results

- Elaborated detailed maps of As concentration in floodplain soil of the Ogosta Valley
- Delineated 'hot spots' of groundwater arsenic contamination
- Novel process-oriented knowledge on the dynamics of As, Fe, and Mn reduction in highly-contaminated, pH-neutral river floodplain soils induced by flooding

### Swiss Coordinator

Prof. Ruben Kretzschmar  
Institute of Biogeochemistry and Pollutant Dynamics  
Department of Environmental Systems Science  
ETH Zurich  
kretzschmar@env.ethz.ch  
<http://www.soilchem.ethz.ch/>

### Bulgarian Coordinator

Assoc. Prof. Tsvetan Kotsev  
National Institute of Geophysics,  
Geodesy and Geography  
Bulgarian Academy of Sciences  
tsvetankotsev@mail.bg  
<http://www.niggg.bas.bg/en/>

[www.snf.ch](http://www.snf.ch)

[www.mon.bg](http://www.mon.bg)



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