



## **The sediment and phosphorus transport in a large scale study**

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In the name of the Water framework directive (2000/60/ES), there exists the demand to improve quality of water bodies. Basically, pollution of the flowing or stagnant water bodies comes from point and diffuse sources. To find the balance of point (mainly urban areas) and diffuse sources (drainage - N and soil erosion and sediment transport - P) in the scale of Moldau catchment is the task of the project.

The area of interest is Moldau river catchment (29.500 km<sup>2</sup>) has been modelled with fully distributed approach of the WaTEM/SEDEM model. The model estimates the soil erosion as well as sediment and phosphorus transport through the river network. The results are combined with estimation of bounded nitrogen originated from drainage systems in agricultural landscape.

The modelling has been done within three levels of accuracy. The simulation scale itself is defined by 10 m elements resolution with critical points net each approximately 300m in the river net (116.000 points). Subsequently, results were aggregated for sub-catchments of 4th order (ca 5 – 15 km<sup>2</sup> each = almost 3000 individual sub-catchments) and sub-catchments of 3rd order = ca 400 sub-catchments). Each water reservoir in the system (larger than 0.25 hectares in the area) has been included, which count more than 12.000 reservoirs.

The presented approach will be further use by Moldau river catchment managers for the planning of protection and elimination of the pollution in Moldau river catchment. This will lead to localize 3000 highly endangered hot spots which threaten the water bodies significantly. In this localities a detailed modelling and designing of the protection will be done.

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