

# **EmiSure - Entwicklung von Strategien zur Reduzierung des Mikroschadstoffeintrags in Gewässer im deutsch-luxemburgischen Grenzgebiet (Développement de stratégies visant à réduire l'introduction de micro-polluants dans les cours d'eau de la zone transfrontalière germano-luxembourgeoise)**

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The EmiSure-project focus in the development of Constructed Wetlands as tertiary treatment for micropollutant removal in medium-sized Wastewater Treatment Plants (i.e. less than 100 000 Population Equivalents). The investigation is part of a multidisciplinary project that coordinates the activities of multiple researchers, expert in different areas, into a multi-pronged approach to the topic. Being geographically the border between Luxembourg and Germany, the Sure river is here considered as case of study and possible scenarios to mitigate urban emission are evaluated. For this, 27 compounds such as antibiotics, beta blocker, cytostatics, pesticides etc have been selected for analysis.

The investigation is developed in two phases. An attempt has been made to initially select a suitable substrate among traditional granulates (i.e. sand and zeolite) and more innovative material such as biochar. Six planted lysimeters have been fed with synthetic wastewater and spiked with target micropollutants over five months. Influent and Effluent samples were regularly taken, concentrated using Solid-Phase Extraction (SPE) and then analyzed with Liquid Chromatography coupled with Mass Spectrometry (LC/MS).



Once selected the most promising adsorbing material, an intermediate test will be performed in the treatment plant of Reisdorf, Luxembourg (i.e. 4000 PE) in order to see the effect of real matrix. The knowledge gained from these lab scale studies together will be then used to design and dimension a full scale wetland to be installed in the WWTP of Echternach, Luxembourg (i.e. 20000 PE) and subsequently for decision policy support in the Greater Region.

Further information: [www.emisure.lu](http://www.emisure.lu)

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