

Type
PhD research

Duration
2017-2021



Summary of the research

Good water quality is essential for maintaining healthy ecosystems as well as for the supply of clean drinking water. Pharmaceuticals and multi-resistant bacteria are frequently found in the aquatic environment and therefore endanger the water quality status. The 27 members of the MEDUWA project, including universities, private companies, hospitals, governmental and non-governmental organizations from Germany and the Netherlands, address this problem with several different approaches along the entire medicine chain. These include:

- • measurements, visualization and communication of the problem,
- • simulating action,
- • and mitigation and prevention.

The University of Twente contributes to the MEDUWA project by modelling the Grey Water Footprint (GWF) for different pharmaceutical substances in the Vecht river catchment. The GWF is an indicator of the volume of water pollution and will be estimated for a selected number of pharmaceuticals and spatially mapped, distinguishing between GWFs related to wastewater from households and hospitals and to various types of livestock farming. GWFs will thereby also be expressed as polluted water volumes per unit of household, per patient, and per unit of animal product, like meat, milk or eggs. Furthermore, scenarios with possible measures to reduce pharmaceutical emissions will be developed. Their effectiveness will be evaluated by using the GWF model. A visualization of all results is shown in an App that is going to be developed by GeoplexGIS GmbH.

MEDUWA – Vecht(e) is an INTERREG project between Germany and the Netherlands focusing on the transboundary river catchment of the Vecht. For more information about the MEDUWA project see: www.meduwa.eu

Key words: Pharmaceuticals in the environment; Water Quality; Grey water footprint; Vecht catchment; transboundary project

Persons involved

Prof. dr. ir. Arjen Hoekstra, University of Twente (Promotor)
Dr. Maarten Krol, University of Twente (Daily supervisor)
Lara Wöhler, University of Twente (PhD Candidate)

More information

Name Lara Wöhler
Room Horst W-213
Tel. +31 53 489 7404
E-mail l.wohler@utwente.nl