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european centre of **excellence**
for sustainable **water technology**

MEDUWA VECHT(E)
Antibiotic resistance in the Vecht catchment

BACKGROUND

Antibiotic resistant bacteria and antibiotic residues have been detected in Dutch surface waters. This may pose a risk to ecosystems and human health. Human wastewater and run-off from farmland fertilized with animal manure are sources of antibiotic resistance in surface water (see Fig. 1). In this project we use the Vecht river and tributaries as a study area, in order to get a detailed picture of the contribution of different sources and to obtain parameters that would allow the prediction of antibiotic resistant bacteria in surface water.

IMPACT

We aim to establish the fate of antibiotic resistance in a complete, cross-border catchment (The Vecht, see Fig. 2)

Insight in the fate of bacteria in a catchment can aid predicting concentrations of resistant bacteria at locations of human exposure, such as recreational sites or drinking water production, and translation of measurement campaigns to other catchments.

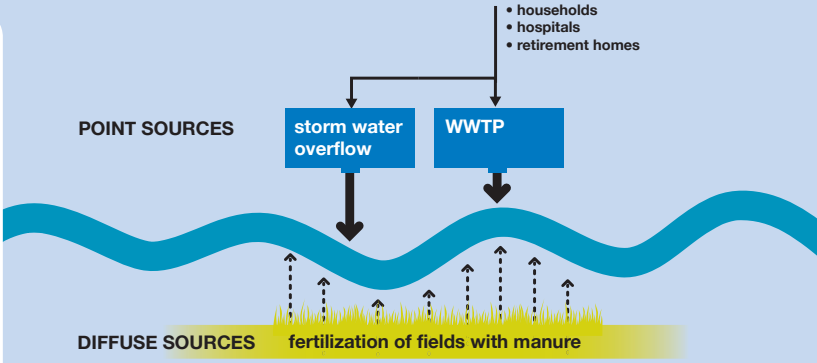

Fig.1 Point and diffuse sources of AMR in surfacewater

PROJECT OBJECTIVES

- 1-year sampling campaign (e.g. detection of ESBL producing E. coli)
- Geographical-based modelling of antibiotic resistant bacteria in the Vecht catchment (models: GREAT-ER, QMRACatch)
- Assess the attribution of different sources (point and diffuse) to antibiotic resistance in surface water
- Assess exposure of humans to antibiotic resistance in surface water

Fig.2 The Vecht catchment (courtesy of Stichting Huize Aarde)

AT A GLANCE

PROGRAMME:
INTERREG V A Deutschland-Nederland

DURATION:
32 months
(11 October 2016 – 30 June 2020)

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PROJECT PARTNERS

The MEDUWA VECHT(E) project consortium consists of 28 partners from 2 EU countries (NL, DE), working on the entire medicine chain in order to avoid the transfer from environmental pharmaceuticals and multi-resistant bacteria to humans and animals.

INTERREG Deutschland Nederland
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www.meduwa.uni-osnabrueck.de