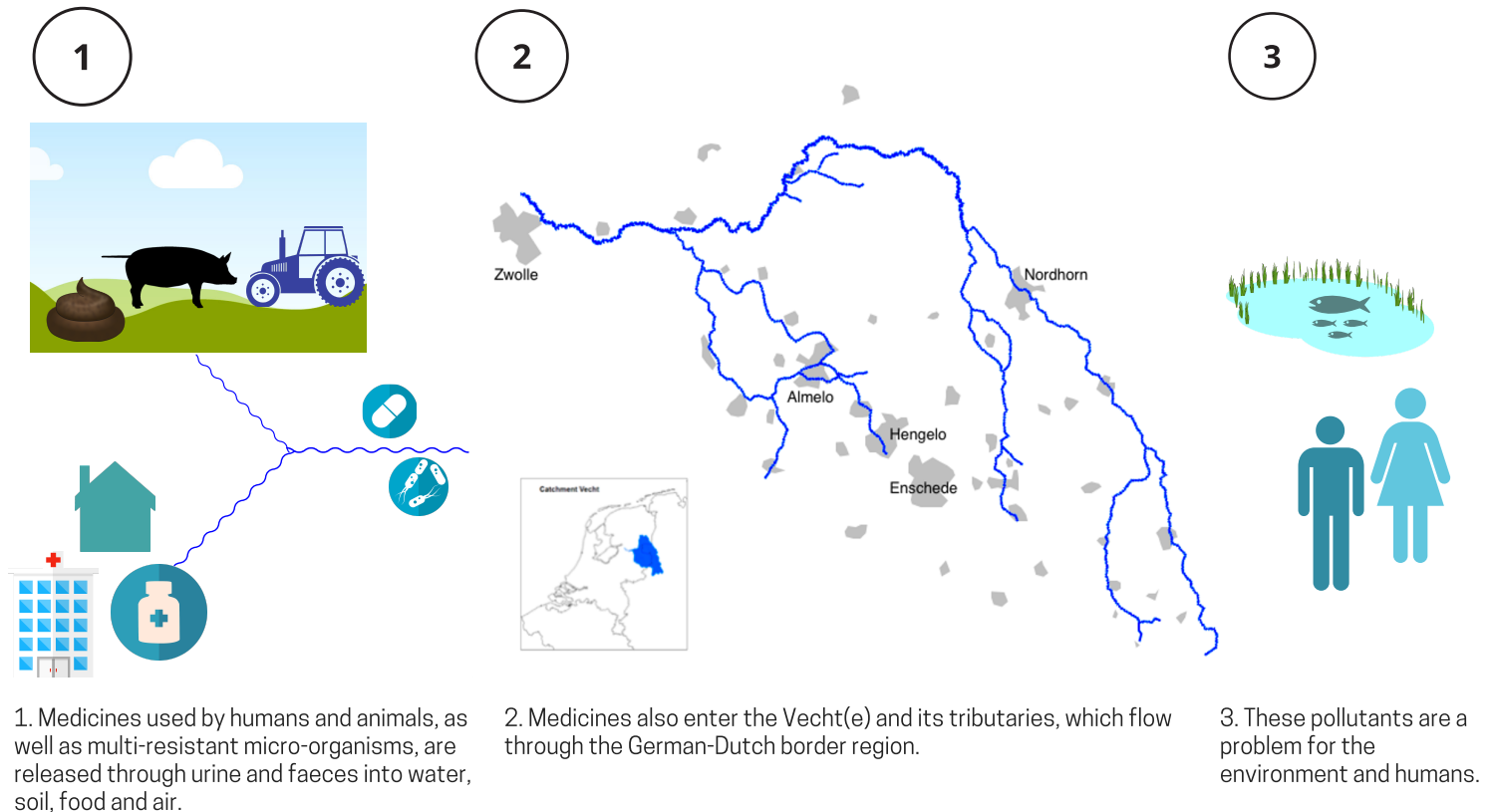


# MEDUWA-Vecht(e)

**MED**icines **U**nwanted in **W**ater



## Problem



## MEDUWA-Vecht(e) Project

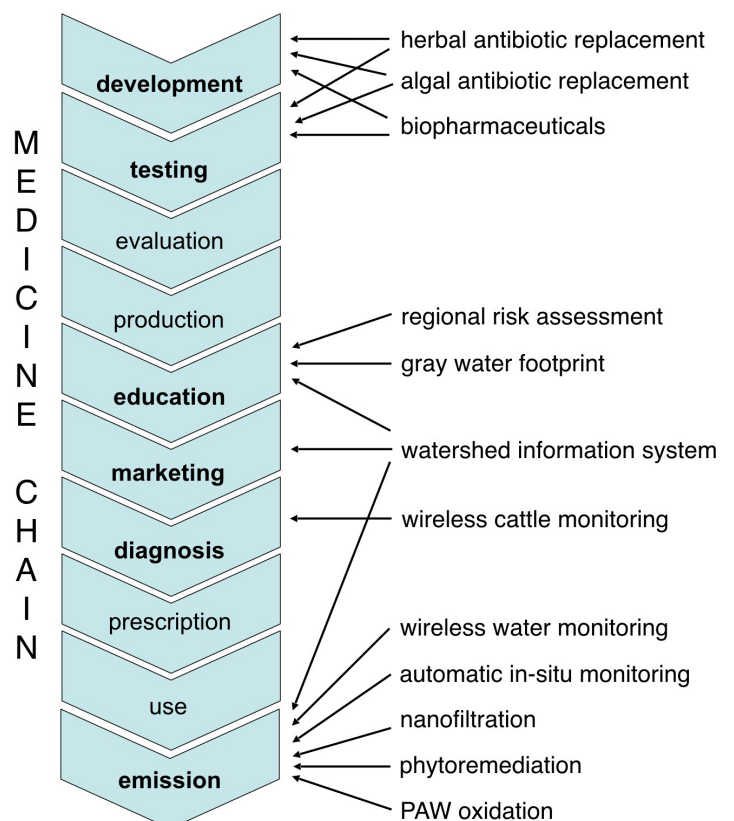
The main goal of MEDUWA is to develop a set of innovative solutions and complementary measures that prevent the transfer of medicines and multi-resistant micro-organisms from human and veterinary origins to water, food and air. These solutions can be implemented in various stages of the medicine chain from medicine development to environmental emissions.



## Broad Alliance

An alliance of 27 Dutch and German companies, universities, hospitals, governmental and civil society organizations is addressing this issue that can only be tackled in exchange with many stakeholders.

## 12 MEDUWA-Innovations



### All innovations of the project

#### Algal Antibiotic Replacement

Product: antibiotic microalgae product  
Partners: *Microganic GmbH, University Hospital of Münster - Institute for Hygiene, Wetsus*

#### Biopharmaceuticals

Product: Biopharmaceutical protein-based inflammation inhibitor (alkaline phosphatase, AP), h-rescap and b-rescap to reduce dependence on antibiotics and steroids in preventing infection.  
Partners: *AMRIF BV, Alloksys Life Sciences BV, Aix Scientifics GmbH, Tournois Dynamic Innovations BV*

#### Continuous Monitoring

Product: an automated in-situ sensor system for monitoring of medicine concentrations and other micropollutants in surface waters  
Partners: *InProSens UG, Saxion University of Applied Sciences*

#### Farm Animal Monitoring

Product: a non-invasive continuous monitoring system for a real-time registration of animal behaviour (cows) to avoid mass medication (metaphylaxis)  
Partners: *Noldus Information Technology BV, Demcon BV, Ubisense GmbH*

#### Grey Water Footprint

Product: a grey water footprint app for micropollutants like human and veterinary medicines and multi-resistant micro-organisms  
Partners: *Geoplex GIS GmbH, University of Twente - Water Management*

#### Herbal Antibiotic Replacement

Product: herbal substitute for veterinary antibiotics  
Partners: *Europa Ayurveda Centrum, University Hospital of Münster - Institute for Hygiene, University Hospital of Münster - Institute for Medical Microbiology*

#### Nanofiltration

Product: modular nanofiltration membrane system for the removal of micropollutants from surface and waste water  
Partners: *NXfiltration BV, Weil Wasseraufbereitung GmbH, Saxion University of Applied Sciences*

#### Phytoremediation

Product: use of (water) plants for cleaning soil and water of chemical substances and multi-resistant bacteria  
Partners: *Europa Ayurveda Centrum, University Hospital of Münster - Institute for Hygiene, University Hospital of Münster - Institute for Medical Microbiology*

#### Plasma Activated Water Oxidation

Product: a semi-mobile plasma reactor for the treatment of urine and faeces from patients treated with medicines such as antibiotics on an outpatient basis  
Partners: *VitalFluid, University Hospital of Münster - Institute for Hygiene, University Hospital of Münster - Institute for Medical Microbiology, Radboud University Medical Centre*

#### Regional Risk Assessment

Product: a spatially differentiated risk assessment of medicines like antibiotics  
Partners: *AVIV BV, Radboud University*

#### Watershed Information System

Product: a user-friendly watershed information system for visualisation and prediction of chemical and biological contaminants, and simulation of measures  
Partners: *Geoplex GIS GmbH, University of Osnabrück - Institute for Environmental Systems Research, Wetsus*

#### Wireless Water Monitoring

Product: universally applicable and wireless monitoring system for measuring water quality  
Partners: *Novaris Orbit Technology BV, InProSens UG, Saxion University of Applied Sciences, NXfiltration BV, Weil Wasseraufbereitung GmbH, Radboud University Medical Center*

### Contact

In Germany:  
Raissa Ulbrich  
Inst. of Environmental  
Systems Research  
Osnabrück University / FB6  
49076 Osnabrück  
Email: [raissa.ulbrich@uos.de](mailto:raissa.ulbrich@uos.de)  
Tel: +49 541 969 3435

In Netherlands:  
Alfons Uijtewaai  
Stichting Huize Aarde  
Enschede  
Email: [post@huizeaarde.nl](mailto:post@huizeaarde.nl)  
Tel. +31 6 432 89 163

