

MEDUWA - Vecht(e) 2017-2020



MEDUWA

MEDizin Unerwünscht im WAsser
MEDicines Unwanted in WAter
MEDicijnen Uit het WAtter



MEDUWA-Vecht(e)

Develop a package of socially responsible measures on the environmental cycle of human and veterinary medicines and antibiotic resistant micro-organisms.



Pilot area

Area floodplain: 3780 km².

Longitude Vecht(e) river: 170 km.

Water source: 46-48% from Germany; 54-52 % from the Netherlands.

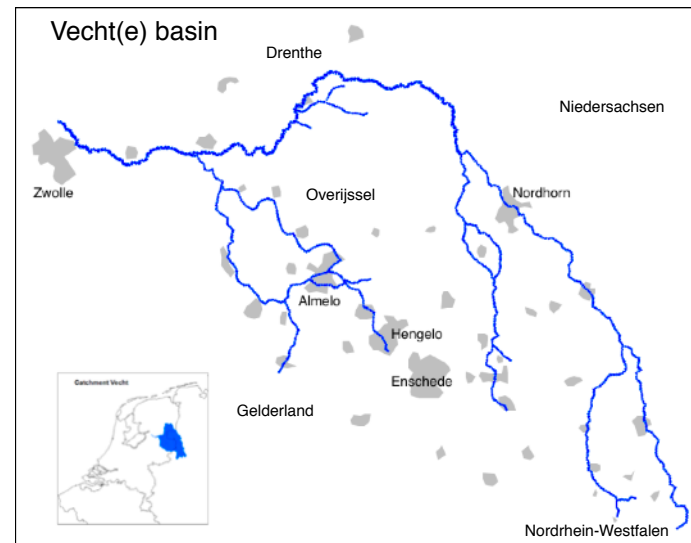
Main tributaries: Dinkel 89 km, Regge 50 km, Steinfurter Aa 46 km.

Dutch Provinces: Overijssel, Gelderland, Drenthe.

German Länder: Nordrhein-Westfalen, Niedersachsen.

Total inhabitants: 1,15 Million (DE ± 336.000; NL ± 816.000).

Main municipalities (>20,000 inhabitants): Enschede, Zwolle, Hengelo, Almelo, Hardenberg, Nordhorn, Gronau, Hellendoorn, Coevorden, Ahaus, Steinfurt, Oldenzaal, Rijssen, Dalfsen, Dinkelland, Wierden, Losser, Borne, Tubbergen.



The catchment is a drinking water source for the province of Overijssel. During prolonged dry periods the rivers of this watershed are comprised of 80 to 100 % treated water from sewage treatment plants. The water therefore contains relatively high concentrations of pharmaceuticals and bacteria (and their plasmids) that are resistant to human and veterinary antibiotics. During floods these so called micro-contaminants are spread over the floodplain.

Swimming in the Vecht(e) basin



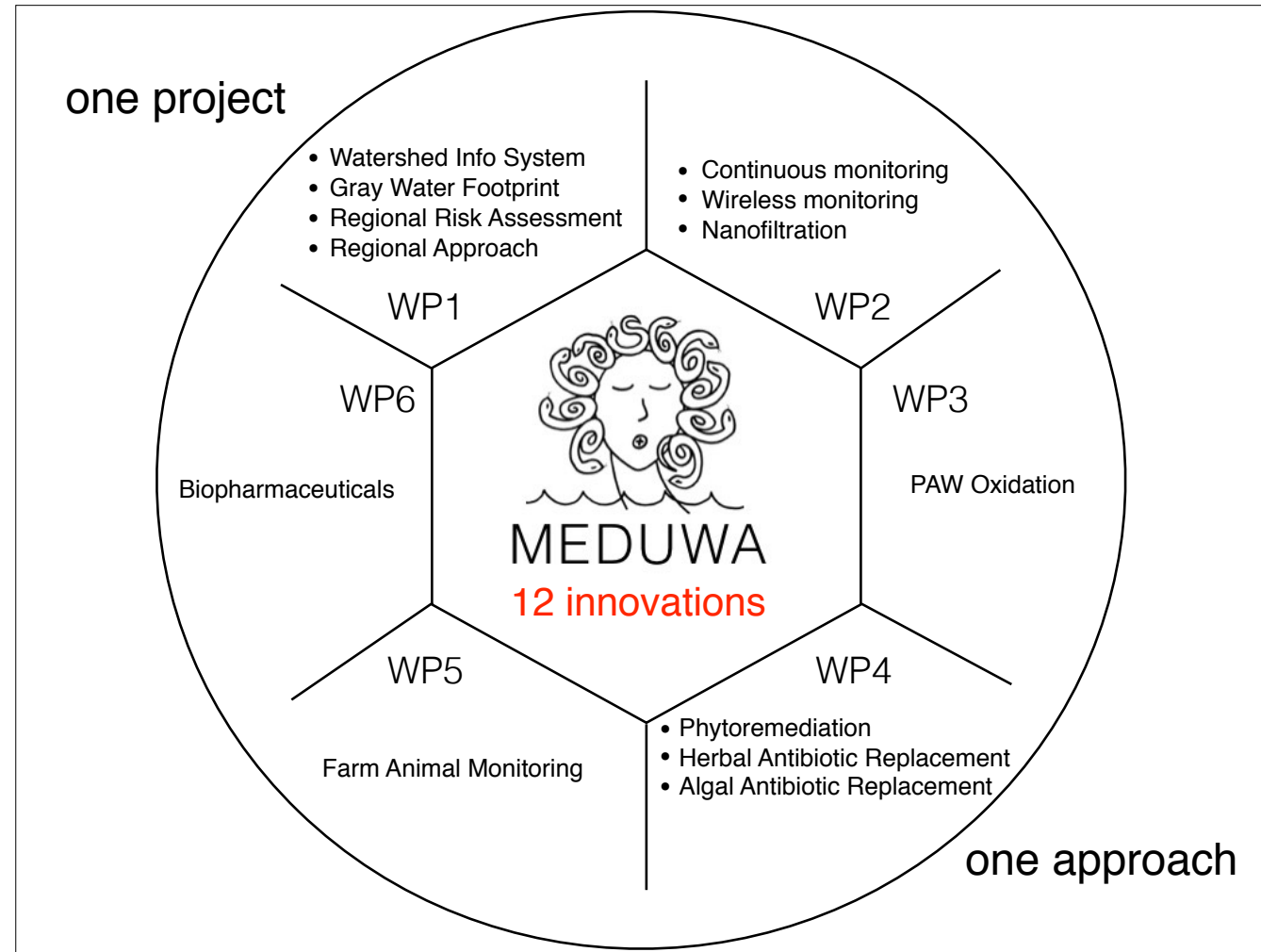
Recreational use of surface water in the area is growing, although swimming is not recommended in this river. Recently ESBL-bacteria were identified in the river system. Swimmers inevitably swallow ESBL-bacteria, but the health impact is not known yet (comm. H. Schmitt, IRAS/Wetsus). This micro-contamination could restrict the development of water tourism in the area.



inter-sectoral cross-border coalition for action & change



MEDUWA is a German-Dutch cross-border coalition of 16 companies, 5 research institutes, 2 academic hospitals, 1 government, and 2 NGO's from the water, agricultural and (human & veterinary) health sectors.

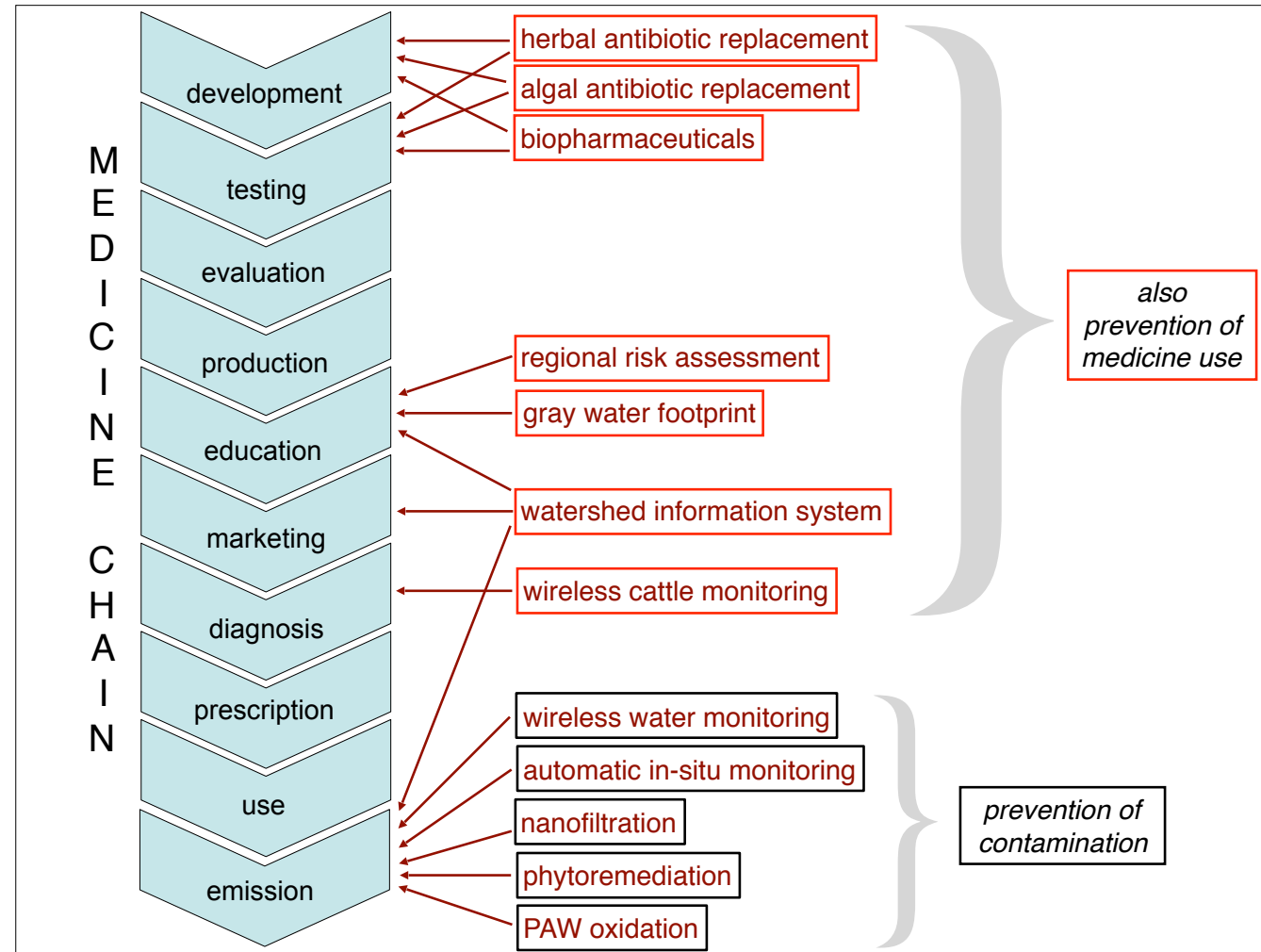


MEDUWA = 12 innovations. Development of different groups of complementary measures through collaborative and synergistic development of knowledge.

Intervention classes in MEDUWA

WP	product	prevention	mitigation	measuring	simulation prediction	visualisation communication
1.1	Watershed info system					
1.2	Gray water footprint					
1.3	Risk assessment					
2.1	Automatic in-situ monitoring					
2.2	Wireless water monitoring					
2.3	Nanofiltration					
3	PAW oxidation					
4.1	Phytoremediation					
4.2	Herbal antibiotic replacement					
4.3	Algal antibibiotic replacement					
5	Wireless cattle monitoring					
6	Biopharmaceuticals					

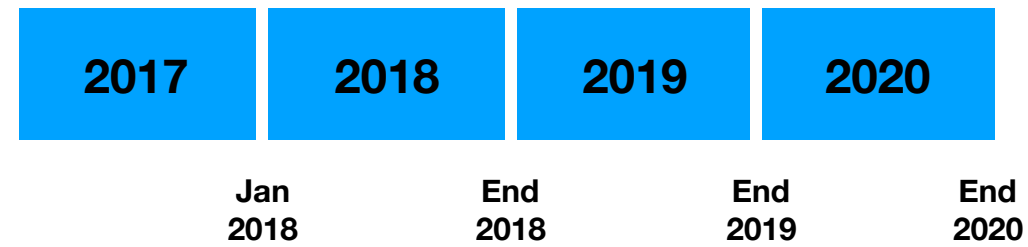
MEDUWA covers different intervention classes: prevention; mitigation; analysis; simulation of measures; prediction under various management and climate scenarios; visualization; and communication.



The interventions are developed for various links of the pharmaceutical chain. Tools like Watershed Information System, Gray Water Footprint and Regional Risk Assessment aim to strengthen socially responsible medicine use by the veterinary and human health sectors.



planning stakeholder meetings



For the development of these interventions collaboration by stakeholders is important. Stakeholders are those who bring and collect information, give and get advice, assist with testing, collaborate in communication, etc. Every year the meet with the project partners (4 times in total).



Sponsors



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**Niedersächsische
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Ministerie van Economische Zaken



Ministerium für Wirtschaft, Energie,
Industrie, Mittelstand und Handwerk
des Landes Nordrhein-Westfalen



MEDUWA is subsidized by the EU Regional Development Fund (ERDF) and INTERREG Program Partners.



The poster for the Green Pharmacy Conference 2017 features a top section with a photograph of various pills and a thermometer. Below this, the title 'The environmental cycle of pharmaceuticals' is prominently displayed in blue, followed by the subtitle 'A motivation for innovation in the human and veterinary medicine chain'. The event details, including the date (October 27th, 2017), time (09:00-17:00), and location (UMC Utrecht, Heidelberglaan 100), are listed. Logos for VVM (network of environmental professionals) and UMC Utrecht are shown. A bottom section contains a paragraph about the global issue of pharmaceutical contamination and provides the website www.vvm.info/greenpharmacy for more information. To the right of the bottom section, there is a separate line for program and registration with the same website link. The background of the bottom section features a microscopic image of purple bacteria.

Photo: CCD Kaboompics | Pixabay

Green Pharmacy Conference 2017

The environmental cycle of pharmaceuticals

A motivation for innovation in the human and veterinary medicine chain

October 27th 2017 | 09:00-17:00 | UMC Utrecht
Heidelberglaan 100 | Utrecht | The Netherlands

VVM network of environmental professionals

U UMC Utrecht

Worldwide, a cocktail of pharmaceuticals and multi-resistant bacteria of human and animal origin is found in drinking water, soil, food, crops and air. The healthcare sector is looking for solutions to this societal challenge. During the conference concrete options for action will be presented that reduce the risks associated with this cycle. For more information and to subscribe: www.vvm.info/greenpharmacy

For program & registration: vvm.info/greenpharmacy

Some partners of MEDUWA will present their work during the Green Pharmacy Conference on the 27th October at the UMC Utrecht. The goal of this international conference is to discuss the possible effects of this contamination on human health, and to study some practical source-oriented solutions. You are welcome to this conference! See vvm.info/greenpharmacy for program and registration.