



## **Deliverable 4.7**

### **Report on Network-wide training event 4: Managing water in complex anthropogenic landscapes**

**Grant Agreement n°:** 956623

**Project full title:** Inventive forecasting tools for adapting water quality management to a new climate

**Project acronym:** inventWater

**Type of deliverable:** report

**Planned date of deliverable:** 30 September 2023

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**Target Audience:** Public

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## Introduction

This training school developed the necessary scientific and technical skills required to identify the conflicts in water management in terms of water quantity versus water quality issues, address rural versus urban areas, point sources versus diffuse sources, and trade-offs between water uses for different purposes. The training was focused on the Ruhr basin (Germany) and ESRs learned about assessing water resources management on available monitoring data and information within the most important governance frameworks (e.g. WFD) and engineering practices (e.g. reservoir management). It was a training on scenario development that synthesizes the different management approaches and pressures into a concrete simulation framework. To achieve this and following the Grant Agreement a list of activities and goals were developed:

- Water supply and water management in the Ruhr basin (8h – 0.5 ECTS). Analysis of monitoring data and first students' views on the current status of the Moehne reservoir (Ruhr basin) and the associated catchment.
- Aquatic Ecology and reservoir operation (4h - 0.25 ECTS). Identifying the current and potential future challenges of aquatic ecosystems and human water demands. Management challenges in the Mediterranean climate.
- Basin scale assessment and cross-sectoral interactions (4h - 0.25 ECTS). Putting the in-situ data driven view into bigger context. What are the most important drivers to consider?
- Monitoring in practice (4h - 0.25 ECTS). New monitoring strategies to address future challenges?
- Water governance, water conflicts (4h – 0.25 ECTS). Sectors affected and affecting water quality. Stakeholder and policy maker perspectives
- Addressing future challenges (8h - 0.5 ECTS). Developing future pathways and identification of potential conflicts between water quantity and quality, competing water uses, etc. Design of solution strategies.
- Excursion to Ruhr basin and Moehne reservoir, visit of a waterwork and wastewater treatment plant (8h - 0 ECTS).



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## Location of the meeting

The meeting was held in Bochum (Germany) at the Ruhr University Bochum (RUB) following the grant agreement. The meeting was organised by Hans Duerr and Martina Floerke at RUB as beneficiaries of the project, with the support of Ilona Baerlung and Karsten Rinke from the other beneficiary institution in Germany (UFZ), the ESRs in both institutions and the coordination team. See some pictures from the meeting in the different sessions.



Figure 1. Picture of the whole group at Moene Reservoir



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Figure 2. Deploying high-frequency sensor in the reservoir



Figure 3. Learning from stakeholders



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Figure 4. Discussing with expert lawyer about WFD



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## List of attendees

Name	Institution	Role
Ammanuel Bekele	RUB (Germany)	ESR
Maud Siebers	US (UK)	
Sabin Taranu	VUB (Belgium)	
Ilaria Micella	WU (The Netherlands)	
Keerthana Suresh	IIASA (Austria)	
Ricardo Marroquin	DKIT (Ireland)	
Angela Pedregal	ICRA (Spain)	
Lipa Nkwale	UFZ (Germany)	
Faluku Nakulopa	UFZ (Germany)	
Mahtab Yaghouti	US (UK)	
Adrian Rinaldo	UCC (Ireland)	
Daniela Henry	ICRA (Spain)	
Annika Schlemm	VUB (Belgium)	
Floran Clopin	WU (The Netherlands)	Supervisor
Elvira de Eyto	MI (Ireland)	
Katrin Bieger	AU (Denmark)	
Martina Floerke	RUB (Germany)	
Phil McGinnity	UCC (Ireland)	
Karsten Rinke	UFZ (Germany)	
Hans Duerr	RUB (Germany)	
Rafael Marcé	ICRA (Spain)	
Maryna Strokai	WU (The Netherlands)	
Ting Tang	IIASA (Austria)	
Ilona Baerlung	UFZ (Germany)	
Maria José Farré	ICRA (Spain)	
Daniel Mercado-Bettín	ICRA (Spain)	Project Manager

## Agenda of the Fourth Training Event

Following the initial plan, a five-day meeting was planned and successfully implemented. The first day was assumed as a traveling day to respect the family time of the network and because the training will continue after the 5-day-meeting, fulfilling the GA. In the following table are the activities and sessions per day.



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Date/Time	Location / Content	In charge
Mon Sep 18th	Hydro Lab (IC building, ground floor, RUB, see map)	
17:30	Joint ice-breaker incl. barbecue	RUB
Evening	Informal arrangements	



Date/Time	Content / location	In charge
Tue Sep 19th	Location RUB	Chair: Martina Flörke
08:30-09:00	Welcome and logistics	Martina Flörke, Hans Dürr
09:00-09:30	Introductory presentation	Karsten Rinke, Ilona Bärlund
09:30-10:30	Lecture 'Water Quantity Management in the Ruhr River Basin' & discussion	Fabian Netzel (Ruhrverband)
10:30-11:00	Coffee	
11:00-12:00	Lecture 'Water quality and river basin management in the Ruhr catchment area' & discussion	Yvonne Schneider (Ruhrverband)
12:00-13:00	Lecture 'Monitoring of inland waters' & discussion	Karsten Rinke
13:00-14:00	Lunch	
14:00-16:50	ESR presentations and group discussion <ul style="list-style-type: none"> <li>by Workpackage groups: ESRs 1-6, ESRs 7-10, ESRs 11-15, flash talks à <b>5 min.</b> on a highlight result + group discussion</li> <li>14:00-14:30 WP1 flash talks</li> <li>14:30-15:00 WP1 discussion</li> <li><u>15:00-15:20 Coffee break</u></li> <li>15:20-15:40 WP2 flash talks</li> <li>15:40-16:00 WP2 discussion</li> <li>16:00-16:25 WP3 flash talks</li> <li>16:25-16:50 WP3 discussion</li> </ul>	ESRs & facilitators: WP1: Martina Flörke WP2: Karsten Rinke WP3: Jeroen de Klein
	Location RUB & online	
17:00-18:00	Supervisory Board	ICRA



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	Location Herner Str. 221-223	
18:30 (group 1)	Social activity: 3D minigolf Schwarzlicht Semester	Ammanuel Tilahun & co.
18:45 (group 2)	(see logistics, part C)	
Evening	Informal arrangements for dinner	

Date/Time	Content / location	In charge
Wed Sep 20th	Excursion day Möhne	
08:30	Departure Bochum (central train station – Hfb, see map)	RUB
10:00	Arrival at Möhnetalsperre	
10:00-10:45	Introduction on the dam	Mr. Decker (Ruhrverband)
11:00-13:00	Boat trip with the buoys 	Mr. Kühlmann / Mr. Schneider (Ruhrverband)
13:15-14:15	Lunch at the fishery station	Ruhrverband
14:15-15:30 (incl. 20 min. one-way walk)	Möhne hydroelectric power station: guided tour with a visit to the control tunnel on the north side and the turbine house on the south side 	Mr. Harder (Ruhrverband)
16:00-17:00	Tour of the wastewater treatment plant Möhnesee-Vörlinghausen	Mr. Helle (Ruhrverband, Regionalbereich Nord)
17:00	Departure Möhnetalsperre	RUB
18:30	Arrival Bochum (central train station - Hbf)	
Evening	Informal arrangements for dinner	



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Date/Time	Content / location	In charge
<b>Thu Sep 21st</b>	<b>Location RUB &amp; Excursion Bochum</b>	<b>Chair: Martina Flörke</b>
08:30-08:45	Introduction to the day	RUB
08:45-10:00	ESR – supervisor sessions and other interaction in small groups	All
10:00-10:45	Lecture: 'Legal aspects of water management' & discussion	Per Seeliger (Erftverband)
10:45-11:00	Coffee	
11:00-11:40	Lecture 'Bending degradation trajectories of water quality: what is the role of governance and management?' & discussion	Dietrich Borchardt (UFZ)
11:40-12:15	Lecture: 'Disinfection byproducts and drinking water quality in a context of Global Change' & discussion	Maria José Farre (ICRA)
12:15-12:45	Lunch	
12:45	Departure for water works	
14:00-16:00	Excursion to water works: Wasserwerk Haltern Lecture on drinking water and a tour of the site	Hr. Meckelburg (Gelsenwasser AG)
17:00	Return from water works to Bochum Hbf	
19:00	Formal dinner San Marco (Huestrasse 5, Bochum)	RUB

Date/Time	Content / location	In charge
<b>Fri Sep 22nd</b>	<b>Location RUB</b>	
08:30-08:45	Introduction to the day	RUB
08:45-10:45	Group work on challenges and solutions of current and future water management	Introduction Ilona Bärlund All ESRs and PIs
10:45-11:15	Coffee	
11:15-12:45	Presentation of group work and discussion - 4-5 groups à 10+5 min - 15 min discussion	Facilitation Ilona Bärlund
12:45-13:00	Wrap-up	ICRA
13:00-13:30	Lunch	



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