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RETOUCH NEXUS

REsilienT water gOvernance Under
climate CHange within the WEFE NEXUS



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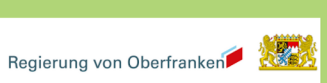
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WELCOME!

The EU-funded RETOUCH NEXUS project will introduce and promote the Water-Energy-Food-Ecosystems (WEFE) Nexus as a multi-level and cross-sectoral approach that supports the EU water economy and relies on ecological and social considerations. With the help of its interdisciplinary consortium of 13 partners, RETOUCH NEXUS will design and advance integrated, innovative, and inclusive Nexus-smart water governance schemes and institutional settings aiming at a secure water future in the EU resilient to climate change. Following an evidence-based approach from 6 different case studies, RETOUCH NEXUS will propose, assess and optimise WEFE Nexus smart methods reflecting various cross-sectoral, multi-level, and multi-stakeholder water governance conditions.

Maria Vrachioli, Project coordinator
-Technical University of Munich (TUM)

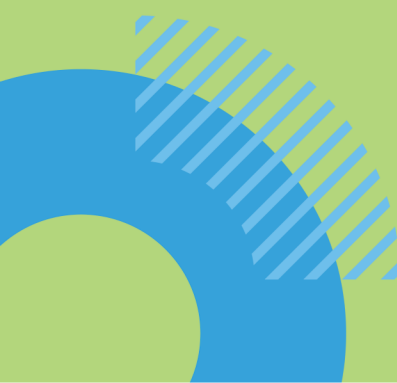


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ABOUT RETOUCH NEXUS

Coordinator: Technical University of Munich

start: 01-01-2023 / end: 01-01-2027

**48
months**

**8
European
countries**

**13
partners**

**3M€
EU funds**

Context :

With increased water scarcity due to anthropogenic and natural causes, the trade-offs and synergies intrinsic to efficiently allocate this resource to various competing uses have become more polarized.

Objective:

RETOUCH NEXUS overall objective is to design and foster integrated, innovative and inclusive Nexus-smart water governance schemes and institutional settings to promote a secure water future in the EU, resilient to climate change.



RETOUCH NEXUS CONCEPT

Realizing the importance of an integrated approach in water governance, the RETOUCH NEXUS project introduces and promotes the **Water-Energy-Food-Ecosystems (WEFE) Nexus** as a multi-level and cross-sectoral approach that advocates the EU water economy as a whole and, in addition, relies on ecological and social considerations.

The RETOUCH NEXUS project will improve the implementation of water policy at the regional and local level by capturing the interactions between water resources and society addressing 5 innovative dimensions of water governance using the WEFE Nexus approach.

OBJECTIVES & EXPECTED OUTCOMES



Building upon the Water-Energy-Food-Ecosystems (WEFE) Nexus, RETOUCH NEXUS's overall objective is to promote robust, integrated, sustainable, inclusive and upscalable water governance practices.

To do so, **5 Project Results (PR)** have been established:

- PR1 - a knowledge base;
- PR2 - multi-level, multi-actor and cross-sectoral water governance schemes;
- PR3 - financing, economic and business instruments;
- PR4 - an empowering ecosystem of participation
- PR5 - upscalable water governance practices and settings.

The overall objective of RETOUCH NEXUS is supported by a set of specific objectives (O) that are further linked to the Expected Outcomes (EO) as presented below:

O1 Propose 35 water governance metrics

EO2: Promote a better integrated planning approach across water-using sectors

EO7: Support the implementation of the European Green Deal and the Sustainable Development Goals, notably SDG 6 “Ensure availability and sustainable management of water and sanitation for all”

O2 Propose at least 6 multi-level, multi-actor and cross-sectoral water governance schemes

EO1: Improve policy implementation for securing sustainable water use across sectors, while ensuring transparency and inclusiveness

EO4: Support coordination between water policies and other relevant policies and coordination of planning measures across relevant EU and national instruments for sustainable water use

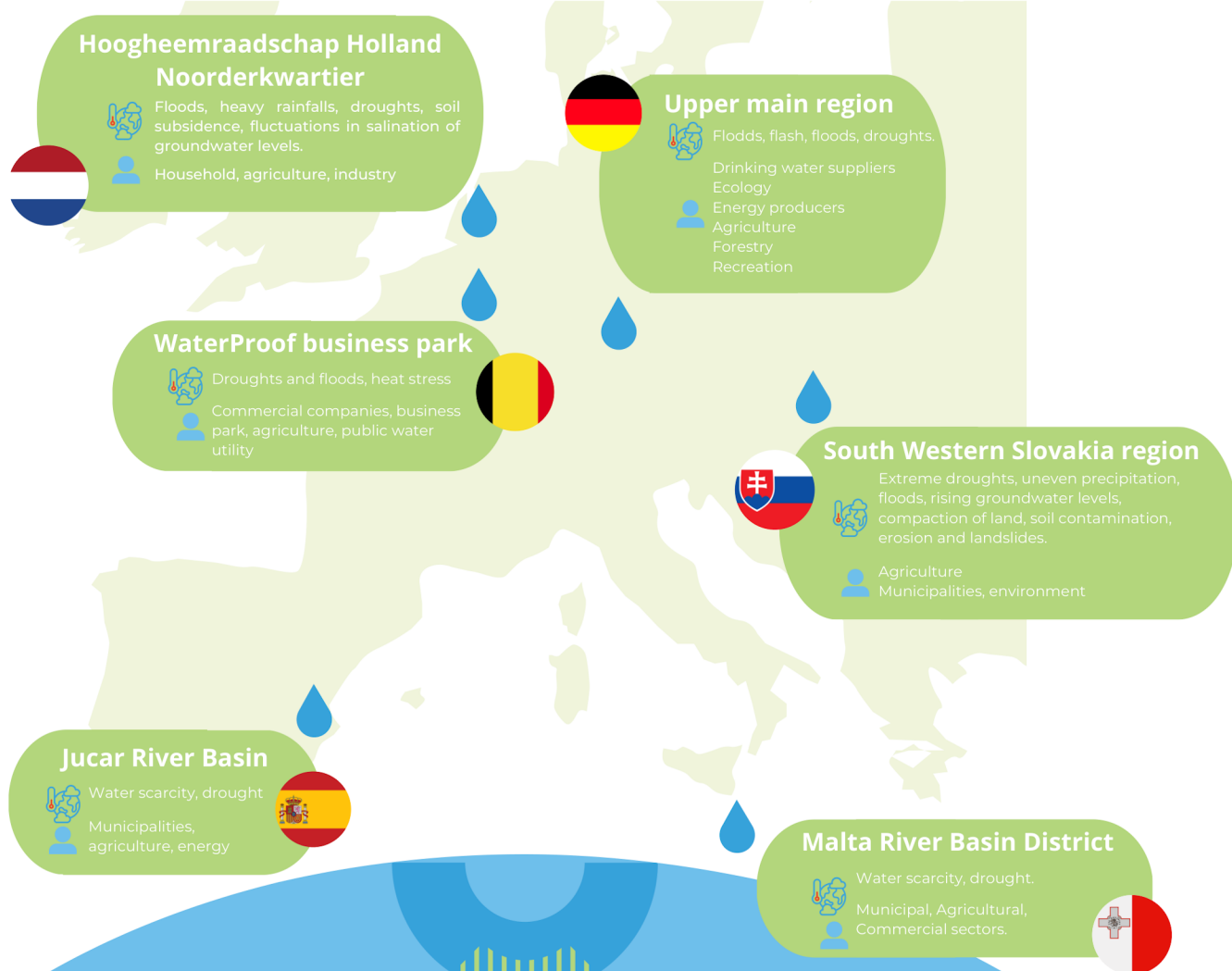
O3 Develop and apply economic instruments to reconcile water price, value and cost

EO3: Help to link water management to the economic and social development sectors

EO6: Help society to implement through governance, the technological, economic, political, and social measures that will set a course toward the achievement of a desirable, more sustainable and secure water future

O4 Develop and demonstrate 12 innovative engagement mechanisms

EO5: Empower citizens by increasing their motivation and capacity to influence effective water governance decisions



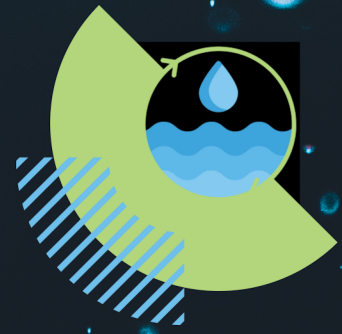
CASE STUDIES

In the RETOUCH NEXUS project, a case study is interpreted as a micro-level WEF E Nexus representation that offers the appropriate context of a stylized water economy, where integrated and climate-resilient water governance schemes and innovative engagement mechanisms can be appraised.

The case study sites of the RETOUCH NEXUS are covering different levels of application that enable analysing the direct and indirect impacts of water governance schemes and policy interventions on sectors of the economy.

The application context of the RETOUCH NEXUS case studies ranges from the business park and local to regional and national levels. RETOUCH NEXUS focuses on the “macro-micro linkage” framework that facilitates the assessment of various water practices and policies and their impacts within individual water-using sectors and the entire economy at any geographical level.

WORKPLAN



W1

Assess and monitor sustainable water governance M1-M48

Leader : Technical University of Munich (TUM)

M1-M44 **Multi-actor engagement mechanisms for water governance**

Leader : adelphi

W2

W3

Economic and financial schemes of water systems M3-M46

Leader : Valencia Polytechnic University (UPV)

Multi-level, multi-sector water M3-M48 governance settings

Leader : Vrije Universiteit Amsterdam (VUA)

W4

W5

Communication, dissemination and exploitation M1-M48

Leader : Euroquality (EQY)

Project management and M1-M48 evaluation

Leader : Technical University of Munich (TUM)

W6



MEET THE TEAM

The project team, led by the Technical University of Munich, gathers a well-balanced mix of water economists, hydrologists and policy experts (TUM), water governance, social sciences and law experts (VUA), integrated water resource systems' modellers and economists (UPV, VUA), water and other water-using sectors policy making experts (SUA).

This technical and scientific core is associated to six Case Study Leaders (2 national level body administrations - Ministry of Agriculture of the Slovak Republic (SUA) and Ministry of Energy and Water in Malta (EWA), 3 local water utilities - Hoogheemraadschap Hollands Noorderkwartier (HHNK), De Watergroep (DWG) and Regierung Oberfranken (REGOfR), and 1 leading water research organization - Flemish Institute for Technological Research (VITO).

The consortium is completed by three private actors, specialized in stakeholder engagement, capacity development and exploitation (adelphi and Greening the Islands (GtI) and in communication, dissemination, open-science practices and European project management (EQY).



TECHNICAL UNIVERSITY OF MUNICH (TUM)

Who are we ?

Founded in 1868, the Technical University of Munich (TUM) is one of Europe's top universities committed to excellence in interdisciplinary research, inclusive teaching and active promotion of young scientists. The university also forges strong links with companies and scientific institutions across the world. TUM is organized in 14 departments that provide an excellent environment for research and for the education of 49,000 students with a total budget of EUR 1,770 million euros. TUM is represented in this project through two groups: the group of Production and Resource Economics and the group of Hydrology and River Basin Management.

What is our role in the project ?

The TUM group of Production and Resource Economics is the project coordinator and leads the WPI activities that focus on the development of a robust monitoring framework of water governance. In addition, the group of Production and Resource Economics is leading WP6, associated with the management and coordination of the project's activities. The TUM group of Hydrology and River Basin Management is the German Case Study leader and with the support of Regierung Oberfranken are exploring the water governance challenges in the Upper Main region. While the Upper Main region offers a strong interconnection of all the WEF E aspects, a regular stakeholder communication platform is missing. In addition, due to the hydrological extremes (floods and droughts), tensions among stakeholders are expected to increase. Therefore, there is an urgent need to map and overcome tensions among different water users, while ensuring environmental sustainability.



Main contact name

Maria VRACHIOLI

E-mail

maria.vrachioli@tum.de

Website

<https://www.tum.de/en/>

Address

**Technical University of Munich
Arcisstraße 21
80333 München**

T
e
a
m

m
e
m
b
e
r
s



**Markus
DISSE**



**Jingshui
HUANG**



**Nicole Tatjana
SCHERER**



**Juan Pablo
HENAO**



**Johannes
SAUER**



**Roberto
VILLALBA**



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA

VALENCIA POLYTECHNIC UNIVERSITY (UPV)

Who are we ?

The Hydroeconomic Modelling Group at IIAMA-UPV is a multidisciplinary team of researchers led by professor Manuel Pulido-Velazquez focused on researching the economic valuation and improvement of water resources and environmental management, as well as the use of economic instruments to achieve sustainable use and management of water.

What is our role in the project ?

We are leading Work Package 3 "Economic and financial schemes of water systems". In the WP we will examine the use of various tools and methods, such as pricing policies, water markets, crop insurance, and payments for environmental services, to achieve sustainable use and management of water incorporating a WEFE perspective.

We are also leading the Jucar River Basin case study, which is an excellent case study for performing hydroeconomic analysis under a WEFE nexus lens due to the economic and environmental interdependency of its productive sectors, its complex water management system, and the vulnerability to future climate and global scenarios.



Main contact name
Manuel PULIDO-VELAZQUEZ

E-mail
mapuve@hma.upv.es

Website
<https://www.upv.es/en>

Address
**Camino de Vera, s/n.
46022 - Valencia**

T
e
a
m

m
e
m
b
e
r
s



**Adria RUBIO-
MARTIN**



**Hector MACIAN-
SORRIBES**



**Eulalia GOMEZ-
MARTIN**

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VRIJE UNIVERWEBSITEIT AMSTERDAM (VUA)

Who are we ?

Vrije Universiteit Amsterdam (VUA) is unique university with faculties in the humanities, STEM, social sciences and medical sciences. Our education and research are closely linked. We combine our top position in research with a strong social orientation, which has resulted in an excellent international reputation. Participating researchers are from the School of Business and Economics as well as the Institute for Environmental Studies.

What is our role in the project ?

VUA will combine expertise on governance and economics as applied to water resources. VUA leads WP4 on designing and promoting WEFE Nexus-based multi-level, multi-actor and cross-sectoral water governance schemes and policy instruments. In WP3, VUA will provide a conceptual analysis of the integration of the nexus perspective in economic policy instruments. VUA will support HHNK on the Dutch case study. The case study focuses on the fresh water supply and quality with rising population numbers and consequent housing issues as well as the increase of large-scale industries in the area, in combination with longer periods of drought leading to a serious decline in the fresh water supply.



Main contact name
Erik ANSINK

E-mail
h.t.van.delft@vu.nl

Website
<https://vu.nl/en>

Address
**De Boelelaan 1105
1081 HV Amsterdam
Netherlands**

T
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**Nicolien
VAN DER GRIJP**



**Daniel
PETROVICS**



**Leon
BREMER**



ADELPHI RESEARCH GEMEINNUTZIGE (ADELPHI)

Who are we ?

adelphi is the leading independent think-and-do tank in Europe for climate, environment and development. 300 strategists, thought leaders and practitioners are currently working at the local and global levels to find solutions to the most urgent political, economic and social challenges of our time. adelphi's work is grounded in transdisciplinary research, evidence-based consulting and stakeholder dialogues. With these tools adelphi shapes policy agendas, facilitates political communication, informs policy processes and supports decision-makers.

What is our role in the project ?

adelphi will lead the WP2 to ensure that citizen and stakeholder engagement mechanism and capacity building of water governance stakeholders are also adapted to actors of the WEFE Nexus sectors. adelphi will provide a common approach for stakeholder mapping in case studies in T2.1 and a detailed review of good practices for stakeholder engagement and public participation in cross-sectoral water management in T2.2. Based on these and lessons learned from the case studies adelphi will prepare a handbook on innovative mechanisms and success factors for stakeholder engagement and public participation in cross-sectoral water governance. adelphi in collaboration with all the project partners will ensure the exploitation of the Nexus-smart water governance practices and institutional settings designed by RETOUCH NEXUS (T5.5).



Main contact name
Annika KRAMER

E-mail
kramer@adelphi.de

Website
<https://www.adelphi.de/en>

Address
**123 Anywhere St., Any City,
ST 12345**

T
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**Elsa
SEMMLING**



**Karolina
HECK**



**Binayak
DAS**



SLOVAK UNIVERSITY OF AGRICULTURE (SUA)

Who are we ?

The Slovak University of Agriculture provides education in the field of agriculture and related research areas. The University cultivates close and productive links with its local and regional community and continually expands its work at an international level in both teaching and scientific research. The university has a strong tradition of working in collaboration with business and industry and playing an active role in economic regeneration.

What is our role in the project ?

SUA will manage the Slovak case study and will work closely with the local associated partner, the Slovak Ministry of Agriculture and Rural Development of the Slovak Republic. The case study will focus on increasing water retention capacity, improving irrigation systems and enhancing the landscape structure that have a direct impact on reducing the risks of floods and droughts in the southwest part of Slovakia, ensuring water security, eliminating desertification and reducing the loss of biodiversity.



Main contact name
Ján POKRIVČÁK

E-mail
jan.pokrivcak@uniag.sk

Website
<https://www.uniag.sk/en>

Address
**Trieda Andreja Hlinku 2,
949 76 Nitra
IČO:00397482
DIČ:2021252827
IČ DPH: SK2021252827**

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**Ema
LAZORČÁKOVÁ**



**Miroslava
RAJČÁNIOVÁ**



Euroquality

A WARRANT HUB COMPANY

EUROQUALITY (EQY)

Who are we ?

Euroquality is a consulting company specialised in European projects setting up and management. Since 1997, Euroquality supports technological and methodological innovation within all organisations active in R&D (SME, industries, research centres, NGOs, universities, etc.). Euroquality has supported the consortium in the setting up of the RETOUCH NEXUS proposal.

What is our role in the project ?

Euroquality will lead the work package on the communication and dissemination activities in order to reach the greatest possible audience; promote Project Results across external stakeholders and the general audience, to maximise its impacts and visibility across Europe and beyond.

EQY will use its large experience to propose a tailored Communication and Dissemination Plan (D5.1) and will implement communication activities for general audience (T5.2) and dissemination to various target audiences (T5.3).



Main contact name

Solène FOVELLE

E-mail

solene.fovelle@euroquality.fr

Website

<https://euroquality.fr/en>

Address

**39 rue Saint-Lazare
75009 Paris**

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**Clémence
GRACIA**



**Barthélémy
MAILLARD**



VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK (VITO)

Who are we ?

VITO works at de-risking innovation for businesses and strengthens the economic and societal fabric of Flanders, with interdisciplinary research and large-scale pilot installations. Its aims to accelerate the transition to a competitive, clean and secure environment in Flanders and the world, and to stimulate sustainable use of space and water, with links to health, agriculture and more.

What is our role in the project ?

VITO, coordinator of Waterproof project, will be the Belgian Case Study Leader and will work closely with the drinking water utility De Watergroep (DWG), partner in the project. The case study focuses how making business parks and residential parks more climate-resilient with collective rainwater measures and water reuse. The main challenge is the development of water pricing mechanisms for secondary water. This mechanism is not available yet and is needed for the sustainable management of the actual ongoing investments.



Main contact name
Katrien VAN HOOYDONK

E-mail
katrien.vanhooydonk@vito.be

Website
<https://vito.be/en>

Address
**Boeretang 200
2400 Mol
Belgium**

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**Lilian
TAVERNIER**



**Steven
BROEKX**



**Wim
SCHIETTECATTE**



De Watergroep
WATER. VANDAAG EN MORGEN.



DE WATERGROEP (DWG - AFFILIATED ENTITY)

Who are we ?

De Watergroep is the largest drinking water company in Flanders. Yearly, they supply 130 million cubic meters of water to their 3.3 million customers through more than 34,000 km of pipes. Client-driven thinking and acting is the hallmark of all their business practices. As a water company, they have developed a strong technological edge to support their passion for water as a source of life and health. Furthermore, they are strongly committed to innovation and have already participated in various European projects (f.e. B-Water Smart and Superlocal). Their mission is to supply water in a sustainable way today, for tomorrow's generation. This is achieved by ensuring the economically and ecologically responsible management of every link in the water chain: rainwater, groundwater, surface water, drinking water and wastewater.

What is our role in the project ?

De Watergroep, an affiliated partner, will support VITO on the implementation of Belgian Case Study Leader. The case study focuses on the rainwater collection in a business park. Rainwater collection is an obligation in Belgium for industrial companies. However, its reuse is currently limited and unevenly distributed (low demand for application for most companies, higher demand than supply). The main challenge is the development of water pricing mechanisms for secondary water. This mechanism is not available yet and is needed for the sustainable management of the actual ongoing investments in the Waterproof project.



Main contact name

Pauline OTTOY

E-mail

pauline.ottoy@dewatergroep.be

Website

<https://corporate.dewatergroep.be/en>

Address

**Vooruitgangstraat 189
1030 Brussels
Belgium**

T
e
a
m

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s



**Charlotte
JACOBS**



**Ian
MONTAUBAN VAN
SWIJNDREGT**



ENERGY AND WATER AGENCY (EWA)

Who are we ?

The Energy & Water Agency (EWA) is an organisation of the Government of Malta under the Ministry for Environment, Energy and Enterprise. Since its creation in 2014, its mission has been to ensure the security, sustainability and affordability of energy and water in Malta. As a governmental agency, EWA formulates and coordinates the implementation of the Government's national policies for energy and water, as well as EU legislation with regards to renewable energy, energy efficiency, water demand management, and the security of Malta's electricity, gas and water supply.

What is our role in the project ?

The Energy and Water Agency will manage the Maltese case study which will address the management of water resources at the national level within the Malta River Basin District. The Malta case study will present a context of water scarcity arising due to the natural semi-arid conditions which prevail in the islands and focus on the development of the system analysis required for the optimisation of water supply to the municipal and agricultural sectors, which is becoming increasingly dependent on non-conventional water resources (sea-water desalination and water reclamation). This within Malta's water policy framework which focuses on the conjunctive use of water supply augmentation and water demand management measures to ensure the achievement of long-term water supply security, in an increasingly environmentally sensitive manner.



Main contact name
Manuel SAPIANO

E-mail
manuel.sapiano@gov.mt

Website
<https://energywateragency.gov.mt/>

Address
**Pinto Business Centre
Triq il-Mithna
Qormi, Malta**

T
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**Nicholas
ELLUL**



**Nadine
VELLA**



**Aaron
CUTAJAR**



**Nadia
GATT GAFA**



**Marco
GRAZIANI**



hoogheemraadschap
Hollands
Noorderkwartier

HOOGHEEMRAADSCHAP HOLLANDS NOORDERKWARTIER (HHNK)

Who are we ?

Regional Water Authority of Holland Noorderkwartier is the water manager in the Dutch province North-Holland north of the North Sea Canal (Amsterdam). HHNK protects land against flooding. The water system is managed -for both the quality and quantity- by a canal system. Furthermore the sewage is purified and the rural roads are managed.

What is our role in the project ?

The water authority Hoogheemraadschap Hollands Noorderkwartier, responsible for water quality and quantity management in the province of North Holland, will manage the Dutch case study and will be supported by the academic partner VUA. The case study focuses on the fresh water supply and quality with rising population numbers and consequent housing issues as well as the increase of large-scale industries in the area, in combination with longer periods of drought leading to a serious decline in the fresh water supply.



Main contact name

Floor van Schie

E-mail

f.vanschie@hhnk.nl

Website

<https://www.hhnk.nl/english>

Address

**Stationsplein 136, 1703 WC
Heerhugowaard**

T
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**Ronald
KOOLEN**



**Marja
KORTING**



GREENING THE ISLANDS

Who are we ?

Greening the Islands is an innovative start-up company committed to building a network of key stakeholders working together for self-sufficiency, sustainability, resilience and improved livelihoods on islands and in remote locations. It facilitates cooperation between local, regional and national governments, institutions, utilities, innovation providers, investors, industry associations, academics and media. It supports the development and the dissemination of the best innovative, sustainable solutions for islands involving and creating value for local communities.

What is our role in the project ?

GTI will also support EWA in the management of the Maltese case study. The case study will focus on the water supply for the municipal sector and recently for the agricultural sector that is becoming increasingly dependent on non-conventional water resources (sea-water desalination and water reclamation) – hence directly drinking water supply and food production to the energy requirements for the treatment and distribution of the produced water.



Main contact name
Gianni CHIANETTA

E-mail
**g.chianetta
@greeningtheislands.net**

Website
<http://www.greeningtheislands.net/>

Address
**Via Giuseppe Sciuti, 112
90144 Palermo
– Sicily Island Italy**

T
e
a
m

m
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m
b
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s



**Emilio
GABBRIELLI**



**Francesco
LUISE**



**Mattia
MONACO**



**Andrea
MORABITO**



**Sabrina
PENTECOSTE**



**Jean Karl
MICALLEF-GRIMAUD**



**Graziana
SALVATI**

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Regierung von Oberfranken 



REGIERUNG OBERFRANKEN (ASSOCIATED)

Who are we ?

The Government of Upper Franconia (die Regierung von Oberfranken) carries out tasks within the competence of various ministries. Its task is to weigh the various interests against each other, place them under one and the same umbrella, and reach a decision that is both prompt and rational. In order to perform its duties in the field of co-ordination proficiently, the Government employs many experts in different fields.

What is our role in the project ?

Regierung Oberfranken, associated partner, will support TUM in the implementation of the German Case Study. The Upper Main region covered is characterised by a strong interconnection of all WEFE aspects, where, however, stakeholders mainly communicate on a project-based level, without a fixed communication network. Due to the hydrological extremes (floods and droughts), tensions among stakeholders are expected to increase. Therefore, there is an urgent need to overcome tensions among different water users, while ensuring environmental sustainability.



Main contact name

Andrea KÜNZL

E-mail

Andrea.Kuenzl@reg-ofr.bayern.de

Website

<https://www.regierung.oberfranken.bayern.de>

Address

Regierung von Oberfranken

Postfach 11 01 65

D-95420 Bayreuth

13



MINISTRY
OF AGRICULTURE
AND RURAL DEVELOPMENT
OF THE SLOVAK REPUBLIC

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

Who are we ?

The Slovakian Ministry of Agriculture and Rural Development performs state administration within the scope of its remit, including specialised state supervision in the areas of agriculture and rural development. It directs, guides and inspects the execution of the state supervision of irrigation systems, drainage systems and the execution of the program of agricultural activities in the declared vulnerable areas.

What is our role in the project ?

The Slovakian Ministry of Agriculture and Rural Development, associated partner, will support SUA in the management of the Slovak case study. The case study will focus on increasing water retention capacity, improving irrigation systems and enhancing the landscape structure have a direct impact on reducing the risks of floods and droughts in the southwest part of Slovakia, ensuring water security, eliminating desertification and reducing the loss of biodiversity.



Main contact name

Martin Kováč

E-mail

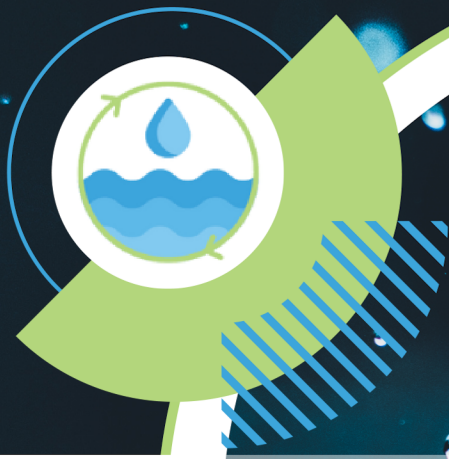
martin.kovac@land.gov.sk

Website

<https://www.mpsr.sk/en/index.php>

Address

Dobrovičova 12.
Bratislava 812 66



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@RETOUCH NEXUS



www.retouch-nexus.eu



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