1

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Manuel Boluda
Technician
GDW (Murcia Region)
AQUARES

Interreg Europe

European Union | European Regional Development Fund

INVENTORY OF WATER RECLAIMED IN HYDRO-GRAPHIC BASIN

- Description
  - It is an **essential requirement** to start reusing water.
  - It consists of including the reclaimed water into the inventory (River Basin Management Plan) of water resources.
  - This inventory sets:
    - How much water and in which conditions is available to potential users
    - A transparent open procedure to allow the users take advantage of this resource
- Results
  - Farmers reused 109 Hm^3, i.e. the 95,5 % of the available reclaimed water in 2019. (https://www.esamur.com/reutilizacion)
  - An equivalent water volume left to be exploited of the groundwater.
- Timing: (1999-ongoing) (Royal Decree 1664/1998)
- Budget: N/A
- Responsible organization: Segura River Basin Authority (https://chsegura.es/en/cuenca/index.html)

Thank you!

Manuel Boluda Fernández
GDW MURCIA REGION
aquaresprojectmanager@gmail.com

Interreg Europe

European Union | European Regional Development Fund

2

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Mollenhauer Silke
M.A.
OOWV
AQUARES

Interreg Europe

European Union | European Regional Development Fund

Lessons learnt from the project MULTI-ReUse

- Description
  - Water reuse pilot plant in Nordenham
  - Reuse from waste water treatment plant
  - Ultra filtration (UF) und reverse osmosis (UO)
  - Quality monitoring - flow cytometry
  - https://water-multi-reuse.org/en/

AQUARES
Interreg Europe

European Union
European Regional
Development Fund

- Results
  - Water qualities required for industry do not necessarily have to be obtained from groundwater or drinking water sources
  - Fit-for-Purpose Water
  - Each water reuse requires a preceding site-specific risk analysis with binding treatment, operation and monitoring concepts derived from it, which must be continuously continued and their implementation monitored.

- Timing: 2016 – 2019
- Budget: 1.5 Mio €, National research project
- Responsible organization: Project coordination https://iww-online.de/

Thank you!

Mollenhauer Silke
OOWV
Mollenhauer@oowv.de

Interreg Europe
European Union | European Regional Development Fund

3

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Mollenhauer Silke
M.A.
OOWV
AQUARES

Interreg Europe

European Union | European Regional Development Fund

Alternative sources for agricultural irrigation

- Description
  - Reuse of production (waste) water from a sugar factory
  - Reuse of 1,4 Mio m^3 per Year
  - Reservoirs are filled up during the processing of the sugar roots with pre-cleaned water and the water is then used for field irrigation in the following year
  - The farmers who invested in the reuse of the production water and reuse of treated waste water have been granted increased groundwater access for irrigation

- Results
  - The greater the degree of release into the environment, soil, water and contact with humans (as producers or consumers), the higher the level of purity and monitoring must be. Especially for purposes such as agricultural irrigation or artificial groundwater recharge, the highest requirements must be defined. Therefore, in the sense of the precautionary principle, water reuse for groundwater recharge and for agricultural irrigation should not be done in water protection areas.

- Timing: Main phase: 2002-2012, work is continued
- Budget: In the region around approx. 12 Mio. Euros were invested in a time frame of 10 years.
- Responsible organization: Chamber of Agriculture Lower Saxony

Thank you!

Mollenhauer Silke
OOWV
Mollenhauer@oowv.de

Interreg Europe

European Union | European Regional Development Fund

4

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

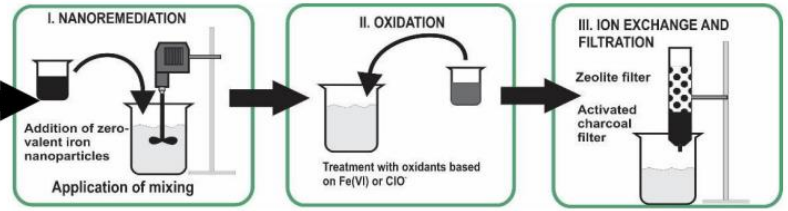
Sara Uhan
Project coordinator
Municipality of Trebnje
AQUARES, Interreg Europe

AQUARES
Interreg Europe

Interreg Europe
European Union | European Regional Development Fund

Nanoremediation of water from small WWTP and reuse of water and solid remains for local needs - LIFE RusaLCA

- Description
  - The development of small-scale wastewater treatment plant in the Municipality of Šentrupert
  - A new wastewater cleaning technology – nanoremediation.
  - Zero solid-waste management.



- Results
  - **Reduction of the consumption of water obtained from natural sources by up to 30 %**.
  - Using the organic sludge from WWTP, and the sediment from nanoremediation tank, in different types of **construction composites**.

- Timing: July 2013 – September 2017.
- Budget: 850.00 EUR (co-financing by the LIFE+ Program 50%)
- Responsible organization: Slovenian National Building and Civil Engineering Institute

More information:
rusalca@zag.si

Thank you!

Sara Uhan
Municipality of Trebnje
sara.uhan@trebnje.si

Interreg Europe

European Union | European Regional Development Fund

5

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Iwona Marcinkowska
Chief Specialist
Lodzkie Region
AQUARES Interreg Europe Project

Interreg Europe
European Union | European Regional Development Fund

Integrated chemical-biological textile sewage treatment plant in Biliński Textile Factory

- Description
  - Biliński Textile Factory for over 28 years, has been consistently growing as a Polish family business,
  - It offers wide array textile services (dyeing, chemical bleaching, digital printing, washing, softening),
  - In connection with the growing water deficit, Biliński Textile Factory decided to introduce technologies enabling the recovery of treated wastewater.
    The sewage treatment and closed water cycle project for Biliński Textile Factory was completed in compliance with BAT (Best Available Techniques) for the textile industry (European Commission, 2003),
  - The wastewater treatment and recycling system assumes its division into 3 streams with respect to biodegradability (low-loaded sewage with mineral pollution; wastewater whose components could adversely affect the operation of the activated sludge; highly salinated waste water.

- Results
  - Thanks to a chemical-biological wastewater treatment plant with a closed cycle that is now operational, the factory is managing to reuse 50% of the total water used in its production processes and to significantly reduce the water actually consumed for the production of textiles, which has been brought down from 50 litres to 3 litres per kilo,
  - Reusing 50% of water in production processes brings economic benefits, but also measurable environmental benefits: lower load on the sewage network, lower load on the WWTP, positive impact on the quality of treated sewage released to the environment by the WWTP, minimizing the impact on lowering the groundwater level by reducing its abstraction,
  - 30% desalination in an automated closed cycle brine in dyening process.

- Timing: 28 years on the market
- Financing: Part of the project was co-financed by the Regional Operational Programme for Lodzkie Voivodeship
- Responsible organization: **Biliński Textile Factory https://farbiarniabilinski.pl/o-nas/**

Thank you!

Iwona Marcinkowska
Lodzkie Region
projekty.miedzynarodowe@lodzkie.pl

Interreg Europe

European Union | European Regional Development Fund

6

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Adelaide Mancini
Project manager
Baltic Coasts (Latvia)
AQUARES

Interreg Europe
European Union | European Regional Development Fund

Rainwater reuse for service vehicle washing

Description

- Joint stock company “Latvian Road Maintenance” - (Kandava municipality) - more than 30 vehicles
- **Until 2011** vehicles are washed with **drinking water** + water is discharged in the **environment** without any purification treatment + **fine** for environmental pollution (the area is within a nature park)
- In **2012** a **rainwater treatment plant** service is installed. **Water is collected, treated, and reused several times**. / No impact to the environment

Results

- No pollution in the surrounding area in the last eight years / no pollution fees / awareness raising
- Drinking water only in case of prolonged drought / accumulated sand used for winter road treatment / financial savings
- Three more plants currently under development - high transferability / replicability

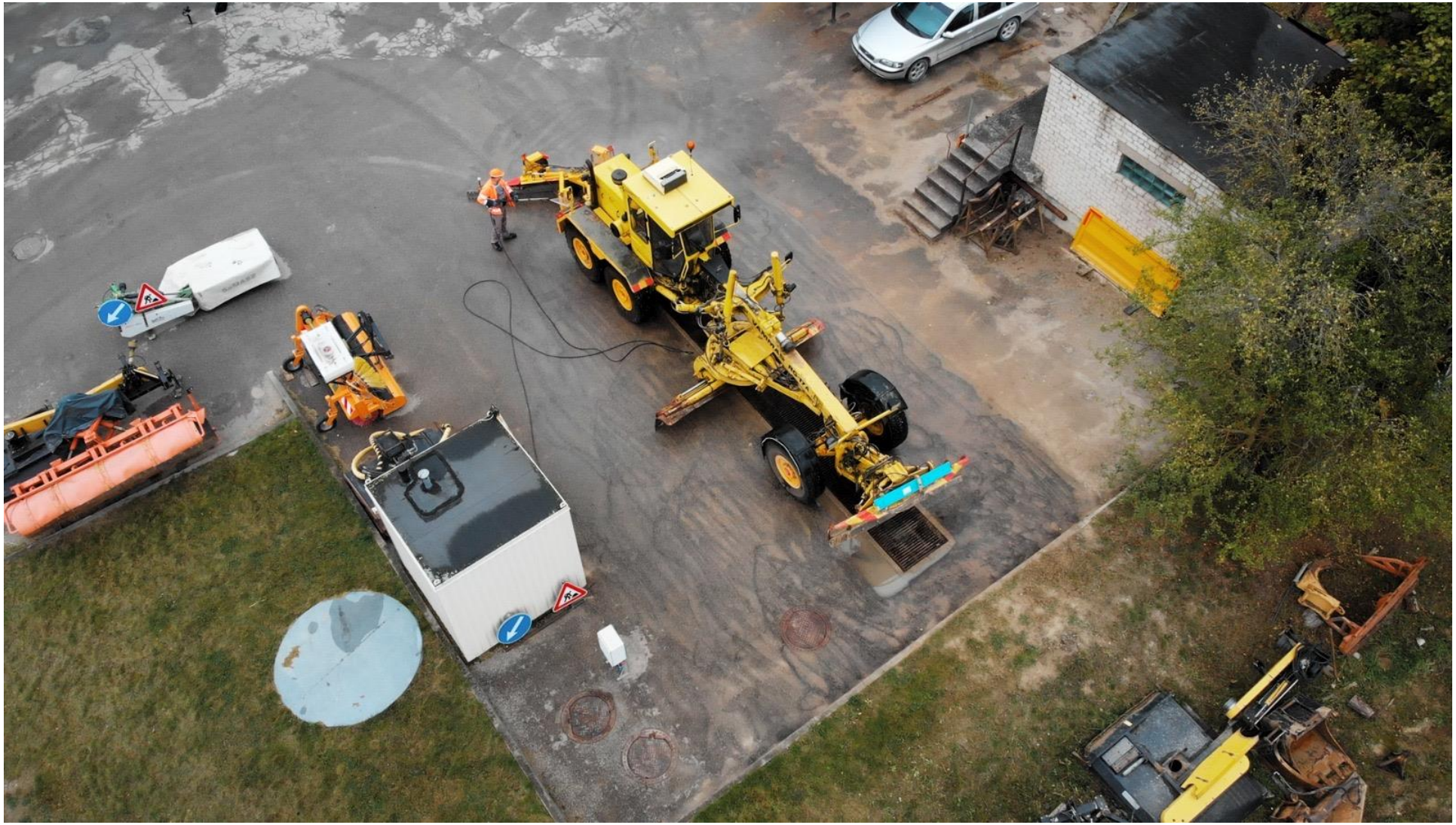
Timing i.e. short, medium or long-term: long term — implementation: 6 months

Budget: 4571 EUR + treatment plant’s service contract / ROI: 600-700 euro/year saved on drinking water

Responsible organization: Daina Ieviņa - reindave@inbox.lv - Detail designer Ltd. «3C»

Lecturer at Latvia University of Life Sciences and Technologies

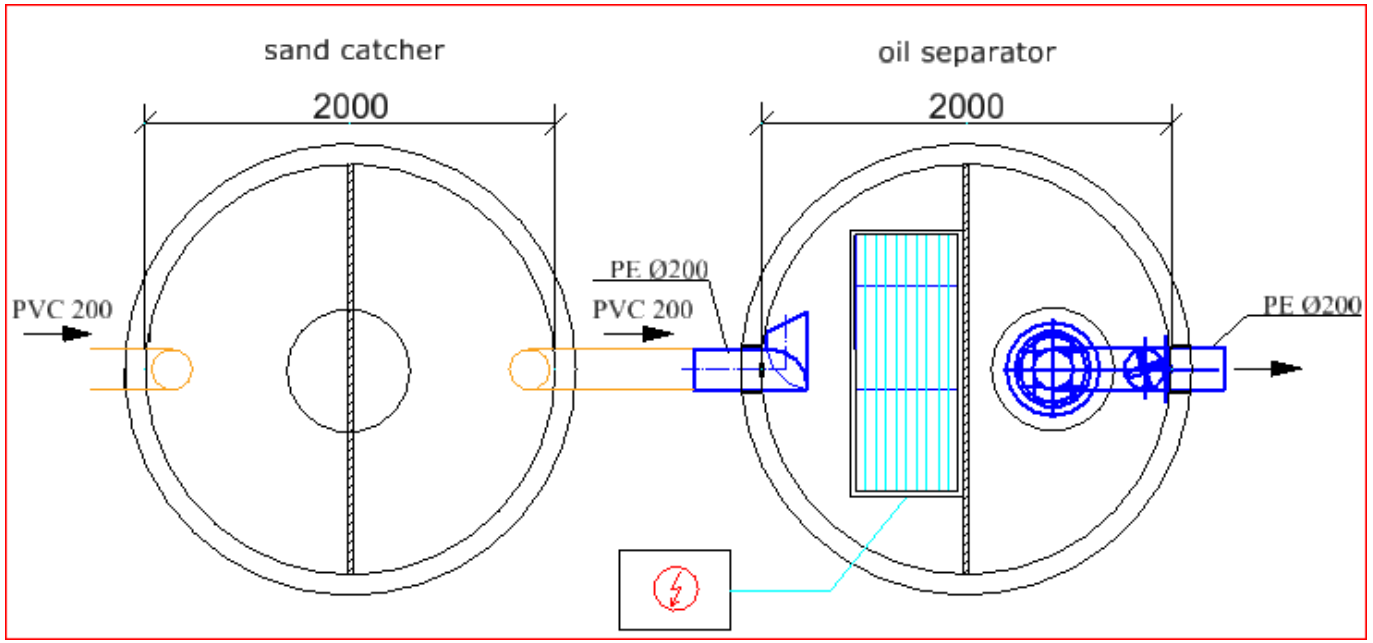
Treatment plant (1/2)



https://www.youtube.com/watch?v=T5UZfTUnRQM&t=3s

Treatment plant (2/2)

- **Sand catcher 5m³**
- **Certified Class I oil separator Q=20 l/s**
- **Storage tanks 2 pcs. water for reuse existing, sealed**



Thank you!

Adelaide Mancini
Baltic Coasts
info@baltijaskrasti.lv

7

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Mihaela Frincu
Director/ Project Manager
INCDCP ICECHIM Calarasi
BIOREGIO

Interreg Europe
European Union | European Regional Development Fund

Composting municipal wastewater sludge and garden waste – pilot project

- Description
  - Park waste is shredded and mixed with sludge in a 3:1 ratio using a frontal loader (3 parts green waste: 1 part sludge).
  - 200 m^3 heaps are formed with aeration tubes at the base and temperature sensors are inserted and connected to a computer, so the process is partly automated.
  - The heap is covered with the GORE® Cover semi-permeable membrane, to prevent moisture and heat loss, avoid release of unpleasant smells and leaching by rainwater.
  - By using this technology, composting time is reduced from 6 months to 8 weeks.
  - In the second phase of the pilot project compost was tested on agricultural land.
- Results
  - Landfilling costs for sludge and park waste saved ~ 24.000 €/ year
  - Large amounts of biowaste are no longer landfilled and are returned to green areas (circularity)
  - Reduced storage time on the platform / less storage capacity needed using the membrane technology
  - High quality compost, tested for pathogens and pollutants
  - Expected revenues in the coming years from compost commercialisation
  - Potential for training, sharing knowledge and creating new “green jobs”
- Timing: long-term
- Budget: 150,000 €
- Responsible organization: Municipal Services for Mioveni Community. Romania

Thank you!

Mihaela Frincu
Director, ICECHIM Calarasi
icechim.calarasi@gmail.com

Interreg Europe

European Union | European Regional Development Fund

8

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Lytras Efth., Samios St., Katsouras G.
EYDAP SA, Research and Development
BIGDATA4RIVERS

BIGDATA 4RIVERS
Interreg Europe

Interreg Europe
European Union | European Regional Development Fund

EYDAP

RDFA REGIONAL DEVELOPMENT FUND OFATTICA

Water quality monitoring with the use of robotics boats (EYDAP, Region of Attica)

Description

- Robotic boats with sensors
- Real time monitoring &visualization platform

Results

- Fast & flexible data collection
- Improved management of the site sampling plan
- Low lab equipment management
- High level of customization
- Scanning of larger areas

Timing: Results promptly on one's screen (a quick diagnosis)

Budget: According to the river length or the catchments area size

Responsible Organization: EYDAP SA

Problems:

1. Inadequate water quality data & data management focuses on small parts of rivers and lakes
2. Not Real time monitoring

Solutions:

1. Water monitoring with autonomous, miniaturized, customized, unmanned boats that can approach points difficult to reach
2. Real time monitoring & visualization platform

Supported by the Horizon 2020 Framework Programme of the European Union

Interreg Europe

European Union | European Regional Development Fund

Good practice:

WATER QUALITY MONITORING WITH THE USE OF ROBOTIC BOATS

Thank you!

Research & Development EYDAP SA
r-d@eydap.gr

www.interregeurope.eu/bigdata4rivers/

www.eydap.gr

www.intcatch.eu

9

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Roland Zinkernagel
Sustainability Strategist
City of Malmö

Interreg Europe
European Union | European Regional Development Fund

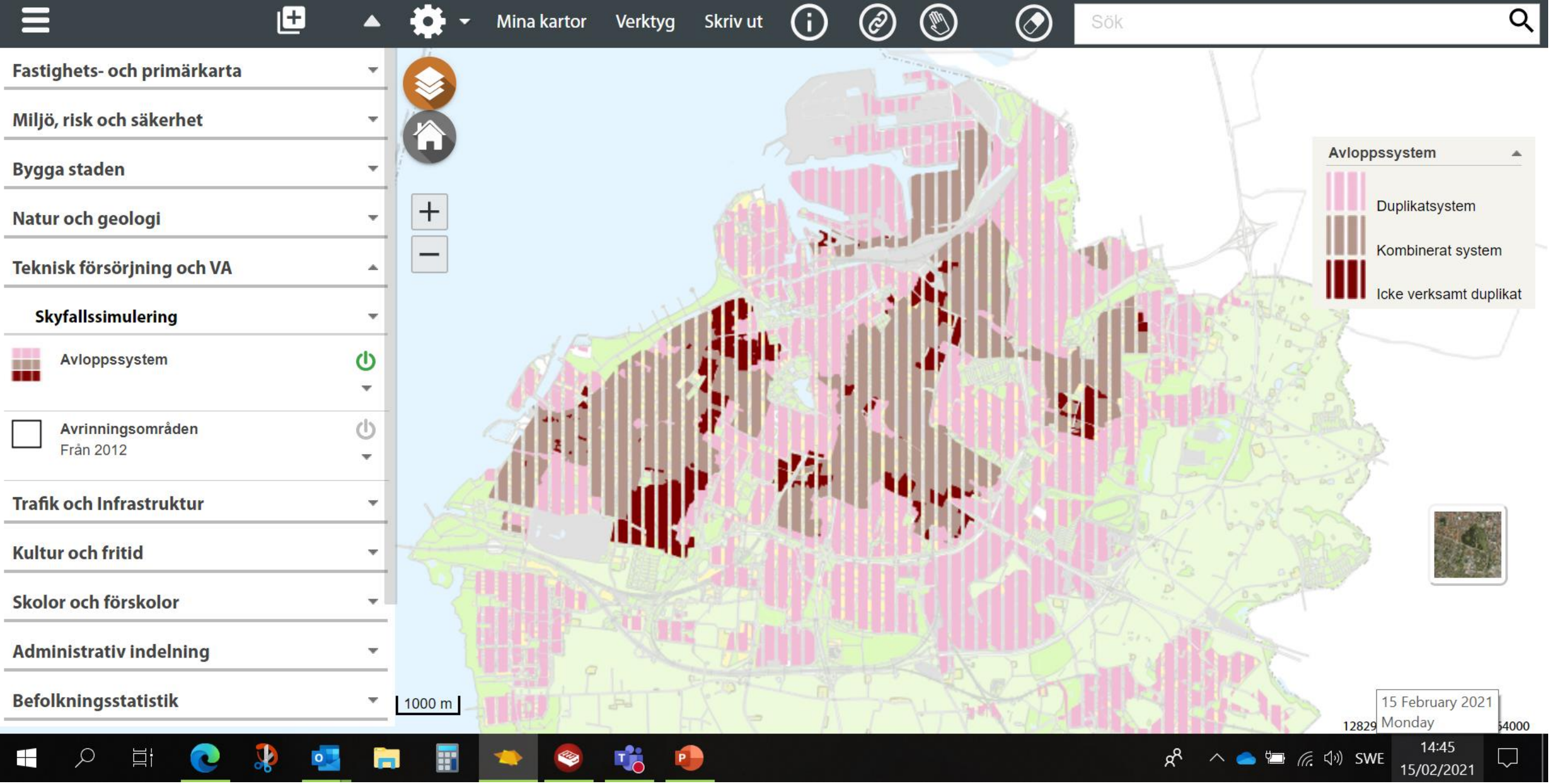
Storm water management to reduce the amount of water that goes to treatment

- Description
  - Local solutions to slow and retain storm water in parks and green areas, green roofs, Rain gardens on streets and car parks
  - Reduce the amount of storm water to the sewer system, especially in areas with combined storm and wastewater infrastructure

- Results
  - Green area factor (forcing landscape architects to plan for more permeable surfaces), regulating max % area of soil sealing
  - Multi-functionality is a very hot topic, using green areas for storm (and downpour) water is welcome
  - But arguments for sponge city concepts are plentiful: diversity and variation, increase biodiversity, enhance social interaction, meeting challenges of a changing climate…

  - Saves/delays heavy investments in new infrastructure
  - Reduces risks for flooding (heavy rainfall)
  - Contributes to meeting WFD requirements (as pure stormwater is otherwise not necessarily treated)

- Timing: continuous
- Budget: investment-heavy unless it is combined with ongoing maintenance
- Responsible organization: City of Malmö, VA Syd


Mina kartor
Verktyg
Skriv ut
Sök
Fastighets- och primärkarta
Miljö, risk och säkerhet
Bygga staden
Natur och geologi
Teknisk försörjning och VA
Skyfallssimulering
Avloppssystem
Avrinningsområden
Från 2012
Trafik och Infrastruktur
Kultur och fritid
Skolor och förskolor
Administrativ indelning
Befolkningsstatistik
Avloppssystem
Duplikatsystem
Kombinerat system
Icke verksamt duplikat
1000 m
15 February 2021
Monday
SWE
14:45
15/02/2021

Thank you!

Roland Zinkernagel
City of Malmö
roland.Zinkernagel@malmo.se

Interreg Europe

European Union | European Regional Development Fund

10

Enhancing policy solutions for water reuse, wastewater and ground water pollution

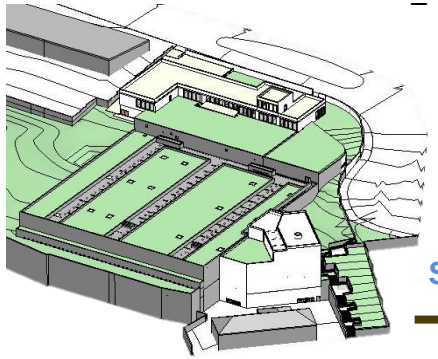
Community brainstorming, 23 February 2021

Louise Coffineau
Policy Advisor
Eurocities
Interreg Europe Project

Interreg Europe
European Union | European Regional Development Fund

Porto Wastewater Treatment Complex

- Description
  - Porto WWTP transformation into resource factory, from a circular economy perspective



_Wastewater recycling

Sobreiras WWTP

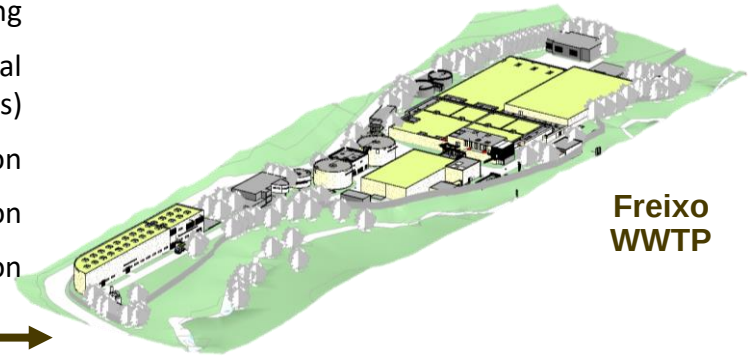
_Wastewater recycling

_Sludge treatment by thermal hydrolysis (Freixo+Sobreiras)

_Sludge commercialization

_Biomethane production

_Solar PV electricity production



Freixo WWTP

Sludge transport through elevating pipes

SOBREIRAS-FREIXO CONNECTION

- Results

13 900 ton/year
Biocomposite production

17 655 MWh/year
Clean energy production
70% of self-sufficiency

100% of water reuse
(56 000 m^3/day)

Biowaste incorporation up to 7 100 ton/year

20% of CO_2 emission reduction

- Timing: medium term
- Budget: € 50,000,000 (payback of 7-8 years)
- Responsible organization: Águas e Energia do Porto

Thank you!

Louise Coffineau
Eurocities
Louise.coffineau@eurocities.eu

Interreg Europe

European Union | European Regional Development Fund

11

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Sara Uhan
Project coordinator
Municipality of Trebnje
AQUARES, Interreg Europe

AQUARES
Interreg Europe

Interreg Europe

European Union | European Regional Development Fund

Degradation of pharmaceuticals in wastewaters from nursing homes and hospitals – LIFE PharmDegrade

- Description
  - Common biological wastewater treatment plants are usually insufficiently equipped to treat pharmaceuticals and sometimes produce metabolites that are often more problematic than the pollutant treated – advanced tertiary treatment is needed.
  - Introducing en efficient and viable technology based on the advanced oxidation processes associated with electrochemical degradation of pharmaceuticals, using electric power and the advanced electrode materials.
- Results
  - A pilot plant to demonstrate a technological solutions of electrochemical oxidation for the removal of pharmaceuticals from wastewater.
  - The trial showed that **up to 90% of all tested pharmaceutical residuals could be removed in a cost-effective way**.
  - The technology was shown to be flexible, suitable for different applications, with low maintenance costs and high efficiency.

- Timing: September 2014 – November 2016
- Budget: 1.217.000 EUR (co-finanzing by the LIFE+ program 45 %)
- Responsible organization: Arhel d.o.o.

More information:
info@arhel.si

Thank you!

Sara Uhan
Municipality of Trebnje
sara.uhan@trebnje.si

Interreg Europe

European Union | European Regional Development Fund

12

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Zegowitz, Christina
Project Manager
Cluster of Environmental Technologies Bavaria (UCB)
PLASTECO

Interreg Europe

European Union | European Regional Development Fund

Workshop results on urban water management policies and practices to reduce microplastics

- Description on the workshop
  - interregional workshop with six **expert presentations** & discussions in six virtual **break-out rooms**
- Results & lessons learnt
  - topic of microplastics (MP) is quite a **new subject**
  - need on **awareness raising activities** (on society/ policy/ industry level) on types / sources / pot. risks
  - **technologies** to remove MP in WWTP exist
    - e.g. start-up Ecofario: separation process without a filter
  - different **research** activities on-going (e.g. on comparability of MP retention in WWTP)
    - standards for MP sampling and analyses needed
  - lack on **policy instruments** in order to remove MPs in WWTP
  - however, some policies address the **reduction of MP input** into water bodies
    - France: from 2025, new **washing machines** must have a filter that retains MP
    - Italy: ban of **wash-off cosmetics** containing plastic microbeads since 1 January 2020
    - City of Munich: sports fields with **artificial turfs** should not use plastic granulate
  - many initiatives and policies in PLASTECO regions/ countries to **reduce single-use plastics / littering** are out there
    - indirect MP reduction effects

Thank you!

Zegowitz, Christina
Project Manager
Cluster of Environmental Technologies Bavaria (UCB)
christina.zegowitz@umweltcluster.net

Interreg Europe

European Union | European Regional Development Fund

13

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Dr. Vassilios Binas
Associate Researcher
Foundation for Research and Technology
Interreg Europe Project

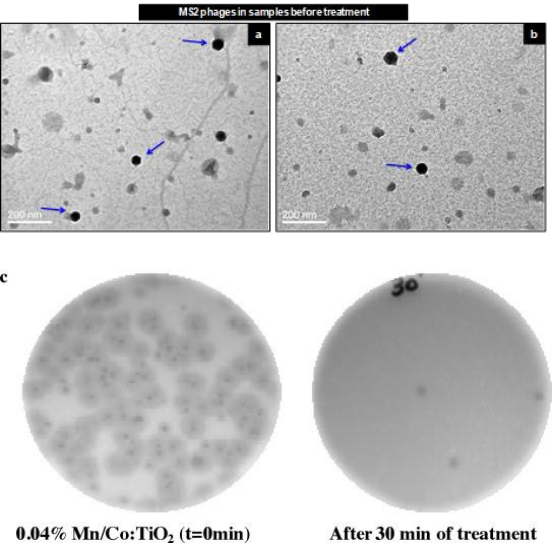
Interreg Europe
European Union | European Regional Development Fund

Utilization of **nanomaterials** for decontamination of air and wastewater by **Solar photocatalysis**

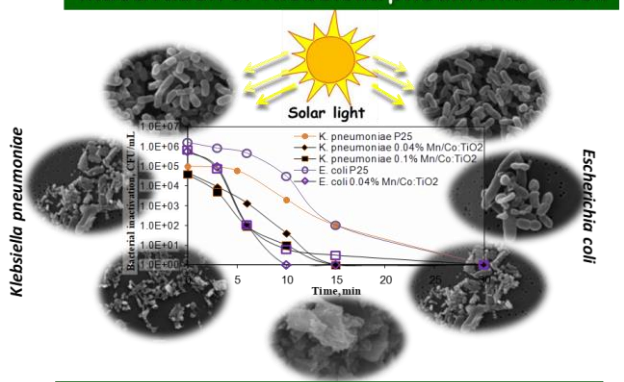
Solar photocatalysis process employed for inactivation of microorganisms and removal of micro-contaminants in air and sewage via photocatalytic nanomaterials.

- **Development of smart surfaces with photocatalytic properties** that can be applied for the degradation and inactivation of pathogenic microorganism contained in water, wastewater and air.
- The proposed nanomaterials/nanotechnology overrides the conventional chlorination methods, mainly because it does not burden water and treated waste with toxic by-products.
- Photocatalytic materials can inactivate a wide variety of pathogenic microorganisms that are important and dangerous to public health, which are particularly resistant to conventional disinfection methods such as chlorination or UV radiation
- Appropriate treatments and additional ingredients (eg minerals) carried out at FORTH, can be activated in the presence of sunlight with extremely efficient rates of isolation of pathogenic microorganisms (bacteria, parasites, viruses)

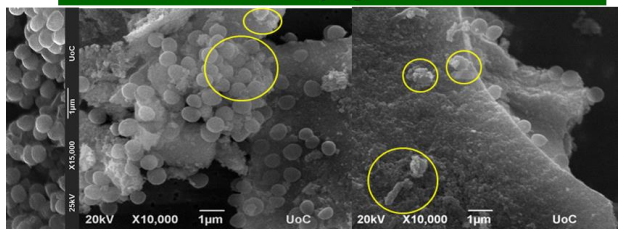
Inactivation of Viruses



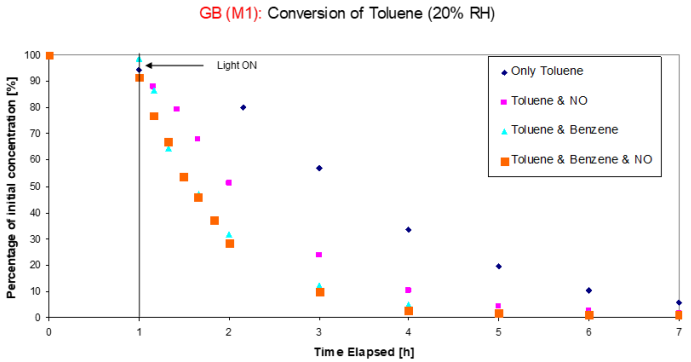
Inactivation of Klebsiella pneumonia - Ecoli



Inactivation of Staphylococcus aureus



Degradation of Gas Mixtures



Photocatalytic rate of toluene conversion affected both by RH and mixture (a,b)

- Timing i.e. short
- Budget: 140.000 euro
- Responsible organization: FORTH with PCNano materials

Thank you!

Dr. Vassilios Binas
Foundation for Research and Technology
binasbill@iesl.forth.gr

Interreg Europe
European Union | European Regional Development Fund

14

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Elena Cano
Project Coordinator
Government of Aragon
LINDANET Project

Interreg Europe
European Union | European Regional Development Fund

Strategic Action Plan against lindane waste pollution

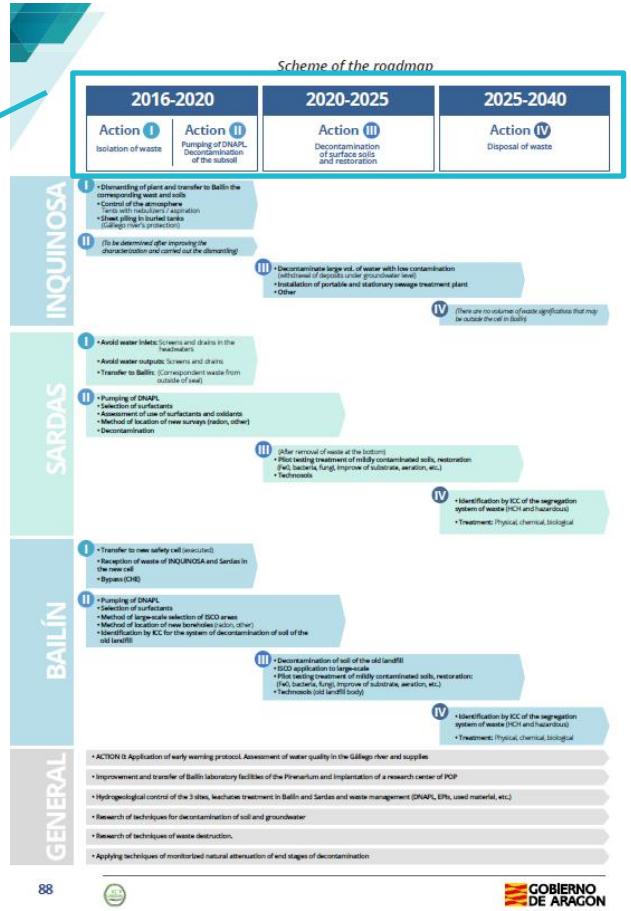
LINDANET
Interreg Europe

Lindane waste (HCH) → problem extended all over Europe

- Aragon Action Plan:
  - Overview of lindane challenge in Aragon
  - Short and long-term objectives, divided in 5 actions

Action 0. Guarantee water supply – Action I. Isolation of waste – Action II. DNAPL pumping and underground remediation – Action III. Soil remediation and restoration – Action IV. Elimination

  - **Roadmap: projects per site per action**



www.stoplindano.es/en

- Results:
  - Water quality guaranteed – website daily information
  - DNAPL close to exhaustion (residual)
  - Application of SEAR in GW with residual DNAPL
  - Application of ISCO and aeration in GW with dissolved HCH

- Timing: from short to long term
- Budget: 550 M € for the whole implementation
- Responsible organization: Government of Aragon

GOBIERNO DE ARAGON

Thank you!

Elena Cano
Project Coordinator –
Government of Aragon
ecano@aragon.es

GOBIERNO DE ARAGON

Interreg Europe

European Union | European Regional Development Fund

15

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

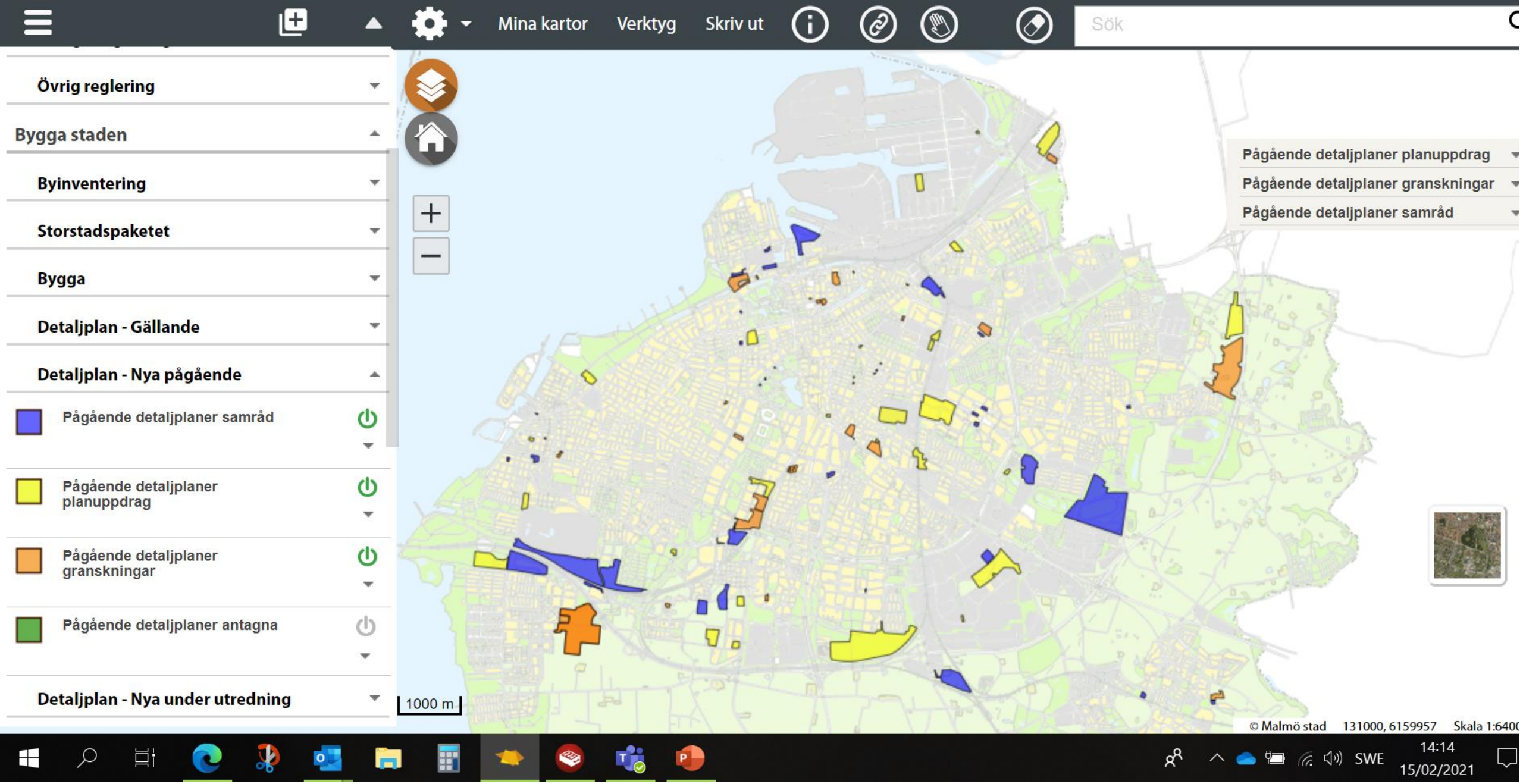
Roland Zinkernagel
Sustainability Strategist
City of Malmö

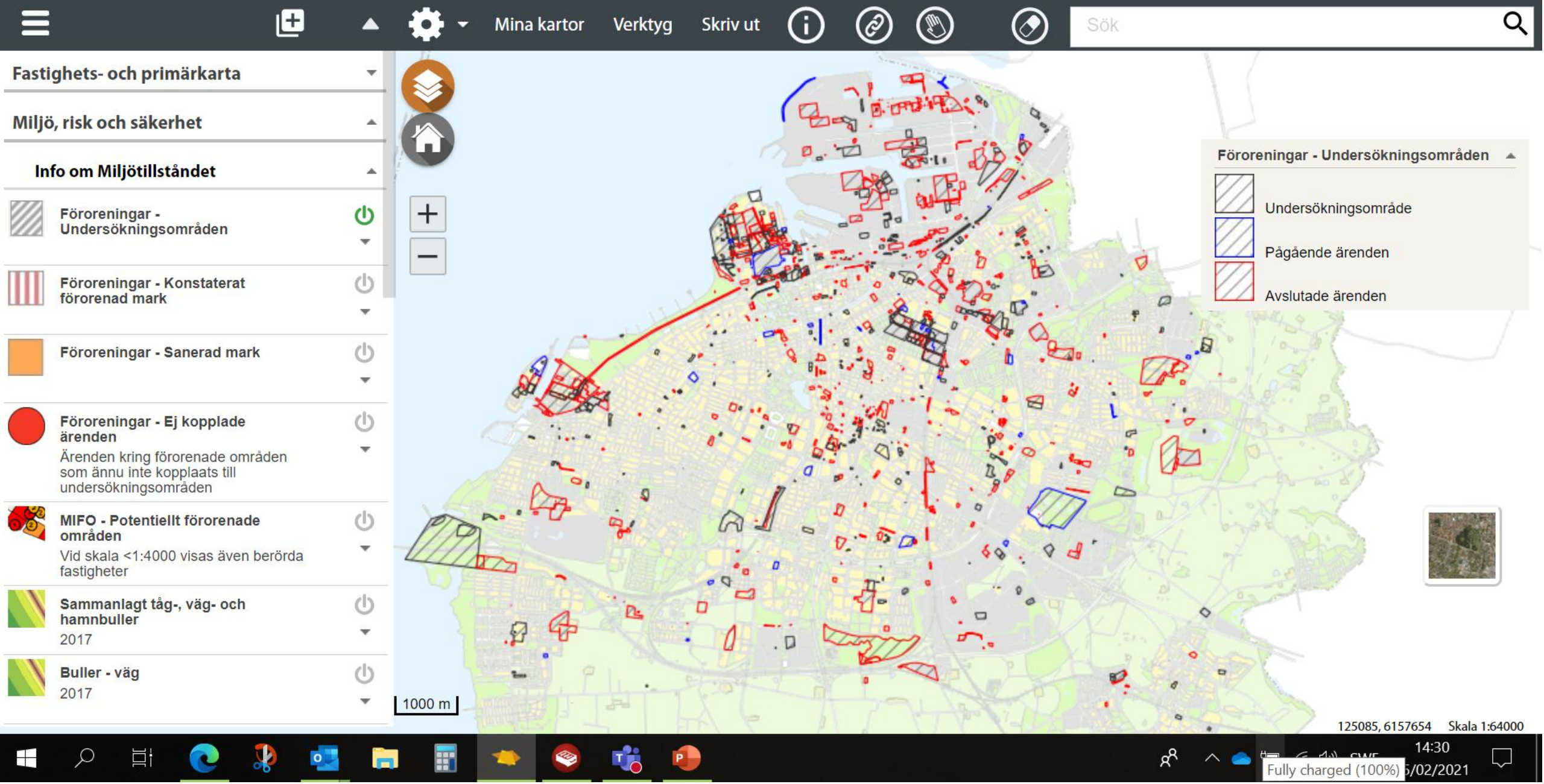
Interreg Europe

European Union | European Regional Development Fund

Groundwater pollution screening in the planning process

- Description
  - Starting point: “All soil in Malmö is polluted” (BUT no drinking water extraction in Malmö)
  - When a spatial plan is developed, the soil and groundwater needs to be tested. Soil test give a picture on site, groundwater gives a larger picture (where might the cause of the pollution be). In 2020, 57 spatial plans were started.
- Results
  - Fairly easy to do soil testing and groundwater testing at the same time, (saves costs…)
  - Skepticism: Why do I need to screen groundwater if the polluter/pollution might somewhere else? Groundwater pollution might not be a problem for the new building
  - Gives a bigger picture over pollution situation in Malmö
  - Helps to identify hotspots
  - Data and results need to be managed, analysed and followed up (with already scarce resources)
- Timing Started 2020 but is long-term practice
- Budget: Whose budget?
- Responsible organization: City of Malmö


Mina kartor
Verktyg
Skriv ut
Sök
Övrig reglering
Bygga staden
Byinventering
Storstadspaketet
Bygga
Detaljplan - Gällande
Detaljplan - Nya pågående
Pågående detaljplaner samråd
Pågående detaljplaner planuppdrag
Pågående detaljplaner granskningar
Pågående detaljplaner antagna
Detaljplan - Nya under utredning
Pågående detaljplaner planuppdrag
Pågående detaljplaner granskningar
Pågående detaljplaner samråd
1000 m
© Malmö stad
131000, 6159957
Skala 1:6400
SWE
14:14
15/02/2021


Mina kartor
Verktyg
Skriv ut
Sök
Fastighets- och primärkarta
Miljö, risk och säkerhet
Info om Miljötillståndet
Föroreningar - Undersökningsområden
Föroreningar - Konstaterat förorenad mark
Föroreningar - Sanerad mark
Föroreningar - Ej kopplade ärenden
Ärenden kring förorenade områden som ännu inte kopplaats till undersökningsområden
MIFO - Potentiellt förorenade områden
Vid skala <1:4000 visas även berörda fastigheter
Sammanlagt tåg-, väg- och hamnbuller
2017
Buller - väg
2017
Föroreningar - Undersökningsområden
Undersökningsområde
Pågående ärenden
Avslutade ärenden
1000 m
125085, 6157654
Skala 1:64000
14:30
Fully charged (100%)

Thank you!

Roland Zinkernagel
City of Malmö
roland.Zinkernagel@malmo.se

Interreg Europe

European Union | European Regional Development Fund

16

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Stefan Abel
State Office of Environment, Brandenburg, Germany

Interreg Europe Project Cocoon

COCOON
Interreg Europe

Interreg Europe
European Union | European Regional Development Fund

Complex remediation of a closed landfill below groundwater level - Case Hennickendorf, Germany

- Description
  - Landfill Hennickendorf: 13.8 ha.; 2 Mio. m³ of waste
  - No base liner system but semi-permeable clay barrier
  - Groundwater pollution
  - Remediation: sealing wall around the landfill, capping system on top
  - Installation of drainage facilities to keep the overall groundwater level low

- Results
  - Only way water can enter the landfill is from beneath
  - Reduced groundwater pollution

- Timing: long-term project
- Budget: 20,755,892 Euro (75 % funded by ERDF)
- Responsible organization: LfU

Thank you!

Stefan Abel
LfU Brandenburg, Germany
stefan.abel@lfu.brandenburg.de

Interreg Europe
European Union | European Regional Development Fund

17

Enhancing policy solutions for water reuse, wastewater and ground water pollution

Community brainstorming, 23 February 2021

Mollenhauer Silke
M.A.
OOWV
AQUARES

Interreg Europe
European Union | European Regional Development Fund

Overview of the TOPSOIL Project

- Description
  - 5 challenges:
    - Flooding in towns and agricultural areas
    - Saltwater intrusion into freshwater reserves
    - Groundwater buffer to store water
    - Better knowledge and management of soil conditions
    - Better land management to protect the soil of nurtrients and other environmentally hazardous pollutants
  - https://northsearegion.eu/topsoil/

- Results
  - Groundwater is an important and vulnerable resource. The quality of groundwater must be protected just as much as the quantity. This is especially necessary in water protection areas, which are used for drinking water production.

- Timing: 2015 - December 2021
- Budget: € 8.4 Mio. of which 50% EU funding
- Responsible organization: Project Coordinator Region Midtjytland, Denmark https://www.rm.dk/om-os/english/

Thank you!

Mollenhauer Silke
OOWV
Mollenhauer@oowv.de

Interreg Europe
European Union | European Regional Development Fund