

LOCWAT – Local wastewater treatment solutions 2020

Project proposal and implementation related to PA4

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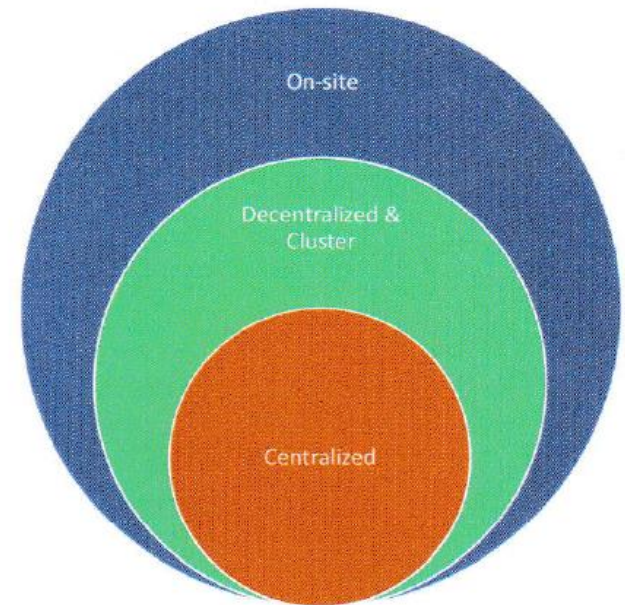
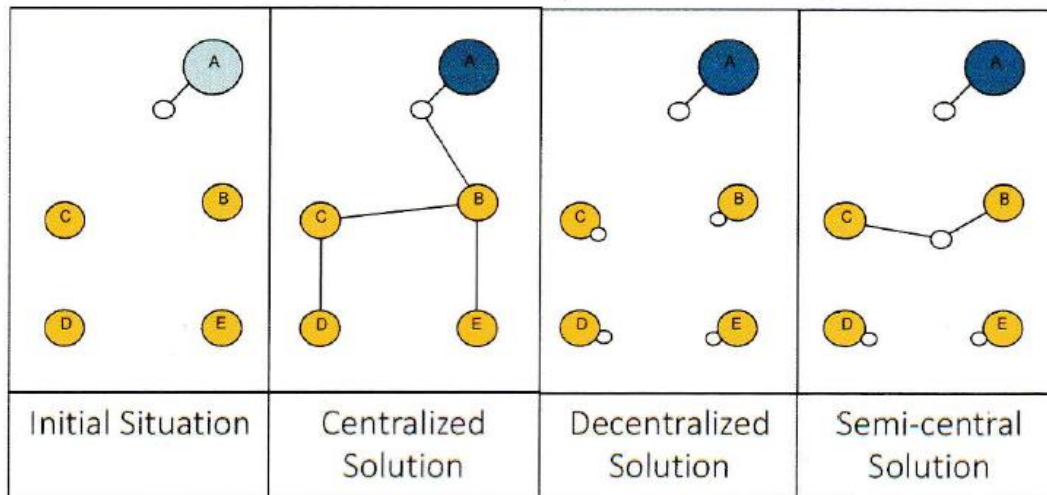
- Organization that promotes individual wastewater treatment solution principles
 - Why individual?
 - Waste water disposal concept in the case of each project
 - Target < 2.000 PE
- Decision making aspect
 - Multi criteria analysis
- Modern wastewater management

MODERN, DECENTRALIZED WASTEWATER TREATMENT MANAGEMENT

- Multi criteria analysis
 - Population
 - Groundwater and surface water vulnerability
 - Topography and hydrology
 - Required sewer network
 - Available wastewater treatment technologies
 - Total costs analysis - investments, reinvestment and operation cost
 - Reuse- potential effluent irrigation

Decentralized Wastewater Management DWM

DWM may be defined as the collection, treatment, and disposal /reuse of wastewater from individual homes, clusters of homes, isolated communities at or near the point of waste generation



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Some Advantages of DWM

- Adaptation: Resilience infrastructure
- Recycle: Nutrients recovery (Nitrogen and Phosphorus)
 - Wastewater reuse close to generation point
 - Integration with agriculture and local economies
- Financial advantages by less collection costs: Centralized approaches require ~ 60% -80% only in collection and transportation ⁽²⁻³⁾
- Simple operation and less O&M costs ⁽²⁾
- Community integration
- Attractive for rural and peri-urban areas
- Less environmental disturbances for construction

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LARGE PROJECT PROPOSAL

Background

- Directive 91/271/EEC on supply settlements with sewerage treatment affects settlements only above 2000 PE.
- The EU supports with funds these investments, but the settlements below 2000 PE, have lack of funds. Generally in the poorer Danubian countries the preference of the governments, the inhabitants, and even the water experts are the traditional sewage treatment solutions, even if the settlement structure would enable an alternative for individual, decentralized wastewater treatment.

Based on best practice - the project's general aim to provide information about individual, non-conventional wastewater treatment solutions.

BECAUSE: in the poorer countries along the Danube

Why is needed?

- water utilities scissors are wide open.
 - wastewater is generally discharged untreated into watercourses
 - or alternatively stored in poorly insulated septic pits -serious threat to the underground water.
 - vast lack of information and knowledge regarding to decentralized wastewater treatment solutions. Mainly conventional systems are applied in all cases even if the settlement structure, geographical, topographical situation and technological simplicity would enable a favourable individual solution. This has a further effect on CAPEX and OPEX of the system as well.
- **There are initiatives in almost all Danube countries to decentralize the waste water treatment at an acceptable technical level. As the water prices rise the amount of waste water is declining, therefore the smaller, flexible, local cleaning solutions might turn out to be more reasonable both in economic and in environmental terms.**

Project can help

- to generate a solution for the above mentioned problems
- to adjust these investments into EU development period up to 2020

MILESTONES OF THE LARGE PROJECT

- 1. phase: improve the ongoing survey carried out by PA4
- 2. phase: promote best practices
 - build a demonstration centre
 - create a knowledge centre
 - produce educational, training tools for professionals and non-professionals
 - arrange a road-shows
- 3. phase: develop pilot projects in Danubian countries.

Total value: 24,5 M EUR

PROJECT ACTIVITIES

- **Activity 1. - Survey continuation**

- in line with the agreed milestones of the Roadmap and towards outlining steps to fulfill objectives outlined in the Action Plan of the EUSDR a survey on the situation of alternative collection and treatment wastewater in small rural settlements has been carried out first by PA4 and then by international legal expert group to assess the situation and promote best practices in WWT for small settlements. A questionnaire have been circulated related to the legislative background of waste water treatment, the waste water treatment solutions in small rural settlements as well as on the supervision and control of waste water treatment activities. Further assessment analyzing the situation in the Danube basin must to be continued.

- **Activity 2. -Building a demonstration centre**

- create a knowledge centre
- produce educational, training tools for professionals and non-professionals
- arrange a road-show and

- **Activity 3. - Development of education material**

- develop a multi-level educational curriculum, based on international literature, experiences and continuously upgrade it with domestical results as well. The levels are: academic level, secondary shool level, expert training, post-graduation training, training of operators, course for designers. This would be combined with operational level with realization of building the demonstration and test plant.

PROJECT ACTIVITIES

- **Activity 4. - Organization of road show**
 - organization such of „road show”, which would involve the introduction of individual and mainly decentralized wastewater treatment solutions, detailing the possibilities and circumstances of their applicability, sharing the experiences regarding to the implementation, operation.
- **Activity 5. - Develop pilot projects**
 - in this phase we must find those partners who would like to make investments regarding to decentralized wastewater treatment solutions

DEMONSTRATION CENTER

- Dry exhibition area for small wastewater treatment plants



source: www.bdz-abwasser.de

DEMONSTRATION CENTER

- Building of new demonstration center – **PARTNER BDZ Leipzig**
 - Survey, designing works (licensing, building, as-built, start-up)
 - Authority permission
 - Mobilization
 - Construction works
 - Start-up, trials



source: www.bdz-abwasser.de

TRAINING

- Development, editing and issuing of curriculum, **PARTNER - EÖTVÖS JÓZSEF TECHNICAL COLLEGE BAJA**
 - Technical expert basic training on academic level
 - Technical expert post-graduation training
 - Secondary school training
 - General information for companies, investors designers, decision-makers
 - Advance training for dispatchers and operators

INTERNATIONAL PILOT PROJECTS

- Planning, designing, licencing, building, testing

Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Montenegro, Moldova, Romania, Serbia, Slovakia, Slovenia, Ukraine

TARGET GROUPS

- inhabitants
- local governments
- mayors
- professional organizations,
- experts,
- designers,
- educators (secondary and academic institutions)
- licensing authorities and contributors,
- organizations involved in the project and decision-makers,
- politicians.

EXPECTED RESULT OF PROJECT

- **Establishment an Organization in charge**
 - is able to put in coherence the planned activities.
 - is capable to integrate simultaneous education, counselling, technical development, qualification, project planning and project management tasks.
- **Starting individual projects for the poorer and smaller settlements.**
 - we possess the knowledge and experience regarding to the individual decentralized wastewater treatment
 - we have the demonstration tool on operational level for the system

Choosing the most advantageous system for wastewater treatment means a choosing a reasonable optimal capital-, operation-, maintenance-, and reinvestment cost.

 **Offers an effective solution for reducing or ceasing the risk of underground water pollution emissions.**

**THANK YOU
FOR YOUR KIND ATTENTION!**