

The project's goal is to bridge the gap between legislation, current practice and integrated approaches; to redirect nutrient load from surface waters in the Danube region into agriculture and to improve water quality, which is in line with the objectives of the EU Strategy for the Danube Region (EUSDR).



Picture: Constructed wetland for treatment of wastewater from a single household. (Photo: Iztok Ameršek)

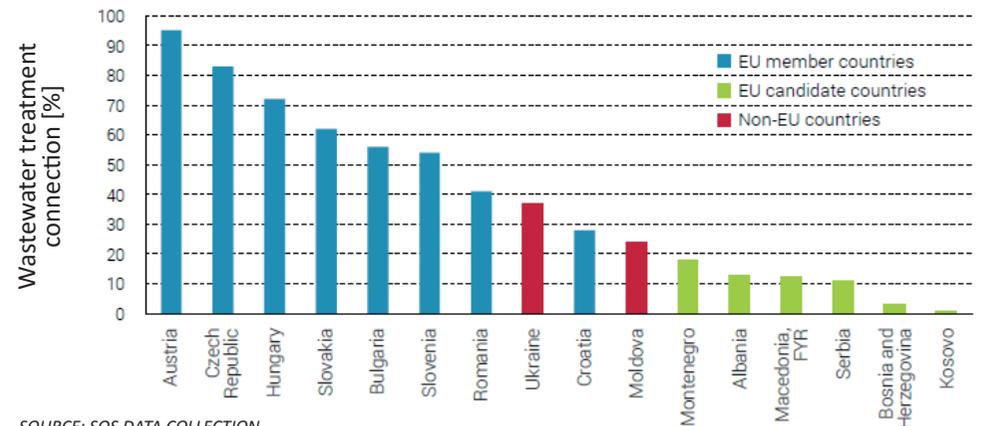


Changing the water paradigm in rural areas in the Danube region to promote circular economy.

65 % of the total population in the Danube region is not connected to wastewater treatment plants.

The quality and efficiency of wastewater services varies widely within the region, and is mostly below international good practices (World Bank, 2015).

WASTEWATER TREATMENT COVERAGE IN THE REGION, 2012



SOURCE: SOS DATA COLLECTION.

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There are plans to equip numerous small villages and towns with wastewater treatment plants in the future. The selection of treatment technologies to be applied in small settlements is very important due to its major effect on water quality and nutrient management. This is of special importance in rural areas where wastewater management can be integrated with water and nutrients needs in agriculture thus enabling sustainable solutions for both.

### Main challenges

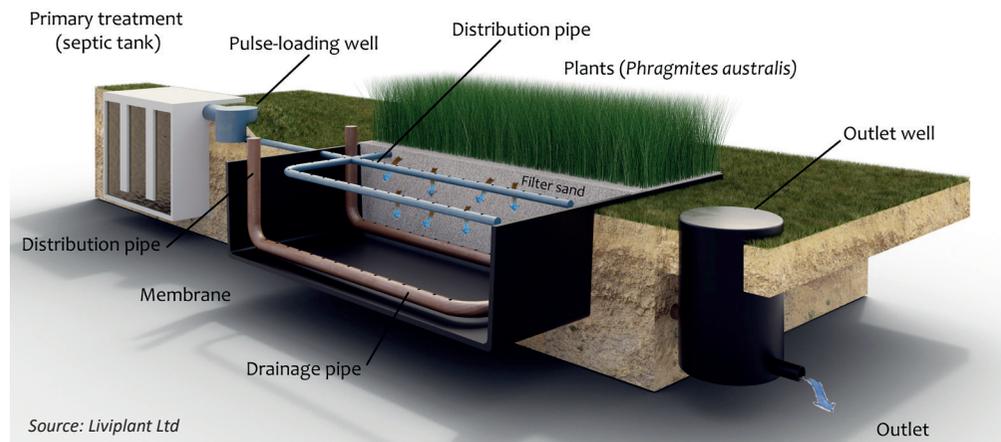
- Low awareness on the importance of wastewater treatment and its direct connection with drinking water quality and other dimensions of water security;
- Lack of sufficient knowledge on sanitation planning, sustainable sanitation and technologies for wastewater treatment and reuse;
- Deficits in legislation, negative previous experiences and unawareness of authorities and communities.



**There is a need to change the water paradigm by an innovative wastewater management in the rural areas to promote circular economy.**

*The geographical, demographical and economic conditions for application of natural treatment systems and closed the loop systems in the Danube region are highly suitable.*

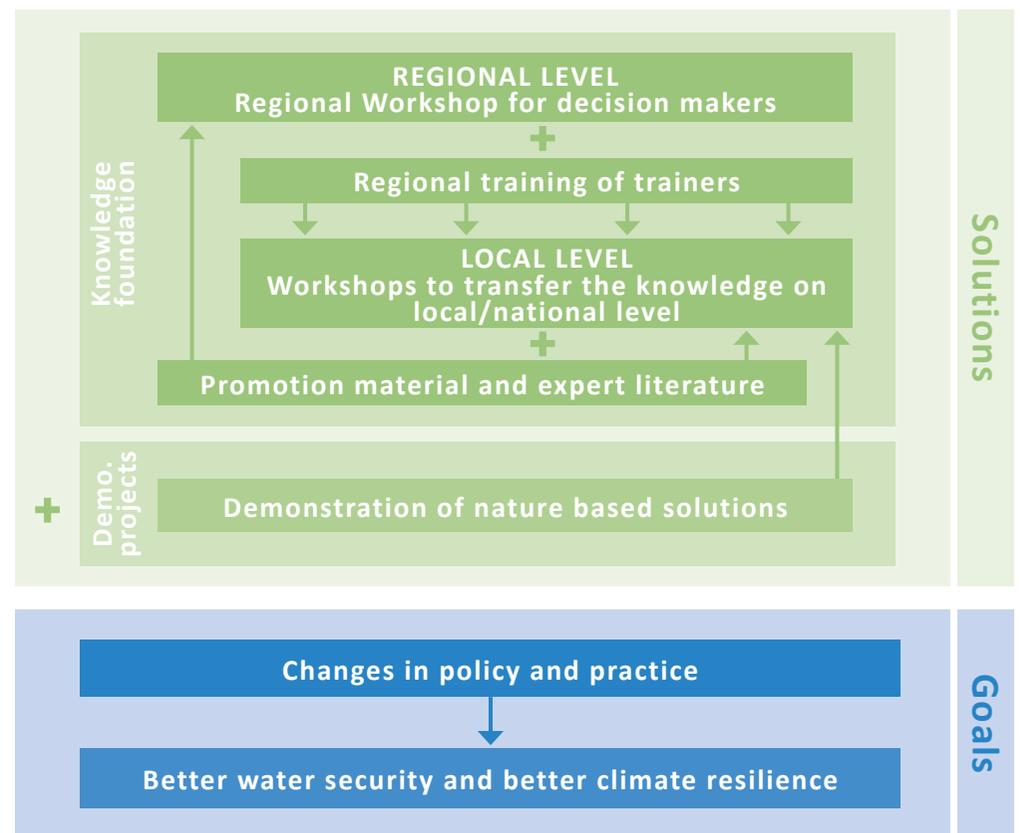
A SCHEME OF A CONSTRUCTED WETLAND FOR TREATMENT OF DOMESTIC WASTEWATER



Some countries already have good long-term experience with systems such as treatment wetlands, while others have bad, limited or no experience in TW and present target groups for transfer of knowledge and good practices.

### Solutions

- Construction of sustainable wastewater treatment systems, which can enable water and nutrient reuse, energy recovery and saving water resources on a local level. Sustainable wastewater treatment systems thus allow closing material flows and have positive effects on the water cycle.
- Establishment of enabling environment for innovative decentralized infrastructure systems based on environmentally sound technologies that have considerable advantages compared to conventional centralized systems.
- Transfer the knowledge of natural treatment and wastewater reuse systems from the expert level to legislation and practice.
- Establish new national and international networks and exchange of knowledge and good practices regarding circular economy in small scale waste water treatment and closed solutions between the countries through international high level meetings, training of trainers, national workshops, pilot plants, excursions and media reports.



Picture: Concept of the project towards Sustainable sanitation in small settlements of the Danube region