

Towards sustainable sanitation solutions in small settlements in Central and Eastern Europe

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Introduction

In Central and Eastern Europe (CEE), nearly 30% of the overall population of 42 million people live in settlements with less than 2000 inhabitants. Only 9% of these settlements are connected to wastewater treatment plants (GWP, 2007). In the last ten years, the Global Water Partnership Central and Eastern Europe (GWP CEE) and its Sustainable Sanitation Task Force undertook a series of studies to assess the treatment of municipal wastewater and to introduce nature-based treatment systems such as treatment wetlands in small settlements (GWP, 2007; Bodík et al., 2012).



Figure 1: Treatment wetland for industrial wastewater in Središče ob Dravi, Slovenia (Photo: Iztok Ameršek)

Materials and methods

In 2012, a questionnaire was developed and sent to sustainable sanitation experts working in the GWP CEE target countries of Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Slovakia, Slovenia and Ukraine. Topics included geography and population, wastewater management in settlements with less than 2000 inhabitants, types of wastewater treatment plants, policy and legal aspects of wastewater treatment in small settlements, and obstacles and barriers to the implementation of nature-based treatment systems. Answers were received from 9 of the 12 countries and evaluated and published in a brochure (Bodík et al., 2012).

Results

The study found that the application of nature-based treatment systems in Central and Eastern Europe is highly suitable. One key reason is because CEE populations are more distributed among rural and dispersed areas, in villages and towns of less than 2000 inhabitants, than in Western Europe. Furthermore, EU legislation provides EU co-funding for wastewater collection and treatment only for settlements above 2000 inhabitants, so smaller CEE settlements cannot afford such costs on their own. Alternatively, they can turn to nature-based systems which have lower construction, operational and maintenance costs.

The long-term experience with nature-based systems among countries ranges from high (e.g. Czech Republic, Slovenia) to poor, limited or non-existent (e.g. Slovakia, Romania and Bulgaria). However, the regional expertise and knowledge of nature-based treatment systems that does exist can be used for expanding their implementation, especially in areas where local authorities and communities have low awareness. Challenges also arise from limitations related to location (e.g. steep mountains or expensive and densely populated areas are not suitable), and institutional and market barriers.

In order to stimulate an expansion of sustainable sanitation, such as nature-based treatment systems, in the region, a project proposal was developed by GWP CEE in cooperation with experts from different CEE countries. The project can provide opportunities to establish new national and international networks that increase the exchange of knowledge and good practices regarding nature-based solutions. Proposed outputs include high-level international meetings, national workshops, the training of trainers, pilot treatment plants, excursions and media reports.



Figure 2: Treatment wetland for municipal wastewater in Sveti Tomaž, Slovenia (Photo: Iztok Ameršek)

Proposed solutions

Many small settlements in rural areas in Central and Eastern Europe are looking to solve their wastewater collection and treatment challenges. To encourage sustainable development, it is important to select wastewater management solutions which are nature-based. Sustainable sanitation is currently not widely applied in CEE – therefore, raising awareness and promoting sustainable sanitation in the region is of key importance.

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Figure 3: Treatment wetland for an individual house in Slovenia (Photo: Iztok Ameršek)

References

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	# of small wastewater treatment plants (settlements of < 2000 people)	# of treatment wetlands	% of treatment wetlands	Guidelines/standards	Literature in national language
Bulgaria	57	5	9	No	No
Czech Republic	1550	690	45	Yes	Yes
Estonia	826	14	2	Yes	Yes
Hungary	270	10	4	Yes	Yes
Latvia	1020	10	1	No	Yes
Romania	82	0	0	No	Yes
Slovakia	382	5	1	Yes	No
Slovenia	190	80	42	No	Yes
Ukraine	n.a.	65	/	No	Yes
Average/total	4377	897	20%		

