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How to Reach Sustainable and Cost-effective Wastewater Management in Rural Areas of Bulgaria and Romania (for agglomerations with less than 2,000 and 10,000 PE)?

Discussion Paper for the High Level Round Table
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Wastewater pollution causes health and environmental problems

Proper sanitation and wastewater treatment are key challenges for a healthy environment in urban and rural settings. Unregulated run-off of raw wastewater poses a threat to public health and the environment. Children and vulnerable groups are particularly hit by cases of water borne diseases but also adults suffer consequently, which can significantly affect the economic development of a region. The environmental damage due to untreated wastewater is relevant as well. Groundwater as a major resource for drinking water is under increasing pressure from human activities.

Urban Wastewater Treatment directive addresses only agglomerations with more than 2,000 PE

The legislation at EU level addresses the topic of sanitation and wastewater treatment through two directives, the Urban Waste Water Treatment (UWWTD) and the Water Framework Directive (WFD). The UWWTD obliges the new member states to collect wastewater and install treatment plants in agglomerations with more than 2,000 people equivalent (PE). According to the UWWTD, agglomerations with 2,000-10,000 PE must set up appropriate treatment (biological treatment without nutrient removal), as well as the agglomerations with less than 2,000 PE which already have a sewerage network (Article 7 of the UWWTD). For agglomerations with less than 2,000 PE not having any sewerage network, there are no standards to meet.

Guide for Extensive Wastewater Treatment Processes needs an update and translation into Romanian and Bulgarian

For these smaller agglomerations, a guide has been published by the European Commission in 2001, which illustrates examples of extensive and cost-effective wastewater treatment processes for smaller communities.

Water Framework Directive requires proper wastewater treatment in order to protect water bodies

The WFD requires the achievement of good groundwater status and provides for the monitoring of groundwater bodies as well as for measures to protect and restore groundwater. WFD demands that measures to prevent and control groundwater pollution should be adopted, including criteria for assessing good chemical status. The maximal acceptable value for nitrate is 50 mg/l, which is exceeded in many groundwater bodies. Besides the agricultural practices, the lack of adequate wastewater treatment can be identified as one of the causes of excessive nitrate concentrations in groundwater.

3.9 Mio people in Bulgaria and Romania live in villages with less than 2,000 inhabitants and are not covered by the UWWTD

In Bulgaria and Romania, almost 4 Mio people (2.1 Mio in Romania and 1.8 Mio in Bulgaria) live in settlements with less than 2,000 inhabitants which usually do not have any wastewater collection or treatment and are not obliged to provide this in the near future. As they are not covered by the UWWTD, the agglomerations with less than 2,000 inhabitants are not eligible for getting financial support by the EU for setting up an adequate sanitation and wastewater system. Many of these settlements rely on local drinking water sources which are often polluted by human activities and insufficiently protected. The national priority is to build wastewater collection and treatment for the settlements with more than 2,000 PE as required by UWWTD in the coming years.

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Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit

Umwelt Bundes Amt
Für Mensch und Umwelt

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Conventional centralised and technical wastewater treatment systems are hardly affordable in small communities

Cost effective solutions which meet the EU requirements and protect public health and the environment are needed. The smaller the settlements, the more expensive centralised technical systems are per capita. Centralised sewerage and technical wastewater treatment become hardly affordable for small communities. The Western member states, e.g. some parts of Germany, suffer from high prices due to conventional technical planning not adapted to specific conditions. There is mostly a lack of financial, technical and natural resources in rural areas.

Communities below 10,000 and 2,000 PE need sustainable and cost effective tailor-made wastewater solutions

Bulgaria and Romania are two of the many countries already affected by climate change. Increased drought periods and higher temperatures are observed hence groundwater levels are decreasing. For successful adaptation to climate change, implementation of sustainable concepts and approaches for water saving and closing of the local water cycles are needed.

Institutional setting can be regionalised for higher efficiency

A regionalisation process in the institutional arrangement of the Romanian water and wastewater sector is in progress which is important for small communities to reach technical and financial capacity and economy of scale. Nevertheless, concerning technical solutions there is no need to regionalise/centralise wastewater collection and treatment as decentralised technical systems are usually more flexible, sustainable and more cost-effective. The implementation of extensive, decentralised and low-tech solutions, such as onsite systems, ponds and constructed wetlands adapted to the local conditions, are therefore recommendable.

School sanitation as a specific challenge in rural and peri-urban areas

Without reliable water supply and wastewater treatment, sustainable sanitation for schools is a particular challenge in the rural areas. Although there is a consensus that proper hygiene and sanitation play a key role for health, safety and wellbeing of children, school sanitation is a neglected issue in national budgets and public awareness as well as on the political agenda.

Guidelines neither on decentralised wastewater treatment systems nor on reuse of treated products are available

WECF and local partners carried out several demonstration projects for safe water and sanitation in rural areas of Romania and Bulgaria. Urine diverting dry toilets for public places such as schools, rural community centres and town hall, as well as for households have been constructed and successfully operated. Constructed wetlands and soil filters for the treatment of domestic wastewater were built. These technologies are well accepted and understood by the local citizens. Barriers in implementation of the on-site technologies include difficulties to get the required permit, as currently no guidelines or regulations exist on decentralised wastewater treatment systems and on reuse of treated products.

The following questions shall be of guidance for the Round Table:

1. Which sustainable and cost effective wastewater treatment concepts are appropriate and affordable for settlements with less than 10,000 PE and less than 2,000 PE?
2. What can be done to promote appropriate and affordable technologies in Bulgaria and Romania?
3. What funding instruments are available for agglomerations with less than 10,000 and 2,000 PE, respectively?
4. How can permit procedures for suitable sanitation and wastewater solutions be improved?
5. How can awareness for sustainable school sanitation be raised and the topic be put higher on the political agenda?

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