

NEREUS

Tackling the challenges linked to wastewater reuse to establish new treatment criteria



Inspiration

Globally, wastewater reuse is currently considered as the most critical element of sustainable water management. The growing problem of water scarcity leads the push towards maximum utilisation of non-conventional water. Although reuse is accompanied by a number of benefits, several potential drawbacks still challenge scientists. The current treatments applied to wastewater fail to completely remove microcontaminants, antibiotic-resistant bacteria and/or their genes (ARB&Gs). Knowledge on the actual effects of reuse with regard to these aspects is currently unconsolidated.

Innovation

Action ES1403 of the intergovernmental European research framework COST, NEREUS will answer critical questions through a multidisciplinary European network, structured as interactive working groups, to achieve the following objectives:

- identification of the microbiome and mobile antibiotic resistome in treated wastewater
- assessment of the potential for uptake/transmission of microcontaminants and ARB&Gs in crops
- determination of effect-based bioassays required for wastewater reuse
- identification of efficient/economically viable technologies able to meet the current challenges
- development of a relevant risk assessment and policy framework

Impact

NEREUS will establish criteria on technologies and assessment methods for wastewater treatment, and suggest new effluent quality criteria to overcome current barriers and safeguard the reuse practice. It will have a major impact on the enhancement of sustainable wastewater reuse in light of current challenges at technological, economic and societal level.

Partners

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