

Sustainable and Circular Management of Wastewater in Eastern Mediterranean Region under the Current Climate Change

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Abstract

The Mediterranean region is one of the areas in the world most vulnerable to climate change as well as one of the most impacted by human water demand. In addition, water stress is a major concern, where a large part of the world's "water poor" population lives in the region where increasing urban population has serious implications for water demand.

The increase in water use will also lead to an increase in wastewater and water pollution. Climate change is further exacerbating pre-existing water stresses and is already having a measurable effect on the water cycle in the Mediterranean, changing the quantity, distribution, timing and quality of water available. In this context, the transition and actions towards the circular economy could be a positive way for nature to promote a sustainable future of water. Indeed, unconventional water reuse, NCWR, offer great potential as a means of tackling water scarcity.

Through a demonstration on the link between water resources and climate change we will expose in this presentation three parts:

The need now for a "circular revolution" in water resources

The economy approach of reusing treated wastewater: the potential benefits

How wastewater's circular economy can help fight climate change

The central part of this presentation will focus on the contribution of the European project in the sustainable reuse of wastewater in the Mediterranean region and the innovative technologies that offer an additional resource, unconventional water resources, NCWR and the role on the one hand, in the fight against global climate change and on the other hand its use in the agricultural sector

The last part concerns the benefits of agroecology and its effective role in the fight against global warming. Indeed, the capacity to accelerate the restoration of carbon and nutrients in degraded soils, makes it possible to increase soil fertility and improve productivity. In addition, agroforestry-based ecosystems are the main benefits achieved on a large scale from the way trees on the farm interact with soil and water, carbon storage and biodiversity. This will directly contribute to the mitigation of climate variability and the protection of soil and water resources.

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