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# AdSWiM - Managed use of treated urban wastewater for the quality of the Adriatic Sea

AdSWiM connects research institutions, municipalities and managers of wastewater (WW) treatment plants to maintain and improve the quality of marine water (Water Framework Directive 2000/60/EC).



The quality level of the Adriatic sea is proved to be very heterogeneous ("Strategic Environmental reports" 12/15/2015 DC(2015)9285, Managing Authority Regione Veneto). It is reported that in some areas a non-equilibrium is measured among nutrients (phosphorous compared to the availability of nitrogen); furthermore, the remineralisation of organic matter, which could fill up any nutrient deficiency, is highly dependent on the vitality and on the composition of the microbial community. Therefore, risk can occur that a condition "the abundance of species and the protection of their full reproductive capacity (Marine Strategy/2008/56/EC) "is not guaranteed overtime". A changed distribution of species in the marine biological communities reverberates on the loss of integrity of the ecosystems and on a risk towards environment vitality and resilience to the diffusion of undesired species.

The AdSWiM project is built around the Urban WW and depuration plants (DP) and it aims of assessing whether the treated UWW from DP, in EU limits of composition, can be used as controlled points of nutrients supply, in particular phosphorus, with eliminated risks for both the hygienic quality of the bathing water (BW) and (secondly) the ecosystem stability. This goal is obtained through several well defined activities either at DP level or in marine environment. The initial survey of the health state of the Adriatic Sea is organized to transfer and balance the knowledge cross-border among PP(WP3). Data are analysed with respect to the actual distribution of nutrients, bacteria and pollutants analysed with traditional analytical approaches (WP4) and with the support of mapping and modelling strategies/tools (WP3). The project investigates new treatments, new analytical devices and new chemical and microbiological parameters to maintain and improve the environmental quality conditions of sea and costal area and of the BW quality (WP4) through the control of the WW. The robustness of the new tools/descriptors implemented is assessed thanks to DP, partners, and to a sludge treatment plant. This allows, also through pilot plant, mitigation action and feasibility studies, the economical evaluation of the actions implemented on the entire depuration chain (water line, sludge line, recipient water body).

The impact and transferability of project results, also to stakeholders outside the Programme area, are obtained through the preparation of cross-border agreed guidelines to manage WW and DP and drawing up legislative proposal for an appropriate review of the effects on the environment of the legislation itself, in relation to the territorial specificities, to preserve the habitat/status ecological status and to contribute to maintain high the quality level of bathing water (WP5).

2014 – 2020 Interreg V-A Italy – Croatia CBC Programme Call for proposal 2017 Standard – AdSWiM Priority Axis: Environment and cultural heritage

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2014 – 2020 Interreg V-A Italy – Croatia CBC Programme Call for proposal 2017 Standard – AdSWiM Priority  
Axis:Environment and cultural heritage

**Institute links**

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