

PROJECT DATA SHEET - CASE STUDY (SUMMARY)

<i>Title:</i>	Agricultural Re-use & Reclamation of Treated Effluents: The experience of the Thessaloniki Wastewater Treatment Plant (Thessaloniki, Greece)
<i>Duration of the project :</i>	2007 to 2012

<i>Project context:</i>	Reclamation of treated effluent from Thessaloniki Wastewater Treatment plant (ThWWTP) which is situated in the suburbs of Thessaloniki and belongs to EYATH. The treated effluent water was reused or agricultural irrigation purposes
<i>Project objectives:</i>	<p>EYATH's main objective, for using wastewater effluents for irrigation ,has been to provide a cost-effective, sustainable water resource in a tight footprint while reducing discharges to the aquatic environment. Furthermore:</p> <ul style="list-style-type: none"> • To be ready to deal with water shortage and Climate Change sequences that require the use of alternative water resources. • To contribute to the reuse of nutrients in the environment. • To use reclaim processes in all EYATH's W/w treatment plants, if possible. • To move towards implementation of the requirements of the River Basin Management Plan(RBMP) for the area
<i>Description :</i>	<p>Thessaloniki is a city of a million inhabitants, situated in northern Greece. The northwest area of the city is surrounded by cultivated fields. Even though the area has been irrigated for decades by the Axios River, extra water has been occasionally needed during prolonged hot summers or periods of drought. This extra water could be supplied from the treated effluents of the Thessaloniki Wastewater Treatment plant (ThWWTP) which is situated in this area.</p> <p>The main reclamation use of treated effluents had been restricted irrigation for agriculture during the summer period of the years mentioned.</p> <p>The project was applied every summer in the agricultural area of Chalastra –Kalochori from 2007 to 2012. Thus, for specific short term periods and on a daily basis, around 180.000m³ of treated effluent were for irrigation at no cost for the end-users.</p> <p>Rice, corn, and cotton were the main crops of the area where the project has been applied.</p> <p>Precaution measures have been taken during the reuse process that aimed at protecting the health of the field workers and the public. For this reason, guidelines were given to the farmers as well as information to the public about the reuse process.</p> <p>The project has been carried out with the co-operation and approval of the local farmers Union.</p> <p>Soil analysis, microbiological analysis of plant tissue and agronomic parameters were measured. From these results it was concluded that the total reuse of W.W.T.P. effluent seems possible under the right conditions.</p>
<i>Lessons learned</i>	<ul style="list-style-type: none"> • Using reclaimed water for agricultural purposes can foster existing water resources capacity to cater for other urban water needs. This can result in saving costs of developing new water sources, water



	<p>transfer, treatment and distribution systems. Environmentally, it can also contribute to the recycling of nutrients on land with a parallel improvement in the recipients' water quality.</p> <ul style="list-style-type: none"> • Concerning the social issues relevant to our project, we found that end users' perception was of key importance in the acceptance of it. The credibility of the personnel involved was also very important to the success of the project. • Information programs for the public and the farmers are necessary. Moreover, co-operation with agricultural groups have to be established and the feed- back of their views has to be taken into account. • Special care has to be given to ensure that the reuse programs are well managed, with the utmost attention being paid to protecting public health. This can be supported by well trained operators. • Moreover, the fact that the industrial area of Thessaloniki lies very close to the ThWWTP , could lead us to promote the idea of replacing the groundwater supplies of different industrial units with treated effluents of good quality. • The dissemination of the project findings to other stakeholders , colleagues of other water utilities and to the public is beneficial for the future reuse actions. • There is a great need to deal with legislation issues and how these can pose potential hinders at the feasibility of water reuse issues. • The developments in priority substances' regulative issues (pharmaceuticals, micro pollutants etc) have to be followed closely. In addition, the need of a realistic risk assessment of the reuse (as well as a cost benefit analysis) is of high importance. • The need of new technologies and infrastructure to better monitor saline water intrusion at the network of EYATH SA is essential. • At present, we need to adapt the application of this project to the new terms & limits set by the new Greek Legislation on reuse and reclamation.
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<i>Lead organisation(s)</i>	Thessaloniki Water Supply & Sewerage company (EYATH SA)
<i>Potential partner organisation(s):</i>	<ul style="list-style-type: none"> • Local Farmers' Union, TOEV Chalastras - Kalochoiou. • Soil Science and Land Reclamation Institutes of the National Agricultural Research Foundation (NAGREF). • Water Directorate of Central Makedonia
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