



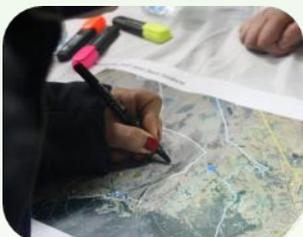
Sixth e-Newsletter
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Towards Sustainable Treatment and Reuse of Wastewater in the Mediterranean Region

AQUACYCLE's second series of stakeholder workshops ran with a dual objective: demonstrating that farmers and local community representatives can have a meaningful role in the drawing up of action plans for the reuse of treated domestic effluent and to collect local community insights and viewpoints towards treated wastewater reuse.

In this sixth e-Newsletter, **Dirk De Ketelaere** and **Anna Spiteri**, from the environmental research company, Integrated Resources Management Company Ltd. (**IRMCo**), share the findings of workshops addressed to agricultural communities that were held in Lebanon, Spain and Tunisia. They also provide a preview of the activities and events that are lined up to take place during the final, fourth year of project implementation.

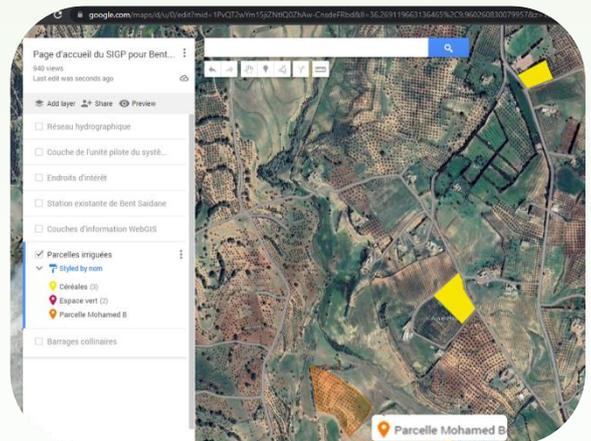
It is perfectly feasible for local communities to have their say in the drawing up of action plans for the reuse of treated wastewater!



Participatory GIS (PGIS) practice sessions invited the local community around the foreseen pilot locations of **AQUACYCLE**'s eco-innovative wastewater treatment system in Lebanon and in Tunisia to draw their own suggestions for reuse. Participants were given the option to either draw their suggestions on a printout of a satellite image or online.

As anticipated, neither farmers nor any of the local community representatives required any training to locate the fields they till or the properties they reside in.

As shown on this example of online entries on the right, a farmer in Tunisia, rather than specifying the nature of reuse wrote his name, i.e. denoting his ownership, of the tract of land where he wished to avail of the treated effluent for irrigation purposes. Also this is not an unexpected outcome, it can easily be attributed to people wishing to delineate their 'property' and hence their 'ownership of such property'.



An aggregate of 57 participants joined the PGIS Practice sessions in Lebanon and in Tunisia, well exceeding the originally foreseen target of 30 active PGIS users.

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The PGIS Practice session was clearly much appreciated in Lebanon too:

“Being able to share our suggestions and ideas means a lot to us, yet placing a user-friendly platform in our hands so we can also indicate our suggested areas for the reuse of treated domestic effluent, has taken us to another level, we really felt that our voice matters”.

Appraisal of PGIS Practice Session by local community in Deddeh and environs, North Lebanon

Viewpoints on reuse of treated effluent resemble traffic lights!

Red light to reuse in Lebanon, **orange** in Tunisia and **green** in the Province of Almería, Spain brings the concise outcome of the brainstorming session on the agenda of the respective workshops held in Lebanon, Tunisia, and Spain.



“The reuse of treated effluent for irrigation purposes is necessary and essential to maintain water sustainability in the future as well as of great agronomic, environmental, and economic value.”

Unanimous viewpoint of participants in Tabernas, Almería Province, Spain

The local community in the province of Almería clearly wish to emulate the high level of reuse in the neighbouring Region of Murcia. This viewpoint is underpinned by a high level of trust in the entities involved in the operation of water treatment facilities as well as those involved in monitoring the quality of the treated effluent.

“Our reluctance to reuse treated effluent is motivated by the fact that the practice carries a variety of public health risks. Moreover, we are concerned about the potentially harmful substances found in treated wastewater, the exposure of the farmworker to these substances, and the risks to soil properties and groundwater quality”.

Majority viewpoint of farmers in Bent Saidane, Tunisia

In addition to specifying the reasons for their reluctance, farmers in Bent Saidane also point to society’s lack of trust in various levels of government and in the private companies that are involved with the operational running, maintenance, and monitoring of wastewater treatment facilities as a major obstacle to their considering the reuse of treated effluent. On the other hand, farmers did prove keen to share their expectations of AQUACYCLE’s wastewater treatment system. This reinforces the notion that farmers acknowledge that the ever-increasing water scarcity in the region is a major threat to sustain their agricultural livelihoods, and thus the urgent need for non-conventional sources of water.

“When people hear about the topic of sewage water, it draws fear, especially the idea of reusing it”.

Unanimous viewpoint of participants in Tripoli, North Lebanon

At the time of the workshop being organized in Lebanon, high level officials, including ministers, said that the outbreak of diseases, including cholera, in the country was to be blamed on farmers for irrigating their crops with untreated effluent.

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To put into context, Tripoli's largest wastewater treatment plant only separates the liquid from the solid waste in sewage, with the solid part going to landfill and the liquid part being discharged into the sea while also finding its way into both surface and ground water bodies.

Right: brainstorming session in Tripoli, North Lebanon



Thus, with no meaningful wastewater treatment in place, the viewpoint that the idea of using treated sewage instills fear among people is hardly surprising. This viewpoint was echoed by representatives from other local universities in North Lebanon who had been invited to brainstorm a way forward. This resulted in an appeal for joint cooperation.

"Together we are stronger, hence our appeal for joint cooperation between universities, municipalities and NGOs for the benefit of everyone and especially the local community. If we work jointly on the common points of our EU funded research projects, that will bring happiness to all of us".

Outcome of Workshop in
Tripoli, North Lebanon

A look ahead at upcoming activities and events

During the final, fourth year of project implementation a succession of activities and events are foreseen.

To start with, these include a **training-of-trainers** event on the design, operation, and maintenance of AQUACYCLE's eco-innovative wastewater treatment system, which will make use of the dedicated e-training platform <https://etraining-aquacycle.eu/>. The training will be organized in Blanca, Spain, where a **Constructed Wetland** and a **Solar Raceway Pond for Photocatalytic Oxidization** were added to the existing **Anaerobic Digester**. The **APOC** pilot demonstration unit will have been in operation for over one year, demonstrating clearly its advantages as compared to conventional activated sludge treatment.

This training will then be replicated for local water managers and technicians in Lebanon, Spain, and Tunisia with a target of reaching **180 certified APOC users**. Their testimonies, together with the voices of farmers and of local communities in Lebanon, Spain, and Tunisia, will be collected in a **MedAPOC Charter**. This charter will be presented for endorsement by water managers, policy- and decision-makers in a **third series of stakeholder workshops**, which will run with the theme: '**Advocating good governance in the water and sanitation sector**'.

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