WASTEWATER REUSE: ALTERNATIVE RESOURCE FOR AGRICULTURE IN PROVENCE?

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Main idea: wastewater reuse (WWR) may prove locally to be a relevant answer to water scarcity, in remote areas far from conventional irrigation networks.

Two actions in a single project:
- Assessing opportunities of agricultural WWR within the regional territory
- Testing ‘on field’ efficiency of a rustic low technological scheme

Field test location: Verdon regional park
Moissac-Bellevue (83)
100 ha irrigable farmland, 4 farmers
Cereals, forage, vegetable crops

Low water availability
No river, no connection to regional hydraulic networks, no available relevant aquifer

4,000 people-equivalent wastewater treatment plant
500 cum/day discharge
1.5 km route through dry seasonal stream
Field test of a non technological low energy scheme

**METHODS**

- Monitoring:
  - Sanitary parameters from WWTP to farmland uses (2012 – 2015)
  - Continuous flow rate in the dry seasonal stream

- Setting up a temporary storage / lagooning basin, in order to:
  - Test irrigation technique
  - Assess disinfection effect
What practices and technologies to create effective, safe and economically viable water reuse chains?

RESULTS

- Regarding suspended solids, COD, E Coli and coliforms, ‘B’ water quality of the French regulation is maintained when water reaches the farmland.
  - Thus a wide panel of agricultural uses is possible.

- 8 days of storage / lagooning increases water quality and allows reaching ‘A’ water quality.
  - The panel of uses gets wider, and vegetable cropping is even an option.
What practices and technologies to create effective, safe and economically viable water reuse chains?

The case study applies World Health Organization multiple barrier approach, as a succession of:
- Classical activated sludge WWTP
- Course of effluent in a dry seasonal stream
- Storage / lagooning basin
- Irrigation technique

A relevant and rustic hydraulic scheme can be set up, avoiding intensive additional treatment.

Further testing is required, especially regarding viral and parasitic parameters.

40 sites in Provence hinterland may be suitable for this type of schemes.

CONCLUSION