

WASTEWATER REUSE : ALTERNATIVE RESOURCE FOR AGRICULTURE IN PROVENCE?



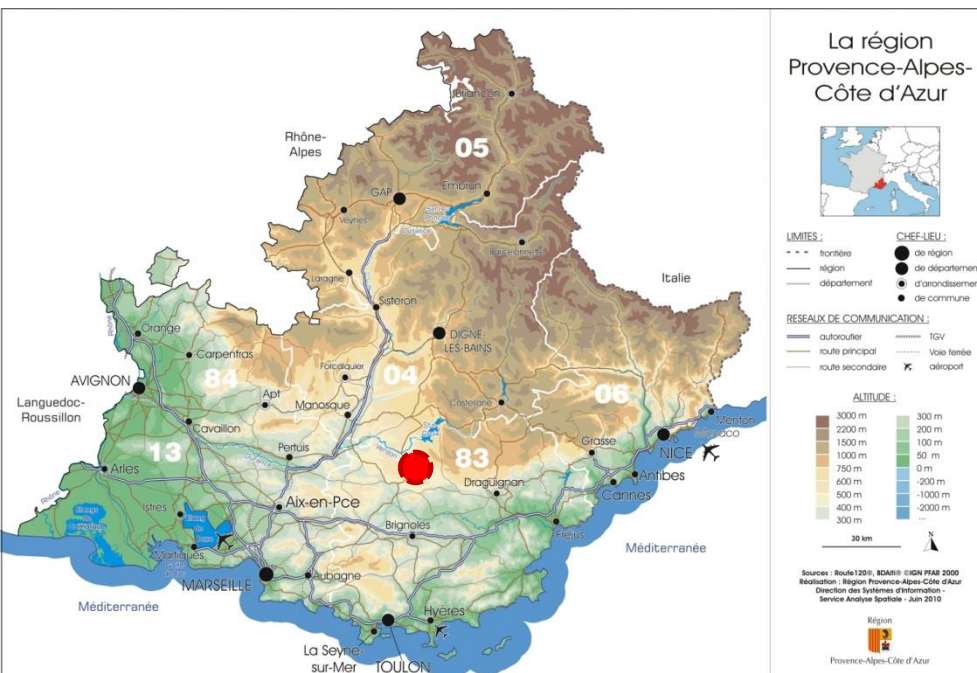
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Main idea : wastewater reuse (WWR) may prove locally to be a relevant answer to water scarcity, in remote areas far from conventional irrigation networks

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



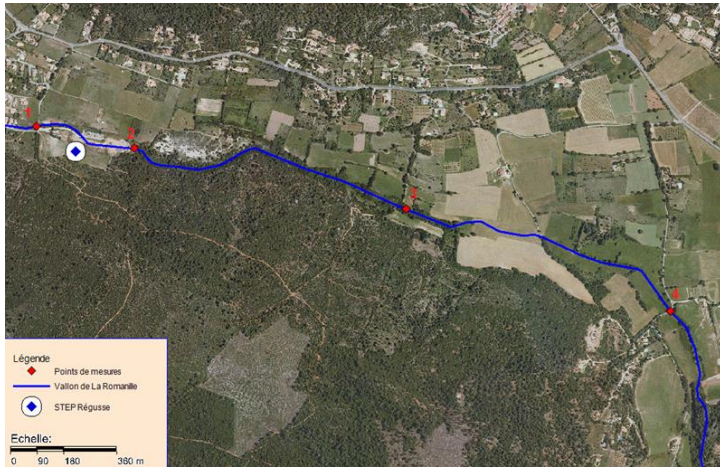
→ 4 000 people-equivalent wastewater treatment plant
500 cum/day discharge
1,5 km route through dry seasonal stream



ICID2015

26thERC & 66thIEC

Field test of a non technological low energy scheme



METHODS

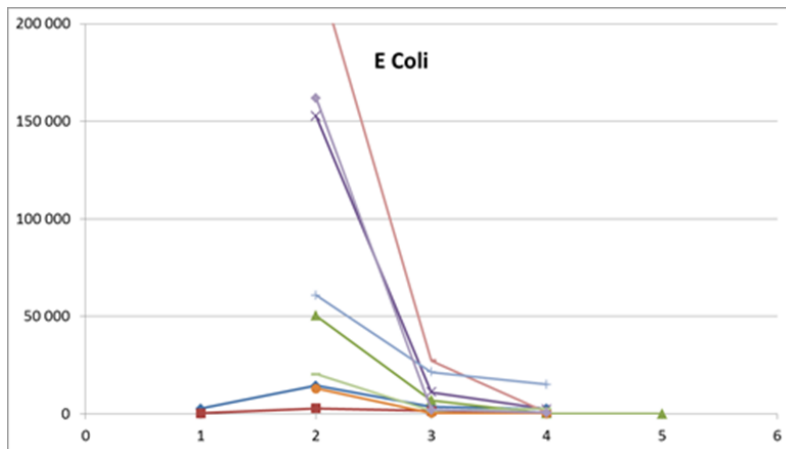
- Monitoring :
 - Sanitary parameters from WWTP to farmland uses (2012 – 2015)
 - Continuous flow rate in the dry seasonal stream



- 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



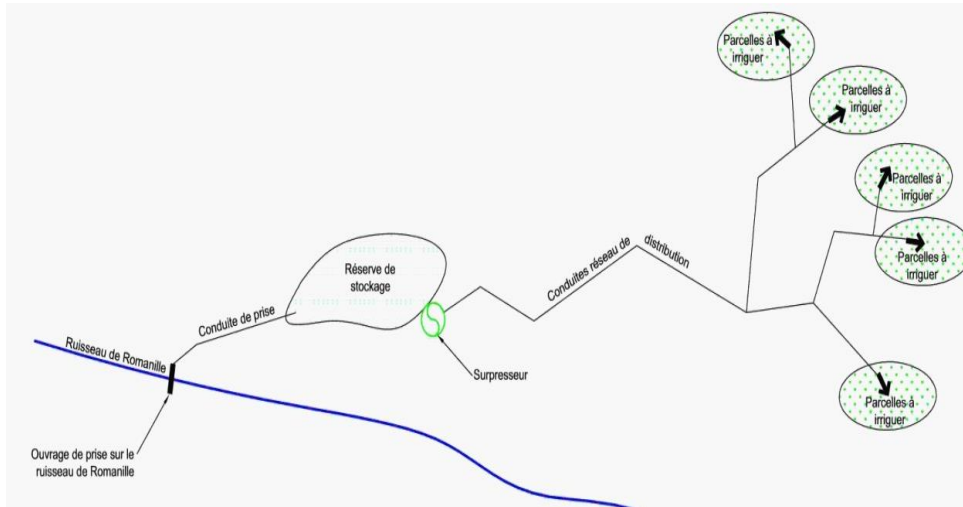
→ Regarding suspended solids, COD, E Coli and coliforms, 'B' water quality of the French regulation is maintained when water reaches the farmland

⇒ 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 ?



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

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

CONCLUSION

→ 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

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