

# SmartFertiReuse

A smart fertirrigation solution with treated urban wastewaters using a decision support tool

Chrystelle Ayache, Emmanuel Soyeux, Maelenn Poitrenaud



# SmartFertiReuse project

- **Why ?**

Promote REUSE to face hydric stress and anticipate future regulations

- **What ?**

Develop a new combined irrigation/fertilization strategy

- **How ?**

Select monitoring devices coupled with a central management system

- **When ?**

Projet d'une durée de 3 ans (saisons d'irrigation) - 2018 - 2019 - ~~2020~~ - 2021

- **Where ?**

Aureilhan (south of France)

- **Who ?**

Company, SMEs, academics, farmers, local councillors

Lorem ipsum dolor

# SmartFertiReuse project

## SmartiReuse experimentation

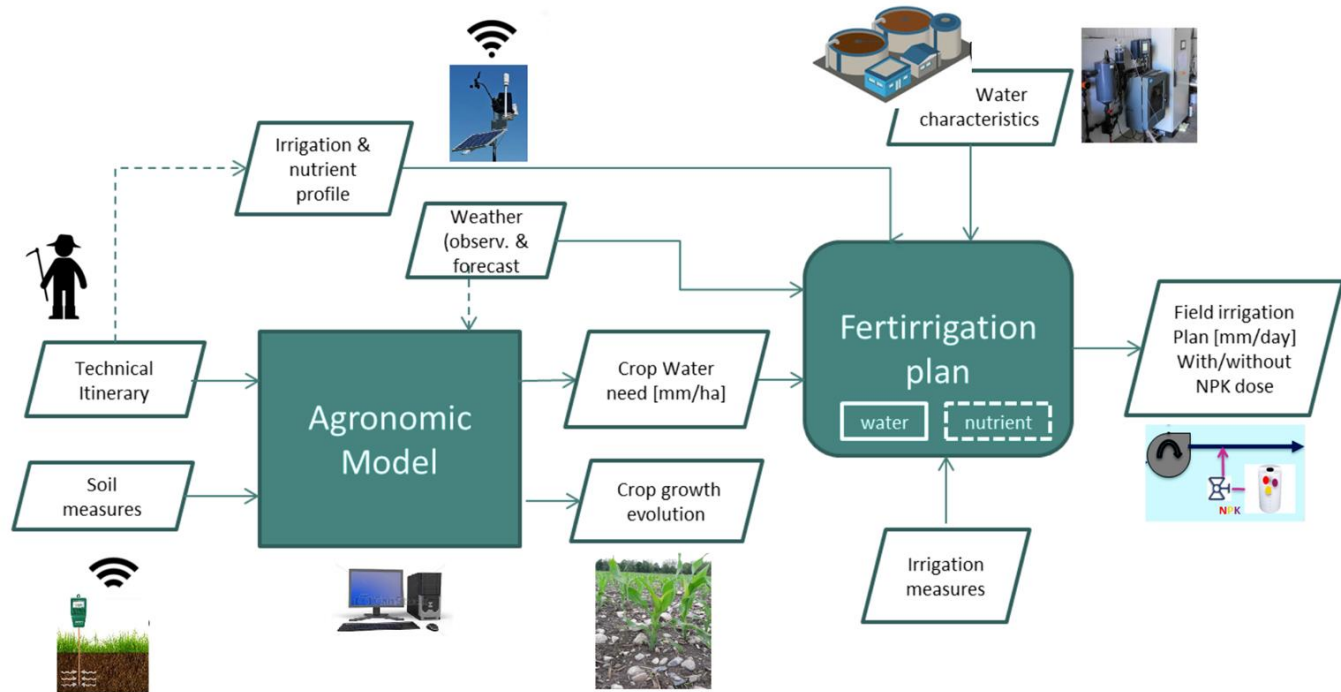
- 1 treatment unit at pilot-scale (50 m<sup>3</sup>/h)
- 3 experimental fields (2018 = 9 ha ; 2019, 2020, 2021 = 6 ha of which 3,5 ha with treated water reuse and 2,5 ha with fertigation in 2021)
- 2 reference fields (2018, 2019, 2020,2021 = 9,5 ha) : Control-A et Control-B irrigated with groundwater
- 2 irrigation wells (groundwater)
- 3 piezometers for groundwater quality sampling and monitoring



## Simple tertiary treatment process

- Mechanical filters (40, then 80 µm)
- UV disinfection
- Final chlorination 0,5 ppm at inlet of treated water tank

# Development of a digital tool





# Conclusion

- Positive impact of using reclaimed water instead of groundwater for this type of culture:
  - after 2 successive years of irrigation, no negative impact could be found on the quality of soil, crops groundwater
  - less water and chemical fertilizers used for similar yields

→ Relevance of tertiary treatment in relation to the management of health & environmental risk and beneficial water and nutrients

- The SmartFertiReuse Tool represents a useful decision support tool for farmers:
  - optimization of yields, reduction of costs and environmental impacts
  - an attractive solution for water stressed regions



Website: <https://www.smartfertireuse.fr/>

# Thanks to all the partners



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