

---

## Summary

### Economic evaluation of the water reutilization for the creation of artificial wetlands

**Author:** Héctor Varela Bernaus

**Tutors:** Joan García Serrano y Óscar Alfranca Burriel

This tesina centres on the investigation of the treatment of the residual waters, for it begins with a description of his origins and different types of origin depending on the use that the same ones could have had. As well as a brief description of the Board Mark of the current Water.

The initial studies are in two places at the same time in two reports, on the one hand the functioning of the Stations defines Filter systems of Residual Waters (EDAR's) and for other one Artificial Wettlands Systems (SHC). For the accomplishment of the study on the EDAR's, there is identified the type of treatments that remove to end in the same ones, giving I go on to the types of processes from those that there arranges Granollers's depuradora (Catalonia - Spain), as well as the evaluation of a cost of the polished water. Later the SHC are studied, determining the different existing types, methodologies of regeneration of the same ones and minimal parameters of quality for the different types of regenerated waters. It is distinguished for the wetland of Can Cabanyes (Granollers - Catalonia - Spain), for which details the constructive procedure of the same one, his progress during his phase of execution and the quality necessary for the certain use of the regenerated water (irrigation).

Centring the study of the tesina on the SHC of Can Cabanyes, initially what is looked it is to evaluate a series of costs of the same wetland (costs of investment, costs of development and maintenance, among others ...), in order to find a Minimal Price of Sale (PMV) of the regenerated water in case his end was the destined one for the sale, though his aim will be the irrigation of the parks and Granollers's gardens. Once obtained all the costs that act in the accomplishment of the project (SHC), one will proceed to the determination of  $0 GO =$ , this result will indicate that the project will have the awaited profitability and will be able to take up office with all the costs for his correct functioning (without generating any type of loss), in these calculations it is had in it counts also the possible amortization of the initial investment.

The following step to realizing is the determination of the benefits generated by the SHC, for it they have removed I end different technical - economic studies, after evaluating the possibilities of generation of benefits of the wetlands it has come near to the conclusion of which the best study to obtain the benefits of this wetland is the method of the cost of trip. Evaluated the cost of trip that supposes the visit to the SHC and after having analyzed his cost, is considered to all this as benefits generated by the humedal, for which will be necessary to go I end an exhaustive control of the visitors of the SHC, being able to obtain thus a revenue ( $\text{€}/\text{m}^3$ ) for every  $\text{m}^3$  of water regenerated by the wetland.

Finally one will proceed to realize an analysis of sensibility of the most representative parameters in the calculation of the PMV, obtaining a few results that they will indicate that measured the above mentioned parameters will influence the calculation of the PMV. After realizing these calculations, only it will be able only to compare the obtained results and obtain of this form the factor more limitant for the calculation of the PMV.