



Project
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EUROPEAN UNION



Mediterranean Cooperation in the Treatment and Valorisation of Olive Mill Wastewater (OMW)-MEDOLICO



I-B/2.1/090

Deliverable 6

Activity 8:

**Economic evaluation of the OMW treatment solution
proposed by MEDOLICO**



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Brief Summary

Activity 8 of the MEDOLICO project is devoted to the evaluation of the economic aspect of the various olive mill wastewater (OMW) treatment processes (i.e. existing and tested in the framework of the project) and the possible benefits and negatives externalities associated with their application. An economic evaluation of the proposed/tested technologies is applied in an effort to measure the applicability and viability of these systems.

Activity 8 includes in summary the following four tasks:

1. Presentation of the environmental problems associated with olive oil production and OMW discharge (*Section 1*)
2. The economic evaluation of existing OMW treatment systems (*Section 2*)
3. The economic evaluation of the OMW technological systems tested/developed in the project (*Section 3*)
4. The evaluation of the overall economic and environmental benefits of the systems developed within the MEDOLICO project (*Section 4*)

Section 1 provides the main environmental effects of OMW on (i) soil (physicochemical and biological soil properties), (ii) microorganisms, and (iii) plants; in order to highlight the importance of OMW appropriate treatment prior to its discharge in the environment.

Section 2 reviews and analyses the current economic state of the existing OMW management systems and provides an estimated calculation of the current OMW management cost per season for a specific sample of olive mills (OMs) per country. This sample of the OMs for each country has been selected under certain location criteria; the purpose was to identify an area that concentrates a high number of OMs, having in addition the right conditions to setup the logistics for a centralised treatment plant.

To that extent the research team of Nireas-IWRC, UCY, prepared the detailed questionnaire A (QA) in order to determine/measure the following: (i) the cost (both capital and operational) of the existing treatment methods that are currently being implemented for OMW management; (ii) the negative externalities and economic impact of existing OMW treatment



and disposal on a number of factors (i.e. odour, real-estate prices, public health in the areas surrounding the OMs, etc.); (iii) the willingness of the OMs owners and/or operators to pay (WTP) for an additional environmentally friendly technology to properly treat OMW. The QA was distributed by Nireas-IWRC, UCY to all the consortium partners, who in turn interviewed the selected sample of OMs in each country.

Section 3 focuses on the economic evaluation of the methods tested and assessed in the previous sets of activities (Activity 5 and 6), in order to further establish the overall economic viability of the proposed solutions in terms of capital and operational cost in comparison to what is currently being done. For this reason, a second questionnaire B (QB) was developed by Nireas-IWRC, UCY, and circulated among the project partners for completion. Further, each partner carried out a SWOT analysis using a template that was prepared by the Nireas-IWRC, UCY research team.

Section 4 is devoted to the estimation of the overall economic and environmental benefits that the proposed solutions can provide to the OMs. For this purpose, a case study was considered in order to examine the financial viability of the various technologies. Finally, the potential economic value of the purified polyphenols fractions is presented.