

Verification and Validation of Adequacy and Efficiency of WWTP Projects

Lebanon, Morocco and Tunisia

Morocco – Executive Summary

MeHSIP-PPIF
and
Sustainable Water Integrated Management (SWIM) –
Support Mechanism



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**Sustainable Water Integrated Management –
Support Mechanism (SWIM- SM)**

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Implementing Team

The MeHSIP-PPIF project has been undertaken by a consortium led by Atkins, comprising LDK Consultants and Pescares.

SWIM-SM is being implemented by a Consortium led by LDK Consultants, consisting of CWUA, RAED, DHV, GWP-MED, the Austrian Agency for the Environment, the Ministry of Agriculture of Tunisia, the Ministry of Energy and Water of Lebanon and the Ministry for the Environment, Energy and Climate Change of Greece.

Disclaimer

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The authors assume full responsibility for the contents of this report. Opinions expressed herein do not necessarily reflect the view of the European Commission or of the European Investment Fund.



Executive Summary

The H2020 (Horizon 2020) initiative aims at reducing pollution sources of terrestrial origin in the area of the Mediterranean. The MeHSIP-PPIF program supports the "Investments" component of the H2020 Initiative, having made it possible to identify 94 investment projects in several countries, of a value of 7.07 billion Euro.

Featured in this report are the conclusions drawn from a mission carried out in Morocco, at the Al Hoceima Wastewater Treatment station located in the homonymous town, ascribing the H2020 investments program. The purpose of that mission had been to determine the depollution impact of the investment, its overall efficiency and the lessons to be drawn.

Within the framework of the H2020 projects, a visit was organized towards determining the operational aspect of the two [2] wastewater treatment plants (WWTP), namely one in the town of Al Hoceima, in Morocco and one in the city of Tunis, in Tunisia. This report reflects the performance of the Moroccan WWTP, in Al Hoceima.

The design and further execution of the WWTP have been based on the principle of the biological process of treatment through low-rate activated sludge (LRAS). Originally commissioned in 1996, this plant was endowed with a second unit, on the occasion of a rehabilitation project launched in 2011.

At present, the Al Hoceima WWTP already seems to be operating in over-capacity, despite a life expectancy at design, of 15 years (from 2010 through to 2025). In 2013 (January – August) the average pollutant load had been of 4.431 kg / BOD₅ / day against a design capacity of 3.800 kg/d.

Through meetings we had on the site we discovered that a population of some 36 000 inhabitants in the suburban quarters recently connected to the liquid sewerage system of the town of Al Hoceima had not been taken into account as of the preparation of the project study.

Despite a pollutant load above the capacity limits originally established, the WWTP effluent remains within standards. The depollution impact of the project goes as follows:

- A reduction of the BOD₅ load by 4.4 tons per day
- A reduction of the SS load by 4.5 tons per day
- A reduction of COD load by 9.3 tons per day

The destination of dehydrated sludge of the WWTP at Al Hoceima remains, for the moment, uncertain.

Compared to other, more recently built facilities, the economic efficiency of the WWTP seems rather limited. This is probably due to the plant's small dimensions (lack of scale economies) and possibly also to the great distance between Al Hoceima and the major industrial centers, which has an upward impact on transport costs.