



10th
INTERNATIONAL WORKSHOP
ADVANCES IN CLEANER PRODUCTION

“TEN YEARS WORKING TOGETHER FOR A SUSTAINABLE FUTURE”

Decisions towards a More Sustainable and Efficient Water Sector

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This conference was based on the work **“The Sustainability of the Italian Water Sector: An Empirical Analysis by DEA”** (Almeida C.M.V.B.^a, Gastaldi M.^b, Giannetti B.F.^a, Lombardi G.V.^c, Miliacca M.^b – a. Universidade Paulista, Brazil; b. University of L’Aquila, Italy; c. University of Florence, Italy).

Work’s Abstract: “Climate change and the hydrological variability are natural driving forces that, when combined with the pressures from economic growth and major population change, make the sustainable development of our water resources a challenge. The combination of these factors commonly results in increased water use, competition and pollution in addition to highly inefficient water supply practices. These results can be traced back to the fact that most decisions in water resources management, at almost all levels, remain principally driven by short-term economic and political considerations that lack the long-term vision needed to implement sustainable development practices. In this pattern the state of the Italian water services - fragmented management and high deficiencies in the collection and treatment of wastewater, and even present and future problems in water supply in some areas of the country – explains the rationale of the radical reform introduced by Law 36/1994 for hydro services.

Based on the necessity to industrialize the sector and, at the same time, on the impossibility of avoiding a natural monopoly, the law imposes at least the exploitation of all possible economies of scale and scope, aiming at reaching a competition for the market as a surrogate of the impossible competition in the market. Moreover it is necessary to ensure as soon as possible in Italy a national coherent governance of water resources, able to adopt a regulatory framework with a unified integrated management of water resources. Good governance of water is not only a fundamental pillar of sustainable use of natural resources, but also the key element for the social welfare and economic growth.

In this paper a set of Italian water utility companies is utilized in order to estimate the sustainable efficiency of the whole Italian water sector. In particular the present evaluation has been carried out using the mathematical/linear programming of Data Envelopment Analysis (DEA). DEA is a well-established mature multi-criteria analytic technique for evaluating the efficiency of systems that exhibit similar operational characteristics with several inputs and outputs. Such technique is able to not only assess the efficiency of each one of the different units of the system relative to the other ones, but also suggest corrective policies and measures which could make the inefficient units efficient. This approach can be useful for policy makers to direct decisions towards a more sustainable and efficient water sector.”

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