



“Gheorghe Asachi” Technical University of Iasi, Romania



APPROPRIATE TECHNOLOGIES FOR DRINKING WATER TREATMENT IN MEDITERRANEAN COUNTRIES

Sabrina Sorlini*, Luca Rondi, Andrea Pollmann Gomez, Carlo Collivignarelli

*University of Brescia, Department of Civil Engineering, Architecture, Land, Environment and of Mathematics, CeTamb LAB –
Research laboratory on appropriate technologies for environmental management in resource-limited Countries,
43 Via Branze, 25123 Brescia, Italy*

Abstract

This paper aims at analyzing the drinking water issue in the Mediterranean region, highlighting the principal problems and the appropriate technologies applicable in the different countries. The countries of this area are characterized by a huge variety from social, cultural, economic and environmental point of view. In particular, water distribution is inhomogeneous between the North, East, and South; even the type of water sources and the related quantity and quality problems differ country by country.

Potable water comes from brackish and seawater, surface water, groundwater and water reservoirs with each source face different issues. The main problem of brackish and seawater for example is the high salinity and the contamination by disinfection byproducts, in addition to the microbiological and chemical contamination due to human activities that characterize also other surface water sources. Groundwater is also affected by human activity and it is not exempted from salinity because of the water intrusion. Moreover, water reservoirs are often contaminated by seasonal algal blooms.

Technologies applied for drinking water treatment vary country by country. The paper presents the main treatment processes associated with the main water pollutants, according to the Mediterranean region. Case studies of drinking water treatment plants are also analyzed, presenting alternative technologies appropriate for specific contexts, among others. The characteristics of each specific context should be carefully analyzed in order to develop the most appropriate technologies; high-end technologies for drinking water treatment may not be applied equally to all countries or communities of the Mediterranean region.

Key words: drinking water quality, Mediterranean region, water treatment technologies

Received: December, 2014; Revised final: June, 2015; Accepted: June, 2015

* Author to whom all correspondence should be addressed: email sabrina.sorlini@unibs.it; Phone +39 030 371 1299; Fax: +39 030 371 1312