

Treated Wastewater Reuse in Algeria: Overview, Mobilization Potential and Challenges

Authors : Dairi Sabri, Mrad Dounia, Djebbar Yassine, Abida Habib

Abstract : Food security, which may be ensured by important agricultural production, needs huge amounts of water for irrigation. Recognizing this, the Algerian government made enormous efforts to mobilize water resources. Every drop of water collected, regardless of its origin, is needed to strengthen agricultural production. The present irrigated area in Algeria is about 1 million hectares while the potential agricultural area all over the country exceeds 9 million ha. This clearly shows the need for non-conventional water resources in Algeria, especially treated wastewater reuse. The use of treated wastewater in agricultural irrigation is still at the experimental stage in Algeria. While 20 million hectares worldwide are irrigated with treated wastewater, only 2300 hectares in Algeria are irrigated on an experimental basis in the regions of Setif, Constantine, Mila Telemcen, Tougourt and Boumerdès. The volume of wastewater discharged nationwide is estimated to be around 750 million cubic meters and is expected to exceed 1.5 billion m³ in 2020. An ambitious program of providing treatment facilities has been initiated in this direction to increase the treatment capacity to 2.5 million m³ per day in 2030. In order to optimize the use of this resource, specific research actions interested in defining treated wastewater reuse opportunities and standards are undertaken. The objective of this study is basically to examine the different components of treated wastewater reuse, including standards, treatment processes, agricultural opportunities and potentials as well as technical and economic aspects governing the feasibility of this technology in Algeria based on Geographic Information System (GIS).

Keywords : wastewater reuse, integrated management, irrigation, GIS

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