

## Constructed wetland, green and sustainable technology for domestic wastewater treatment under arid climate in rural areas: the case of Morocco

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### Abstract

The aim of this paper is to demonstrate the applicability and the adaptation of constructed wetland (CWs) eco-technology for the treatment of domestic wastewater, especially in rural areas under arid climates. Actually, most rural areas in Morocco are suffering from pollution, and the potential illness caused by untreated wastewater discharge in the environment. Sanitation in these regions, where technical and financial resources are usually limited, has a negative impact on the quality of life of the rural population and their water resources. Developing treatment techniques adapted to this socio-economic context taking into account the social, technical, and financial capacities of rural areas is very challenging.

Green and sustainable technologies such as constructed wetlands (CWs) have several inherent advantages compared to conventional systems, including low capital costs, less infrastructure, lower operating costs, simplicity of design, and ease of operation. CWs under different sanitation typologies proved as an efficient wastewater treatment method in a real application in rural villages of Morocco and could be considered as an efficient and promising domestic wastewater treatment solution in rural areas, under arid conditions, to promote environmental protection and wastewater reuse.

### Keywords:

Arid climate; Constructed wetlands; Domestic wastewater; Rural sanitation; Reuse

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### Biography



Mrs. Laila Mandi is currently a Professor of Water and Environmental Sciences at Cadi Ayyad University, Marrakech (Morocco). From 2001–2016, she was the coordinator of the Pole of Competencies on "Water and Environment" (PC2E). Since 2008, she has been the Director of the National Centre for Studies and Research on Water and Energy at Cadi Ayyad University. She has coordinated several funded research projects at national and international levels. She supervised more than 30 Ph.D. theses. She has published more than 200 peer-reviewed scientific papers and book chapters. She has been a guest editor of two special issues of

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Water journal: “Cyanobacteria Harmful Bloom Remediation Enabling Eco-Technology for Water Reclamation” and “New Insights into Wastewater Reclamation and Reuse”. Since 2014, she has been a member of the college of qualified personalities at the France Water Academy. In 2015, she was awarded the Islamic Development Bank (IDB) Prize for Women’s Contribution to Development in recognition of her outstanding research work and contribution to water resources management. In 2017, she became a member of the network of Mediterranean Experts on Climate and Environmental Change (MedECC). Currently, she is a member of the International Water Association.

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