

Water security in the eastern region of Morocco: current situation and alternatives

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Abstract

The Moulouya, Zousfana, Kert, and Isly watersheds and the Mediterranean coastal zone provide the eastern region of Morocco with the water resources needed for drinking water supply, irrigation, tourism, industry, and access to ecosystem services (fisheries, biodiversity, and tourism activities). The majority of freshwater withdrawals come primarily from the Moulouya watershed and are consumed in the northern part of the region, where the main irrigated areas, 70% of the population (Provinces of Oujda, Nador, Berkane, and Driouch), seaside resorts (Saidia, Cap de l'eau, Nador), and industrial activities (agroindustry) are located. Currently, these water potentials are threatened by problems affecting both the quantity and quality of water resources and constituting a threat to the water supply of the entire region. This requires the implementation of alternatives for sustainable management of water resources and ensuring water security of the territories. To better illustrate these problems and alternatives relating to water resources, we relied on a logical framework approach which allows us to establish the problem tree bringing together the main causes and their consequences and the objectives tree formulating the means for a better identification of solutions to all the problems posed. Thus, the reduction of the storage capacity of dams, the decline and loss of water resources, the expansion of irrigated agriculture, the increase in demand, the decrease in water table levels, the degradation of water quality and the insufficient capacity to implement integrated water resources management (IWRM), represent the main causes threatening the water security of the eastern region of Morocco. The alternatives grouped in the objectives tree include: improved dam storage capacity, harnessed new water resources, better protected water resources and optimized consumption, improved supply and demand management, an efficient information system, and developed IWRM implementation capacities. All these alternatives will ensure better integrated water resource management for sustainable water security in the eastern region of Morocco.

Biography

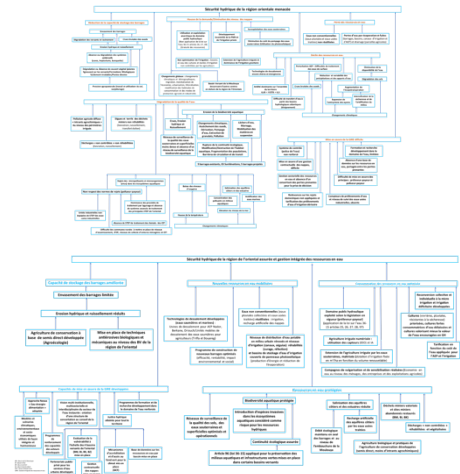


The author received his PhD in 2001 from Mohammed Premier University, Faculty of Sciences, Oujda research interests include environmental sciences, primarily Water and Waste: Impact, Treatment, Recovery. His current research focuses on (i) columns leaching tests for household and mining waste and the impact of treated wastewater on ecosystems and agrosystems in the eastern region of Morocco. He is author of over 50 articles in national and international journals. International projects coordinators: Integrated Action No. MA/07/173, Volubilis Program, 03 projects of Belgian UMP-CUD Cooperation Pro-

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2. Mahjoub M., Arabi M., Sbaa M., Smiri Y. (2023) Contribution to the evaluation of the physicochemical and metallic quality of the surface waters of the Moulouya River (Lower Moulouya, Eastern Morocco), *Mor. J. Chem.*, 11(1), 243-264.
3. Kajeou H., Sbaa M., A. Darmous A., 2023. Physico-chemical, chemical and biological characterization of wastewater treatment plant of Oujda (Eastern Morocco) and possibility of reuse in irrigation 2023, *Materials Today: Proceedings*, p. 3326-3335.
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