

Special Issue on  
**Advances in Irrigation Development and Management to  
Cope with Water Scarcity**

# CALL FOR PAPERS

Water is a natural resource whose demand by society has increased, implying a new water management paradigm aiming at sustainability. Also, irrigated agriculture is the main water user in large water scarce regions. To cope with water scarcity is a complex process because there are several constraints, including social, economic, cultural, and institutional, imposing on the irrigated agriculture a big challenge of water saving and farmer income increase. This implies new technical and management solutions need to be applied to agricultural systems, for example via water conservation and saving, water harvesting, demand and supply management, water-saving irrigation systems and irrigation scheduling techniques. This is an emergent issue because of the adverse impacts of global and climatic changes that could reduce the amount of water available for agriculture and the dependent ecosystem services, particularly in more dry areas.

This special issue will focus on recent developments in the area of agricultural water management, namely, the problem of water saving and conservation in irrigated agriculture. We encourage the submission of original research and review articles focusing on feasible solutions for specific real problems within the water scarcity context.

Potential topics include but are not limited to the following:

- ▶ Soil water management, including the increase of soil water retention and storage, and water harvesting
- ▶ Irrigation systems design and management, referring to the reduction of water demand through the improvement of the irrigation systems, including emerging themes like automation and precision irrigation
- ▶ Irrigation management and scheduling techniques and tools, including deficit irrigation, the optimization of water productivity, and remote sensing
- ▶ Supply management, including the improvement of storage capacity, conveyance and delivery scheduling, and the development and management of irrigation schemes
- ▶ Agricultural drainage management, including salinization and health risks
- ▶ Use of nonconventional water for irrigation, including treated waste water, desalinated water, and irrigation water reuse
- ▶ Large scale application of water table management and subirrigation
- ▶ Agricultural drainage networks for malaria control
- ▶ Soil management practices for water conservation, including tillage, surface mulch, weed management, and land leveling
- ▶ Reducing water demand practices, including crop scheduling to match season with low evaporative, shortening crop duration, selecting low demand crop varieties and crop patterns, and adopting deficit irrigation
- ▶ Water accounting and auditing
- ▶ Water harvesting
- ▶ Optimization of irrigation water productivity
- ▶ Remote sensing applied to irrigation management
- ▶ Conjunctive use of surface and underground water
- ▶ Public-private partnership for irrigation schemes development and management
- ▶ Automation of water distribution for increasing water efficiency
- ▶ UAV technologies to remote sensing crop water status for irrigation management
- ▶ Sensors, smart controllers, automation, and real-time irrigation management
- ▶ Big-data for irrigated agriculture
- ▶ Renewable energy and irrigation

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Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/ija/aidms/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.