

Sustainable Water Management

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Sustainable water management (SWM) requires allocating between competing water sector demands, and balancing the financial and social resources required to support necessary water systems. The objective of this review is to assess SWM in three sectors: urban, agricultural, and natural systems. This review explores the following questions:

(1) How is SWM defined and evaluated? (2) What are the challenges associated with sustainable development in each sector? (3) What are the areas of greatest potential improvement in urban and agricultural water management systems? And (4) What role does country development status have in SWM practices?

The methods for evaluating water management practices range from relatively simple indicator methods to integration of multiple models, depending on the complexity of the problem and resources of the investigators. The two key findings and recommendations for meeting SWM objectives are: (1) all forms of water must be considered usable, and reusable, water resources; and (2) increasing agricultural crop water production represents the largest opportunity for reducing total water consumption, and will be required to meet global food security needs. The level of regional development should not dictate sustainability objectives, however local infrastructure conditions and financial capabilities should inform the details of water system design and evaluation.