

Sustainable Irrigation Management

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<i>Sustainable Irrigation Management</i>	2020-10-06
AUBREE SYLVIA	

Irrigation Management Edward Elgar Publishing

This new book, Sustainable Practices in Surface and Subsurface Micro Irrigation, offers a vast amount of knowledge and techniques necessary to develop and manage a drip/trickle or micro irrigation system. The information covered has worldwide applicability to irrigation management in agriculture. Focusing on both subsurface and surface micro irrigation, chapters in the book cover a variety of new research and information on: • Irrigation water requirements for tanier, vegetables, bananas, plantains, beans, and papaya • Irrigating different types of soils, including sandy soils, wet soils, and mollisols • New applications for micro irrigation using existing technology, such as meteorological instruments and MicroCAD • Meteorological instruments for water management

Sustainable Irrigated Agriculture Academic Press

This book highlights the concerns related to food security and agricultural water management. Food security came up as a problem in the first decade of the 21st century, questioning the sustainability of humankind, which is certainly associated directly to the agricultural water management that has varied dimensions and needs integrative expertise in order to be dealt with. The aim of this book is to integrate the subject matter that deals with sustainable irrigation management & development and strategies for irrigation water supply & conservation in a single text. It is a comprehensive compilation of information regarding content revealing situations from distinct continents. Several case studies have been elucidated in this book to provide the readers with a general scenario of the problem, challenges and perspective of irrigation water use. The book serves as a descriptive reference for professionals, students and researchers working on distinct aspects of agricultural water management.

Sustainable Irrigation Management, Technologies and Policies II World Bank Publications

"Wessex Institute of Technology's Sustainable Irrigation 2012 Conference held at University of South Australia in Adelaide"--Preface.

Salinity Management for Sustainable Irrigation Routledge

This new book, Principles and Practices of Sustainable Micro Irrigation, is the first in the new series on micro irrigation, which offers a vast amount of knowledge and techniques necessary to develop and manage a drip/trickle or micro irrigation system. Written by experienced scientists from various parts of the world, the chapters in this book offer basic principles, knowledge, and techniques of micro irrigation management, which are essential in designing, developing, and evaluating an agricultural irrigation management system. The methods and techniques have worldwide applicability to irrigation management in agriculture. The book includes coverage of many important topics in the field, including: • An historical review of micro irrigation • The current global status of the field and its potential • Basic principles and applications • New research on chemigation and fertigation • Technologies for specific crops, such as sugar cane • Irrigation software for micro irrigation design • Affordable and low-cost micro irrigation solutions for small farms and farms in developing countries • Micro irrigation design using Hydrocalc software This book is a must for those interested in irrigation planning and management, namely, researchers, scientists, educators, and students.

Sustainable Irrigation Development in the White Volta sub-Basin WIT Press

Fresh water is becoming an increasingly precious commodity. In the near future, control of it could lead to the type of political instability that is now associated with energy shortages. This book addresses the different aspects of irrigation, including not only the management of water resources and scientific and technical aspects, but also matters related to policy and economics. The objective of the Conference Series is to provide a venue for an international presentation and dissemination of papers related to sustainable ways of conducting irrigation. Sustainable irrigation has three key aspects, i.e. i) developing ways of using scarce water resources most efficiently to maximize food production while minimizing the environmental impact of irrigation activities on the affected land and water resources; ii) ensuring that the extraction of water from surface and groundwater sources is set at sustainable levels to maintain healthy aquatic ecosystems to secure a continued supply of quality water for irrigation, recreation and urban/industrial uses; iii) facilitate an equitable distribution of the water available for consumption between competing users, which is essential to maintain sustainable communities. Attracting researchers in academia and industry, as well as professional practitioners and policy makers, the Third International Conference provides a platform for a review of the state of the art from the scientific, technological, political and economic points of view. Papers from the Meeting are published in this volume, and cover the following topics: Irrigation Management; Modelling and Simulation; Sustainable Irrigation - Farmers' Actions, Environmental Benefits and Socio-economic Consequences.

Improving Irrigation in Asia World Bank Group

"A better understanding of plant requirements and the highly efficient management of water has led irrigators to apply water to accurately meet crop needs. This has meant a considerable reduction in the amount of water flushing through the root-zone. As a result, soil salinity levels have risen. Current drought conditions and low water allocations are likely to result in even less water being used to flush salts from the root-zone. The declining quality of water resources means that actively removing salt from the root-zone is even more important." -- Publisher.

Advances in Planning, Design and Management of Irrigation Systems as Related to Sustainable Land Use Springer Science & Business Media

Water Scarcity and Sustainable Agriculture in Semiarid Environment: Tools, Strategies and Challenges for Woody Crops explores the complex relationship between water scarcity and climate change, agricultural water-use efficiency, crop-water stress management and modeling water scarcity in woody crops. Understanding these cause- and effect relationships and identifying the most appropriate responses are critical for sustainable crop production. The book focuses on Mediterranean environments to explain how to determine the most appropriate strategy and implement an effective plan; however, core concepts are translational to other regions. Informative for those working in agricultural water management, irrigation and drainage, crop physiology and sustainable agriculture. Focuses on semi-arid crops including olive, vine, citrus, almonds, peach, nectarine, plum, subtropical fruits and others Explores crop physiological responses to drought at plant, cellular and/or molecular levels Presents tool options for assessing crop-water status and irrigation scheduling

Sustainable Irrigation Management, Technologies and Policies III IWMI

This valuable book, the third volume in the Research Advances in Sustainable Micro Irrigation series, focuses on sustainable micro irrigation management for trees and vines. It covers the principles as well as recent advances and applications of micro irrigation techniques. Specialists throughout the world share their expertise on: • Automation of micro irrigation systems • Service and maintenance of micro irrigation systems • Evaluation of micro irrigation systems • Scheduling of irrigation • Using municipal wastewater for micro irrigation • Micro-jet irrigation and other systems • The effect of potassium, acid lime, and other elements

The Principles of Participation for Sustainable Irrigation Management Springer

Introduction; Institutions, policy and research; Research and policy on irrigation: the case of Pakistan; Discussion: linking research with policy; Conclusion.

Practices of Irrigation & On-farm Water Management: Volume 2 APH Publishing

Irrigated agriculture and the use of water resources in agriculture face the challenges of sustainable development. Research has advanced our knowledge of water use by crops, soil-water-solutes interactions, and the engineering and managerial tools needed to mobilize, convey, distribute, control and apply water for agricultural production. However, the achievements booked in user practice have revealed the need for new developments in the areas of resource conservation, control of environmental and health impacts, modernisation of technologies and management, economic viability and the social acceptance of changes. The contributions to Sustainability of Irrigated Agriculture cover most of the relevant disciplines. Besides its multidisciplinarity, the different origins, experience, backgrounds and practices of the authors provide a wide, in-depth analysis of the various aspects of water resource utilization in agriculture. The papers review scientific, technical and managerial aspects, highlighting the main problems, issues and future developments. The book covers the different aspects of sustainability, including environmental, technical, economic, institutional and social ones. Advances in irrigation science and engineering are dealt with, both on- and off-farm. Special attention is paid to the different components of water quality management, to the transfer of technology, and to capacity building.

Improvement of Irrigation and Drainage Management for Sustainable Agriculture in the Lower Syr River Basin Fao

In many countries irrigated agriculture consumes a large proportion of the available water resources, often over 70% of the total. There is considerable pressure to release water for other uses and, as a sector, irrigated agriculture will have to increase the efficiency and productivity of its water use. This is particularly true for manually operated irrigation systems managed by government agencies, which provide water for a large number of users on small landholdings and represent 60% of the total irrigated area worldwide. Drawing on the author's 30 years of experience in some 28 countries, this book offers knowledge of the management of irrigation and drainage systems, including traditional technical areas of systems operation and maintenance, and expanding managerial, institutional and organizational aspects. Chapters provide guidelines to improve management, operation and maintenance processes, which move management thinking out of traditional public-sector mindsets to a more customer-focused, performance-oriented service delivery. As a practical guide to improve efficiency and productivity in irrigated agriculture, this book will be essential reading for irrigation managers and technicians as well as students and policy makers in water management, agriculture and sustainable development.

Impacts of Colombia's Current Irrigation Management Transfer Program Springer Science & Business Media

Fresh water is becoming an ever increasingly precious commodity, control of which could lead in the near future to the type of political instability now associated with energy shortages. This book addresses the different aspects of irrigation, including not only the management of water resources and scientific and technical aspects, but also matters related to policy and economics, researchers in academia and industry as well as professional practitioners and policy makers. Bringing together papers from the First International Conference on Sustainable Irrigation Management, Technologies and Policies, the book covers topics such as: Irrigation Controls; Irrigation Modelling; Irrigation Systems and Planning; Irrigation Management.

Sustainable Irrigation and Drainage V CRC Press

The comprehensive and compact presentation in this book is the perfect format for a resource/textbook for undergraduate students in the areas of Agricultural Engineering, Biological Systems Engineering, Bio-Science Engineering, Water Resource Engineering, and Civil & Environmental Engineering. This book will also serve as a reference manual for researchers and extension workers in such diverse fields as agricultural engineering, agronomy, ecology, hydrology, and meteorology.

Water Resources Management and Sustainable Agriculture Springer

This new book, *Principles and Practices of Sustainable Micro Irrigation*, is the first in the new series on micro irrigation, which offers a vast amount of knowledge and techniques necessary to develop and manage a drip/trickle or micro irrigation system. Written by experienced scientists from various parts of the world, the chapters in this book offer basic principles, knowledge, and techniques of micro irrigation management, which are essential in designing, developing, and evaluating an agricultural irrigation management system. The methods and techniques have worldwide applicability to irrigation management in agriculture. The book includes coverage of many important topics in the field, including:

- An historical review of micro irrigation
- The current global status of the field and its potential
- Basic principles and applications
- New research on chemigation and fertigation
- Technologies for specific crops, such as sugar cane
- Irrigation software for micro irrigation design
- Affordable and low-cost micro irrigation solutions for small farms and farms in developing countries
- Micro irrigation design using Hydrocalc software

This book is a must for those interested in irrigation planning and management, namely, researchers, scientists, educators, and students.

Managing Irrigation for Environmentally Sustainable Agriculture in Pakistan CABI

This book aims at deriving governance and sustainability lessons from analysing the implementation and management of some major irrigation programs in the Mediterranean Region. Eight countries are targeted, namely: Spain, Italy, Albania, Turkey, Jordan, Egypt, Tunisia and Morocco. The main focus programs include the modernisation and rehabilitation of the existing irrigation systems, the transfer of irrigation management responsibilities to water users' organizations, public private partnerships arrangements, the monitoring & evaluation of participatory irrigation management and transfer processes, and the governance of groundwater resources for irrigation. The adopted approach relies on learning from the value of each single experience, and on advancing solutions that emerge from their comparative analysis and that may be of guidance to those engaged in these programs. The country experiences indicated that often times, significant shortcomings in the implementation of these programs have occurred and hopefully, this book could be a source of inspiration for the corrective actions needed.

Problems, Perspectives and Challenges of Agricultural Water Management CRC Press

Sub-Saharan Africa has an irrigation potential of about 42 million hectares of which only 17% is developed. Despite several investments in irrigation the growth is slow. This study aims at helping to achieve sustainable irrigation in sub-Saharan Africa, through gaining a better understanding of productive irrigation water use and effective management of irrigation development. The study is conducted in the White Volta sub-basin specifically in Northern Ghana and Southern Burkina Faso which have been experiencing rapid irrigation development since the mid 1990s. The study identified growing markets for irrigated products as an important driving force behind the expansion of irrigation which has given rise to new technologies. The new technologies have spread because they gave farmers direct control over water sources. These new technologies allow relatively small farm sizes which can be adequately managed by the surveyed farmers. As a result high productivities are achieved. The hydrological impact of upscaling irrigation in the sub-basin is sustainable and will maximize the overall benefits derived from water resources in the Volta Basin.

Practices of Irrigation & On-farm Water Management: IWMI

'A unique and significant longitudinal study of irrigation intervention in FMIS in Nepal that revives important debates on how irrigation management evolves and how this can be investigated. This concise and accessible book can inform and challenge agencies and donors to reflect on policies and researchers to argue further the study of collective action and political theory in irrigation management.' - Linden Vincent, Wageningen University, The Netherlands 'Improving Irrigation in Asia by Elinor Ostrom and colleagues is grounded in intimate detail on water management experience in Nepal while being informed by broadly-applicable concepts and behavioral theories. It greatly advances our understanding of management options and effects. As the water resources available for agriculture become more limited and unreliable, the efficiency and productivity with which irrigation water is used must be increased. While better technology can assist in this quest, the greatest potential gains lie in the social and organizational

domains.' - Norman Uphoff, Cornell University, US 'Governance of irrigation systems is complex, needing social, technical and financial actions that support farming. Few people have as much knowledge of self-governing irrigation systems as these authors, and few countries have as many of these systems as Nepal. Lessons from these small irrigation systems can be adapted to much larger units, and to other kinds of activity. External assistance on a modest scale could generate practical benefit, by encouraging self-reliance in communities.' - Charles Abernethy, International Irrigation Management Institute, Colombo (1987-94) and Asian Institute of Technology, Thailand (1996-99) *Improving Irrigation in Asia* is based on a longitudinal study over two decades on innovative intervention for sustained performance of irrigation systems. The work identifies key factors that can help explain the performance of interventions, and explicates lessons for resource management and the management of development assistance. In 1985, the Water and Energy Commission Secretariat of Nepal and the International Irrigation Management Institute developed an ingenious intervention program for nineteen irrigation systems located in the middle hills of Nepal in an attempt to overcome the prevailing 'best-practices' traps, in regard to assisting irrigation systems. This book highlights the innovativeness of the project lay in its provision of ample opportunities for farmers to make decisions regarding the operation of the irrigation system based on their local knowledge and creativity. The authors of this work, Elinor Ostrom, Wai Fung Lam, Prachanda Pradhan and Ganesh P. Shivakoti provide detailed analysis of these interventions and support the conclusion that farmers can build on an innovative intervention that not only provides physical improvements but also enhances farmers' problem-solving capacity. They argue that to achieve sustainable improvements in performance, the farmers themselves need to engage in collective action over time and support local entrepreneurs who provide leadership and stimulate adjustments to change. Providing practical policy solutions, this study will prove a fascinating and invaluable read for academics and scholars of development studies, resource management, and irrigation studies, as well as development specialists in international agencies, policymakers in governments and international donor agencies.

Sustainable Irrigation and Drainage IV CRC Press

India is a fast developing economy whose natural resource base, comprising land and water supporting agricultural production, are not only under enormous stress, but also complex and not amenable to a uniform strategy. This book addresses strategies for food security and sustainable agriculture in India, including lessons to be learned in other developing economies across the world.

Sustainable Water Management in Smallholder Farming BoD - Books on Demand

Russia is a recognized leader in forest conservation, research and development. This book analyzes the country's forest sector and the severe management problems that threaten its socioeconomic stability and environmental integrity. It outlines the significance of Russia's forest resources, review the sector's performance, identifies the key challenges, proposes and agenda for forest sector reform, and assesses the need for assistance from the international community. The book's main focus is on Siberia and the Far East. Tables, boxes and figures show various factors that contribute to and are affected by Russia's environmental problems and the expected reforms in the forest sector. Also available in Russian: Stock No. 14005 (ISBN 0-8213-4005-0).

The Use of Sustainable Irrigation for Poverty Alleviation in Tanzania CRC Press

Water is critical to all human activities, but access to this crucial resource is increasingly limited by competition and the effects of climate change. In agriculture, water management is key to ensuring good and sustained crop yields, maintaining soil health, and safeguarding the long-term viability of the land. Water management is especially challenging on smallholder farms in resource-poor areas, which tend to be primarily rainfed and thus highly dependent on unreliable rainfall patterns. Sustainable practices can help farmers promote the development of soils, plants and field surfaces to allow maximum retention of water between rains, and encourage the efficient use of each drop of water applied as irrigation. Especially useful for farmers' groups, agricultural extension workers, NGOs, students and researchers working with farmers in dryland areas, this comprehensive yet concise book is a practical and accessible resource for anyone interested in sustainable water management.