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Nota di contenuto	Preface -- Chapter 1 Agrovoltaic and Smart Irrigation: Pakistan Perspective by Hafiz M. Asfahan, Muhammad Sultan, Fiaz Ahmad, Faizan Majeed, Md Shamim Ahamed, Marjan Aziz, Redmond R. Shamshiri, Uzair Sajjad, Muhammad Usman Khan and Muhammad Farooq -- Chapter 2 Sustainable Irrigation Management for Higher Yield by Fahd Rasul, Hassan Munir, Aftab Wajid, Muhammad Safdar, M. Salman Ayub, Sobia Shahzad, Rehan Mehmood, M. Adnan Shahid, Abid Sarwar, M. Danish Majeed, Umair Gull, Wajid Nasim Jatoi, Muhammad Mubeen, Summera Jahan and Shakeel Ahmed -- Chapter 3 An Overview on Techniques Involved in Recharging Ground Water and Its Impacts by Muthuminal R. and Mohana Priya R -- Chapter 4 An IoT-based Immersive Approach to Sustainable Farming by Pratik Ghutke and Rahul Agrawal -- Chapter 5 Smart Rainwater Harvesting System for Sustainable Agricultural Irrigation and Drainage System by Mohd Hudzari Haji Razali, Abdul Qudus Puteh, Alawi Haji Sulaiman and Mohamad Hakim Mohamad Yatim -- Chapter 6 Water Sustainability through Drainage Reuse in Agriculture A Case for Collaborative Wireless Sensor Networks by Huma Zia -- Chapter 7 Improvement of Tertiary Irrigation Networks, Changes in Cropping Patterns, and Increasing Cropping Index at Kendal Indonesia by Meinarti Norma Setiapermas, Anggi Sahrur Romdon and Yulis Hindarwati -- Chapter 8 Irrigation Scheduling Methods: Overview and Recent Advances by Younsuk Dong -- Chapter 9 Fundamentals of Irrigation Methods and

Their Impact on Crop Production by Fawibe Oluwasegun Olamide, Bankole Abidemi Olalekan, Sokunbi Uthman Tobi, Mustafa Abdulwakil Adeyemi, Joseph Oladipupo Julius and Fawibe Kehinde Oluwaseyi -- Chapter 10 Effect of Irrigation Depths and Salinity Levels on the Growth and Production of Forage Palm Orelha de Elefante Mexicana by Mariana de Oliveira Pereira, Jailton Garcia Ramos, Carlos Alberto Vieira de Azevedo, Andre Alisson Rodrigues da Silva, Geovani Soares de Lima, Luciano Marcelo Falle Saboya, Patricia Ferreira da Silva and Gustavo Bastos Lyra -- Chapter 11 Anaerobic Filters: Alternative Solution for the Treatment of Domestic Wastewater for Reuse in Vegetable Irrigation by Valdemiro Pitoro, Rodrigo Sanchez-Roman, Joao Queluz, Tamires Da Silva, Sergio Jane and Kevim Muniz -- Chapter 12 Theoretical Approaches to Water Use Optimization for Rice Irrigation Systems in the Lower Kuban by Alina Buber, Yuri Dobrachev, Alexander Buber and Evgenii Ratkovich -- Chapter 13 Smart Irrigation for Climate Change Adaptation and Improved Food Security by Erion Bwambale, Felix K. Abagale and Geophrey K. Anornu -- Chapter 14 Resilience of Irrigated Agriculture to Face the Challenges in Mediterranean Climatic Conditions (Iberian Peninsula) by Antonio Canataro Duarte, Amparo Melian-Navarro and Antonio Ruiz-Canales -- Chapter 15 Seed Soaking Times and Irrigation Frequencies Affected the Nutrient Quality and Growth Parameters of *Hordeum vulgare* L. Cultivated in Hydroponics by Ryan Anthony Smith, Muhali Olaide Jimoh and Charles Petrus Laubscher.

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#### Sommario/riassunto

Uneven distribution and depletion of good-quality water reserves significantly devastate the agriculture sector. In this scenario, water management as well as efficient irrigation and drainage strategies are primarily required to conserve water resources and enhance farm efficiency. *Irrigation and Drainage - Recent Advances* provides insights into irrigation methods, scheduling possibilities, and optimal irrigation frequencies. It also discusses management strategies including methods of groundwater recharging and rainwater harvesting, restoration, and modification of drainage networks for manifesting the cropping index. The book presents key aspects and examines the role of Agrovoltaic energy, artificial intelligence, and the Internet of Things (IoT) in the development of smart irrigation systems for sustainable farming.

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