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Titolo	Food-Energy-Water Nexus Resilience and Sustainable Development : Decision-Making Methods, Planning, and Trade-Off Analysis // edited by Somayeh Asadi, Behnam Mohammadi-Ivatloo
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Soggetti	Renewable energy resources Environmental management Agriculture Sustainable development Sustainable architecture Energy security Renewable and Green Energy Water Policy/Water Governance/Water Management Sustainable Development Sustainable Architecture/Green Buildings Energy Security
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction to FEW nexus -- Resiliency and sustainability definition in FEW systems -- Planning of interdependent energy, water and food systems -- Decision-making tools for optimal operation of FEW systems -- Modeling of EW and FEW systems -- Sustainable design of EW and FEW systems -- Impact of renewable energy resources in EW and FEW systems -- Renewable energy based water desalination systems -- Net zero energy buildings: design and operation -- Net zero water and waste buildings: design and operation -- Renewable energy systems for agriculture applications -- Security interactions of food, water and energy systems -- Challenges and opportunities of FEW nexus in the sustainable development of different countries --

Impact of FEW nexus perspectives on managing agricultural droughts
-- An integrated modeling approach for FEW nexus management.

Sommario/riassunto

This book presents readers with an integrated modeling approach for analyzing and understanding the interconnection of water, energy, and food resources and discusses the relationship between resilience and sustainability of the food- energy –water (FEW) system. Authors provide novel frameworks, models, and algorithms designed to balance the theoretical and applicative aspects of each chapter. The book covers an integrated modeling approach for FEW systems along with developed methods, codes, and planning tools for designing interdependent energy, water and food systems. In-depth chapters discuss the impact of renewable energy resources in FEW systems, sustainable design and operation, net zero energy buildings, and challenges and opportunities of the FEW nexus in the sustainable development of different countries. This book is useful for graduate students, researchers, and engineers seeking to understand how sustainable FEW systems contribute to the resilience of these systems and help policy and design makers allocate and prioritize resources in an integrated manner across the food, energy, and water sectors. An integrated modeling approach for analyzing and understanding the interconnection of water, energy, and food resources. Contains novel frameworks, models, and algorithms. Includes case studies to enhance practical applications.
