

# Preface

This book is the outcome of an International Conference on Soil Classification and Reclamation of Degraded Lands in Arid Environments held during 17–19 May 2010 in Abu Dhabi, United Arab Emirates. The Environment Agency – Abu Dhabi (EAD) and Dubai-based International Center for Biosaline Agriculture (ICBA) jointly organized the conference. The main objective of the conference was to bring renowned scientists, educators, and policy makers to share and discuss conference technical themes in broader perspectives.

We received overwhelming response to the call for papers, and over 250 abstracts were received from over 35 countries. The abstracts were reviewed, and those suitable were accepted for the submission of full manuscripts. The diversity of the conference themes made it necessary to publish these papers into two independent books. Prior to publication of the papers, all preselected papers went through rigorous technical review and through an iterative review process with authors before finalization for publication.

The papers published in this book “Developments in Soil Salinity Assessment and Reclamation: Innovative Thinking and Use of Marginal Soil and Water Resources in Irrigated Agriculture” represent part of the conference proceedings. The rest of the papers are published in a separate book, “Developments in Soil Classification, Land Use Planning and Policy Implications-Innovative Thinking of Soil Inventory for Land Use Planning and Management of Land Resources (Shahid SA, Taha FK and Abdelfattah MA (eds)).”

In this book, papers pertaining to high tech in soil salinity mapping and monitoring, management and reclamation of salt-affected soils, use of marginal quality water for crop production, salt-tolerance mechanisms in plants, biosaline agriculture and agroforestry, microbiological interventions for marginal soils, opportunities and challenges in using marginal waters, and soil and water management in irrigated agriculture are presented in eight parts divided into 52 chapters.

Part I deals with advanced technologies in soil salinity assessment and monitoring using remote sensing, geographical information system, modeling, and geostatistics, and examples from Egypt, India, Iran, Morocco, South Africa, Spain, Thailand, UAE, USA, and Uzbekistan are presented. The experience of management and

reclamation of soils from China, India, Oman and Pakistan, is presented in Part II. The research on the use of marginal quality water for crop production in Australia, Bangladesh, Egypt, Italy, Morocco, Tunisia, UAE, and USA is included in Part III. Mechanism of salt tolerance in plants is discussed in Part IV including work from Germany and Morocco, whereas in Part V the work from various countries (Egypt, India, Italy, and Uzbekistan) on biosaline agriculture and agroforestry is detailed. A paper on microbiological interventions on marginal soils from Pakistan is included in Part VI. Opportunity and challenges in using marginal waters are presented in Part VII (Egypt, sub-Saharan Africa), and work on soil and water management in irrigated agriculture (Algeria, Egypt, Iran, Morocco, Pakistan, and UAE) are included in Part VIII.

We hope the book will be an excellent addition and contribution to the science and knowledge of soil salinity assessment and monitoring using advanced techniques and use of marginal soil and water resources in irrigated agriculture. We believe the adoption of relevant technologies in specific areas may ultimately lead to optimize crop production in developing countries of arid, semiarid, and desert environments, the regions highly vulnerable to the impact of climate change and food insecurity.

Shabbir A. Shahid  
Mahmoud A. Abdelfattah  
Faisal K. Taha

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Reclamation

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Resources in Irrigated Agriculture

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