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Nota di contenuto	Part 1. Introduction, History and Perspectives -- Chapter 1. Historical perspectives and dynamics of nature, extent, classification and management of salt-affected soils and waters -- Chapter 2. A brief review on soil salinity mapping by optical and radar remote sensing -- Chapter 3. Synergy between Sentinel-MSI and Landsat-OLI to support high temporal frequency for soil salinity monitoring in an arid landscape -- Chapter 4. Modern technologies for diagnosis and prognosis of salt-affected soils and poor-quality waters -- Part 2. Drivers, Stressors and Indicators -- Chapter 5. Salinity tolerance indicator -- Chapter 6. Soil-plant-microbes interactions in salt-affected soils -- Chapter 7. Salt tolerant microbes in mangroves: ecological role and bioprospecting potential -- Chapter 8. The current understanding of mangrove forests of India -- Part 3. Salinization

Mechanisms and Impacts -- Chapter 9. Causes and management of root-zone salinity and sodicity in the arid west Texas: field scale experience -- Chapter 10. Salinity induced physiological and molecular responses of halophytes -- Chapter 11. Characterization and problems of saline-sodic Vertisols and their management options -- Chapter 12. Carbon dynamics in salt-affected soils -- Chapter 13. Engineered polymeric and nano-materials for taming salty soils and waters used for crop production -- Chapter 14. Potential pollutants in soil system: impacts and remediation -- Chapter 15. Groundwater pollution through different contaminants: Indian scenario -- Chapter 16. Tree-based systems for enhancing environmental services of saline environments -- Part 4. Management Opportunities and Strategies -- Chapter 17. Identification, evaluation and domestication of alternative crops for saline environments -- Chapter 18. Engineering and biological approaches for drainage of irrigated lands in India -- Chapter 19. Reclamation of salt-affected soils in drylands of Ethiopia: a review -- Chapter 20. Reviving the productivity of salt-affected lands: Technological options, constraints and research needs -- Chapter 21. Coastal saline soils of India: problems, reclamative measures and management strategies -- Chapter 22. Agro-interventions for sustainable management of salt-affected Vertisols in India -- Chapter 23. Saline agroforestry- a hanging fruit for saline waterlogged ecologies -- Chapter 24. Fruit and vegetable-based saline agricultural systems for nutritional and livelihood security -- Chapter 25. Integrated farming system approach for managing saline and waterlogged ecologies -- Chapter 26. Use of poor-quality waters for agricultural production -- Chapter 27. Management of sodic waters in agriculture -- Part 5. Impact Assessment, Policies and Socio-economic Issues -- Chapter 28. Approaches and methodologies to socio-economic synergies with ecological sciences -- Chapter 29. Management of salt-affected soil: Gender and socioeconomic dimensions for sustainable livelihoods -- Chapter 30. Autonomous adaptation strategies to multiple stressors: a case study with marginal communities in Eastern Uttar Pradesh, India -- Chapter 31. Future research needs: way forward for combating salinity in climate change scenario. .

Sommario/riassunto

Soil and water salinity is a major challenge for the agricultural community and policy makers in terms of meeting the burgeoning population's demand for food and other agricultural commodities. In coastal regions, climate change and sea level rise will aggravate the problem with more and more areas becoming saline due to intrusion of sea water. As such there is a pressing need for modern tools and innovative techniques for the identification of salty soils and poor-quality waters, crop production, soil reclamation and lowering the water table in waterlogged areas. Tackling next-generation problems such as contamination of soil and underground water due to fluoride and arsenic, as well as developing multi-stress tolerant crops is also a high priority. Further, techniques for domesticating halophytes, mangrove-based aquacultures, using seaweed cultures as agricultural crops and integrated farming systems need to be perfected. This book addresses all these aspects in detail, highlighting the diverse solutions to tackle the complex problem of salinity and waterlogging and safer management of poor-quality waters. With chapters written by leading experts, it is a valuable resource for researchers planning future investigations, policy makers, farmers and other stakeholders, and for students wanting insights into vital issues of environment. .