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Nota di contenuto	Part I: Agronomy -- Chapter 1. No-till Farming Systems for Sustainable Agriculture: An Overview -- Chapter 2. Managing Crop Rotations in No-till Farming Systems -- Chapter 3. Challenges and Opportunities in Managing Crop Residue for Multiple Benefits -- Chapter 4. Managing Cover Crops in No-till Farming Systems -- Chapter 5. Challenges and Opportunities in Fertilizer Placement in No-till Farming Systems -- Chapter 6. Selecting and Managing No-till Planters and Controlled Traffic Farming in Extensive Grain Production Systems -- Chapter 7. Challenges and Opportunities for Weed Management in No-till Farming Systems -- Chapter 8. Challenges and Opportunities in Managing Pests in No-till Farming Systems -- Chapter 9. Challenges and Opportunities in Managing Diseases in No-till Farming Systems -- Chapter 10. Strategic Tillage for the Improvement of No-till Farming Systems -- Chapter 11. Developing Organic Minimum Tillage Farming Systems for Central and Northern European Conditions -- Part II: Soil Management

-- Chapter 12. Controlling Soil Erosion using No-till Farming Systems -- Chapter 13. No-Till Farming Systems for Enhancing Soil Water Storage -- Chapter 14. Enhancing Soil Aggregation in No-till Farming Systems -- Chapter 15. Resilient and Dynamic Soil Biology -- Chapter 16. Earthworms in No-till: the key to Soil Biological Farming -- Chapter 17. Pesticide Retention, Degradation, and Transport Off-Farm -- Part III: Climate Change Mitigation and Adaptation -- Chapter 18. No-till Farming Systems to Sequester Soil Carbon: Potential and Reality -- Chapter 19. No-till Farming Systems to Reduce Nitrous oxide Emissions and Increase Methane Uptake -- Chapter 20. Soil carbon Sequestration as an Elusive Climate Mitigation Tool -- Part IV: Economic and Social Impacts -- Chapter 21. Economic Assessment of No-till Farming Systems -- Chapter 22. Socioeconomic Impacts of Conservation Agriculture based Sustainable Intensification (CASI) with Particular Reference to South Asia -- Chapter 23. No-Till Farming Systems in Resource-Limited Contexts: Understanding Complex Adoption Behaviour and Implications for Policy -- Part V: Regional Strategies in No-till Farming Systems -- Chapter 24. Lessons Learnt from Long-Term Experiments on No-till Systems in Semi-Arid Regions -- Chapter 25. Lessons Learnt from Long-Term No-till Systems Regarding Soil Management in Humid Tropical and Subtropical Regions -- Chapter 26. No-Till Farming Systems in South Asia -- Chapter 27. No-till Farming Systems in Rain-fed Areas of China -- Chapter 28. No-till Farming Systems in Southern Africa -- Chapter 29. No-Till Farming Systems in Australia -- Chapter 30. No-till Farming Systems for Sustainable Agriculture in South America -- Chapter 31. No-till Farming Systems in Europe -- Chapter 32. No-Till Farming Systems in North America -- Chapter 33. No-Till Farming Systems in the Canadian Prairies -- Part VI: Perspectives -- Chapter 34. No-Till Farming Systems for Sustaining Soil Health -- Chapter 35. The Future of No-Till Farming Systems for Sustainable Agriculture and Food Security.

Sommario/riassunto

This book is a comprehensive summary of current global research on no-till farming, and its benefits and challenges from various agronomic, environmental, social and economic perspectives. It details the characteristics and future requirements of no-till farming systems across different geographic and climatic regions, and outlines what is needed to increase the uptake of no-till farming globally. Over 35 chapters, this book covers in detail the agronomic and soil management issues that must be resolved to ensure the successful implementation of these systems. Important economic, environmental, social and policy considerations are discussed. It also features a series of case studies across a number of regions globally, highlighting the challenges and opportunities for no-till and how these may vary depending on climate and geopolitical location. This book is a remarkable compilation by experts in no-till farming systems. The promotion and expansion of no-till farming systems worldwide will be critical for food security, and resource and environmental sustainability. This is an invaluable reference for both researchers and practitioners grappling with the challenges of feeding the world's rising population in an environment increasingly impacted by climate change. It is an essential reading for those seeking to understand the complexity of no-till farming systems and how best to optimise these systems in their region.
