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Nota di contenuto	1. Introduction to Concepts of Climate Change Impact on Livestock and its Adaptation and Mitigation -- Part 1: Green House Gas Emission and

Climate Change -- 2. Greenhouse Gas, Climate Change and Carbon Sequestration: Overview and General Principles -- 3. Contribution of Agriculture Sector to Climate Change -- Part 2: Climate change impact on Livestock -- 4. Impact of climate change on livestock production and reproduction -- 5. Thermal stress alters post-absorptive metabolism during pre- and postnatal development -- 6. Climate change and water availability for livestock: Impact on both quality and quantity -- 7. Impact of climate change on forage availability for livestock -- 8. Impact of climate change on livestock disease occurrences -- 9. Adaptive mechanisms of livestock to changing climate -- Part 3: Livestock role in climate change -- 10. Global Warming: Role of Livestock -- 11. Methane emission from enteric fermentation: Methanogenesis and Fermentation -- 12. Enteric Methane Emission under Different Feeding System -- 13. Estimation methodologies for enteric methane emission in ruminants -- 14. Metagenomic approaches in understanding the rumen function and establishing the rumen microbial diversity -- 15. Opportunities and Challenges for Carbon Trading from Livestock Sector -- Part 4: Methane mitigation strategies in livestock -- 16. Manipulation of rumen microbial eco-system for reducing enteric methane emission in livestock -- 17. Reducing enteric methane emission using plant secondary metabolites -- 18. Ration balancing – A practical approach for reducing methanogenesis in tropical feeding systems -- 19. Alternate H2 Sink for Reducing Rumen Methanogenesis -- 20. GHG emission from livestock manure and its mitigation strategies -- 21. Modelling of GHGs in livestock farms and its significance -- Part 5: Adaptationstrategies to improve livestock production under changing climate -- 22. Overview on adaptation, mitigation and amelioration strategies to improve livestock production under the changing climatic scenario -- 23. Shelter design for different livestock from climate change perspective -- 24. Strategies to improve livestock reproduction under the changing climate scenario -- 25. Strategies to improve livestock genetic resources to counter climate change impact -- Part 6: Research and Development Priorities -- 26. Climate change impact on livestock sector- Visioning 2025 -- 27. Conclusions and Researchable Priorities.

#### Sommario/riassunto

This volume addresses in detail both livestock's role in climate change and the impacts of climate change on livestock production and reproduction. Apart from these cardinal principles of climate change and livestock production, this volume also examines the various strategies used to mitigate livestock-related GHG emissions, and those which can reduce the impacts of climate change on livestock production and reproduction. Presenting information and case studies collected and analyzed by professionals working in diversified ecological zones, the book explores the influence of climate change on livestock production across the globe. The most significant feature of this book is that it addresses in detail the different adaptation strategies and identifies targets for different stakeholders in connection with climate change and livestock production. Further, it puts forward development plans that will allow the livestock industries to cope with current climate changes, and strategies that will mitigate the effects by 2025. Lastly, it provides researchers and policymakers several researchable priorities to help develop economically viable solutions for livestock production with less GHG emissions, promoting a cleaner environment in which human beings and livestock can live in harmony without adverse effects on productivity. Given that livestock production systems are sensitive to climate change, and at the same are themselves a contributor to the phenomenon, climate change has the

potential to pose an increasingly formidable challenge to the development of the livestock sector. However, there is a dearth of scientific information on adapting livestock production to the changing climate; as such, well-founded reference material on sustaining livestock production systems under the changing climate scenarios in different agro-ecological zones of the world is essential. By methodically and extensively addressing all aspects of climate change and livestock production, this volume offers a valuable tool for understanding the hidden intricacies of climatic stress and its influence on livestock production.

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