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Nota di contenuto	Part (I) Introduction to river hazards and their management: Chapter 1. Natural River Hazards: Their Impacts and Mitigation Techniques -- Chapter 2. Assessment of sediment hazard and associated measurement -- Chapter 3. Modelling approach to study the riverine flood hazard of lower Damodar river -- Chapter 4. Field measurement of accumulated surface water and infiltration depth in a flood-prone Langol catchment of Manipur valley region -- Chapter 5. Soil erosion analysis with respect to land use / land cover change in Godavari basin -- Part (II) Stability of Hydraulic Structures and Sediment Transport: Chapter 6. Stability of hydraulic structures against erosion and scour due to water jets -- Chapter 7. Stabilization of Manmade Embankments at Indian Sundarban Estuary through Turbulence Control at Flow-Sediment Interface: Field Survey and Flume Experimentation -- Chapter 8. A Review of Sedimentation on Different Types of Weirs -- Chapter 9. A Review on Parametric Studies of Piano Key Weir -- Chapter 10 Influence of boundary condition on the modified 2D shallow water model near the flow-structure interaction zone: a case study in Brahmaputra River -- Chapter 11. A Review on Estimation Methods of Scour Depth around Bridge Pier -- Chapter 12. Estimation of Shear

force Distribution in Two-stage open channel using SVM and ANFIS -- Chapter 13. Sediment transport modelling through machine learning methods: Review of current challenges and strategies -- Chapter 14. Impact of Anthropocene on the fluvial sediment supply: The Mahanadi River basin perspective -- Chapter 15. Assessment of sediment hazards by bed level variations around the bridge pier -- Chapter 16. Equation development for equilibrium bed load -- Part (III) Hydrological hazards and ecological restoration: Chapter 17. Flood mitigation with river restoration using Porcupine systems -- Chapter 18. Flood prioritisation of basins based on geomorphometric properties using Morphometric analysis and Principal component analysis: A casestudy of the Maner River basin -- Chapter 19. Flood modelling of Krishna river at Sangli using HEC-RAS -- Chapter 20. Development of Machine Learning based Flood Prediction Model for Godavari River Basin -- Chapter 21. Field study on soil organic matter content in inundation areas of Langol catchment by loss- on-ignition" method -- Chapter 22. Agricultural Drought Assessment using Satellite based Surface Soil Moisture Estimate -- Chapter 23. A Review on Hydrodynamics of Vegetated Streams -- Chapter 24. Analysis of Stormwater Drainage Network of the Central Zone in the Surat City by Using SWMM 5.1 Software -- Chapter 25. Review of state-of-the-art research on river hydrological hazards, restoration and management -- Chapter 26. Erosion Susceptibility Mapping based on Hypsometric Analysis using Remote Sensing and Geographical Information System Techniques -- Part (IV) Climate change and Global warming issues: Chapter 27. Climate Change Implication and Adaptation for River systems -- Chapter 28. Non-parametric approaches to identify rainfall pattern in semi-arid regions: Ranipet, Vellore, and Tirupathur districts, Tamil Nadu, India -- Chapter 29. Decadal-based analysis of hydrological components in the Kesinga sub-catchment in Mahanadi Basin: An assessment of climate variability impact -- Chapter 30. Prediction of Future Rainfall in the Upper Godavari Basin Using Statistical Downscaling Model -- Chapter 31. Projecting Future Maximum Temperature Changes in River Ganges Basin using Observations and Statistical Downscaling Model (SDSM) -- Chapter 32. Trend Assessment of Rainfall over Mumbai and Pune Cities -- Chapter 33. Evaluation of Potential lakes Susceptible to GLOF using Multi-Criteria Assessment in Jhelum Sub-basin of Indus Basin.

Sommario/riassunto

This edited book covers all aspects of River related disasters, challenges, and opportunities. Step-by-step descriptions are provided of river dynamics and associated hazards, and their applications in hazard assessments, accompanied by several experimental, filed and numerical studies. In addition, a systematic table of content is given to aid in identifying River hazards challenges and opportunities. Essential information is provided on River dynamics, hydrological processes and climate change issues, and an individual chapter is devoted to ecological restoration and river hazard management. Further topics include the stability of hydraulic structures, sediment transport, and debris flow in the hilly streams. This book will provide students, researchers, scientists, water resources managers with a comprehensive overview of the River dynamics and flood hazards in various sectors of water-related disasters and will enable them to explore the scope of application of the computational techniques and will enable them to explore the scope of River related disasters, allied branches and their field-specific problems. Professionals and policymakers may also explore the implementation of these approaches in their workplace to tackle complex river dynamics and hydrological phenomena occurring in their study area.