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Nota di contenuto	General Introduction -- Physical Geography of Abbay Basin -- The Geology of Abbay Basin -- The Geomorphology of Abbay Basin -- Remote sensing for River Basin Management -- Human and Social Geography of Abbay Basin -- Industrial Development and Manufacturing -- Urban Geography of the Basin -- Agriculture -- Sustainable Tourism Development and Management in the Basin -- Soils of Abbay Basin -- Basin Hydrology -- Surface water Hydrology -- Hydrology of Lake Tana Basin -- Groundwater Hydrology -- Forest Resources -- Monitoring and Mapping of Earthquake and Landslides -- Monitoring and Mapping of Flood Risk and Hazard -- Monitoring of Drought Events in the Abbay Basin -- Land Degradation -- Land-Use and Land-Cover Science and Change Analysis -- Contemporary Climate

Change Issues in the Abbay Basin -- Features and Hydrology of GERD -- National Development Implications of the Grand Ethiopian Renaissance Dam -- Hydropower Development Agenda -- Irrigation Development Agenda -- Water Resource Management and Development in the 21st century and beyond -- The Geopolitics and Legal Dimension of Ethiopia’s Right to Utilize Abbay River -- Integrated Natural Resources Management: needs and efforts -- Integrated Basin Management (IBM) -- Soil and Water Conservation and the Green Legacy -- Lessons learned from over 50 years of Watershed Management -- Crop area mapping and Yield Estimation -- Climatological and Hydrological analysis algorithms, tools and techniques -- Tools, Techniques and Algorithms of Retrieving Soil Moisture -- Tools, Techniques and Algorithms of Digital Soil Mapping -- Tools and Techniques of Soil Organic Carbon Dynamics -- Space and time specific fertilizer optimization techniques and tools -- Text mining and analytics to guide decisions in Abbay basin -- Future Research, Planning and Management Directions.

Sommario/riassunto

The book focuses on the Abbay Basin biophysical setting, the status of natural resources and degradation processes, agricultural practices, environmental resource conservation efforts, and the role of Earth observation and geospatial technologies in monitoring and planning for the wise utilization of natural resources under severe land resource degradation and climate change. It provides a collection of techniques and syntheses from the perspectives of geospatial science and technology application dimensions as well as legal and sociopolitical circumstances. It utilizes comprehensive data, algorithms, methods, and tools to produce and disseminate high-quality information for the Abbay Basin. It also produces empirical data and knowledge on what has been done thus far regarding the application of EO data and geospatial technologies for sustainable utilization of natural resources in the Abbay Basin and synthesizes previous studies to develop strong and consolidated information on the basin. The book will also have distinct outlooks on the purpose and contribution of satellite imagery and geospatial data as well as improved analytics for basin-wide resource management.