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Nota di contenuto	Chapter 1. Introduction to Soil Erosion Study -- Chapter 2. Geo-physical Settings of South Bengal -- Chapter 3. Morphotectonics Characteristics and its control on Soil Erosion -- Chapter 4. Estimation of Surface Runoff -- Chapter 5. Soil Loss Estimation using different Empirical and Semi-empirical Models -- Chapter 6. Potential Sediment Yield Estimation using Machine Learning, Artificial Intelligence Techniques and GIS -- Chapter 7. Impact of Climate and LULC Change on Soil Erosion -- Chapter 8. Socio-political policy implication.
Sommario/riassunto	This work focuses on the potential impact of climate change on soil

erosion in a monsoon-dominated sub-tropical region. Water-induced soil erosion due to extreme rainfall during the monsoon period is a major problem worldwide, from different environmental and socio-economic perspectives. This study region covered (South Bengal) is one of the fertile agricultural belts that produces a good amount of produce and contributes to the country's GDP. However, the rate of agricultural output has decreased rapidly in recent times due to a decline in soil fertility. The monsoon-dominated sub-tropical region has unique characteristics in terms of seasonal temperature fluctuations and the availability of rainfall events. The sub-tropical region is densely populated, with the majority of the population relying on rain-fed agricultural production systems. The declining rate of agricultural production has also established that soil fertility is declining and soil erosion is increasing. Numerous studies show that soil erosion is the major cause of the region's rapidly increasing trend of land degradation. A homeostatic mechanism cannot replace soil erosion, and a gap arises between soil erosion and regolith formation. Extreme changes in land use and land cover, population growth and the lacking support for traditional agricultural practices and management practices can accelerate the rate of soil erosion and its associated reservoir sedimentation in most countries of the tropical and sub-tropical environment. Quantitative information with maximum possible accuracy through validation regarding soil loss can be an essential part of the appropriate and sustainable soil and water conservation planning. The precise aspects of modern day management strategies are soil erosion susceptibility mapping using empirical and semi-empirical models in a GIS platform or the use of probability statistics. The main objective of this work is to propose the most suitable development strategies considering the amount of soil erosion for the present and future periods. Extensive field research has been done to identify the support practice factor that the local stakeholders adopt in this region. .

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