Morphometric Analysis And Prioritization Of Watersheds For

This volume synthesizes critical environmental challenges of dynamic earth and human environment systems in South Asia emphasizing geographical dimensions. It deals with spaceborne monitoring, climate, ecohydrology, forests and biodiversity, land-use and land-cover change (LUCC), natural hazards, and disasters in order to contribute towards a sustainable future. The contributions range from traditional field techniques to the use of remote sensing and geographic information systems. The book integrates environmental attributes relating the past, present, and future of South Asia broadly based on biophysical and human dimensions in spatio-temporal perspectives. The monitoring of natural hazards and climate issues is considered a vital component in the context of environmental geography, especially in observation and understanding of climate and water-induced disasters. It is important to communicate the advances in geoscience techniques to increase the resilience of the vulnerable society of South Asia and to promote livelihood security. The sustainability of South Asia depends strongly on the earth environment, and thus the development of geo-environmental monitoring is critical for a better understanding of our living environment. The aim of the book is to present dynamic aspects of environmental geography to contribute to future earth initiatives in South Asia.

This book discusses various issues relating to water resources, climate change and sustainable development. Water is the main driving force behind three major pillars of sustainable development: environmental, social and economic. As stated in the United Nations Sustainable Development Goals, development of these pillars rests on the availability and management of resources to fulfill the demand for water. By identifying the various challenges in the context of water resources and climate change, the book offers insights into achieving a better and more sustainable future. It provides a unique forum for practitioners and academics to exchange ideas on emerging issues, approaches, and practices in the area of water resources, climate change, and sustainability, while also presenting valuable information for policymakers on the changing contours of water management and climate change mitigation. As such it is a useful resource for decision-makers at the local as well as the global level.

This book explores the latest advances in our understanding of the evolution of the Ganga-Brahmaputra delta, examining the Damodar basin, Bhagirathi-Hooghly basin and Jalangi basin from historical, quantitative and applied geomorphology perspectives. The evolution of the Ganga-Brahmaputra delta is highly complex and remains poorly understood. To address that gap, this edited volume presents 11 research papers: the first seven chapters focus on the pure geomorphology and geohydrology of the delta, while the remaining four examine

its applied geomorphological aspects. The book offers a valuable guide for geologists, geographers, hydrologists, landscape ecologists, environmentalists, engineers, planners and policy makers.

This book covers several themes related to forestry, agriculture, water, soil, urban, and atmospheric research. GIScience technology systems have increased in significance in recent decades and have the ability to acquire information at ground level with a higher spectral resolution using a field radio-spectrometer, which is a great improvement compared to other remote sensing systems. GIScience technology systems are widely used for solving and understanding the concept of forestry, crop, water resources, and related research themes. This book aims to advance the scientific understanding of GIScience technology and applications. The chapters present GIScience data integration with other sources such as LiDAR, Multi-spectral data and their applications in forestry, crop assessment, soil assessment, mineral mapping and related themes. The book will be of interest to geospatial experts, modellers, foresters, agricultural scientists, hyperspectral remote sensing and space community, ecologists and conservation communities, environmental consultants, big data compilers, and computing experts.

Agricultural Water Management: Theories and Practices advances the scientific understanding, development and application of agricultural water management through an integrated approach. This book presents a collection of recent developments and applications of agricultural water management from advanced sources, such as satellite, mesoscale and climate models that are integrated with conceptual modeling systems. Users will find sections on drought, irrigation scheduling, weather forecasting, climate change, precipitation forecasting, and more. By linking these systems, this book provides the first resource to promote the synergistic and multidisciplinary activities of scientists in hydro-meteorological and agricultural sciences. As agricultural water management has gained considerable momentum in recent decades among the earth and environmental science communities as they seek solutions and an understanding of the concepts integral to agricultural water management, this book is an ideal resource for study and reference. Presents translational insights into drought, irrigation scheduling, weather forecasting, climate change and precipitation forecasting Advances the scientific understanding, development and application of agricultural water management Integrates geo-spatial techniques, agriculture, remote sensing, sustainable water resource development, applications and other diverse areas within earth and environmental, meteorological and hydrological sciences

Lakes and wetland basins enjoy many imperative values for humans. They supply water for domestic and other uses; and they serve as habitats for important food species comprising various forms of aquatic life and supporting the earths biodiversity. The book has eminent itself by incorporating the standalone research papers focusing on the variables in lakes and wetlands with

the wide coverage from fundamental features of all aquatic systems to the details of processes and applications. The book will supports the readers to acquire an understanding regarding morphometry, water quality and hydrology, sediment characteristics, aquatic eco system, phytoplanktons, Ostracod and Foraminifers, heavy metals in mangroves and pollution threat to the coasts. The book includes the recent works and the conclusions are supported by authors original data at the end of each part. These features makes this book fascinating and requisite to graduates, researchers and decision makers of the wetland resources in different parts of the World.

Morphometry deals with the management and mathematical analysis of the configuration of the earth's surface and of the slopes and dimensions of its landforms. It is used to determine the geometry of the watershed especially among its stream network. Morphometry gives a little idea of erodibility of soil. Watershed characteristics play a vital role on the hydrologic performance of watersheds. Hence, a number of parameters, which signify the watershed characteristics, are evaluated from the topographical maps. Various morphometric parameters are computed to evaluate the geomorphic stage of the basin, which is the indication of intensity of erosion from the basin.In the case of shortage of hydrologic data, morphometric parameters play an important role in predicting the response of the catchment. Hypsometric analysis aims at developing a relationship between horizontal cross section area of the subwatershed and its elevation in a dimensionless form. For determination of hydrologic variables, such as precipitation, evaporation etc. with respect to the altitude is useful by the hypsometric curve.

This textbook aims to develop a scientific knowledge base on spatial information technology to communicate the United Nations' Sustainable Development Goals (SDGs) among students, researchers, professionals and laymen. The book improves understanding of the spatial database and explains how to extract information from this for planning purposes. To enhance the knowledge of geoscientists and environmentalists, the book describes the basic fundamental concepts to advance techniques for spatial data management and analysis and discusses the methodology. The Geographic Information System (GIS), remote sensing and Global Positioning System (GPS) are presented in an integrated manner for the planning of resources and infrastructure. The management of these systems is discussed in a very lucid way to develop the reader's skills. The proper procedure for map making and spatial analysis are included along with case studies to the reader. Where the first part of the book discusses the conceptual background, the second part deals with case studies using these applications in different disciplines. The presented case studies include land use, agriculture, flood, watershed characterization and infrastructure assessment for the Sustainable Development Goals.

This book provides an overview of the ecological indicators of landscape dynamics in the context of geographical landscape integration. Landscape

dynamics depicts every change that occurs in the physical, biological, and cognitive assets of a landscape. To understand and interpret the complex physical, biological, and cognitive phenomena of landscapes, it is necessary to operate conceptually and practically on a broad range of spatial and temporal scales. Rapid land use changes have become a concern to environmentalists and planners because of their impacts on the natural ecosystem, which further determines socioeconomic dynamics. In this regard, the book discusses case studies that share new insights into how landscape patterns and processes impact small creatures, and how small creatures in turn influence landscape structure and composition. In turn, the relevant aspects of land use and land cover dynamics are covered, and the multi-faceted relationship between the substrata and ecological community is highlighted. The book is unique in its focus on the application of spatial informatics such as automatic building extraction from high-resolution imagery; a soil resource inventory for meeting the challenges of land degradation; hydrological modeling; the temporal variation analysis of glacier area and the identification and mapping of glacial lakes; morphometric analysis of river basins; and the monitoring and modeling of urban sprawl, among other features.

This book offers a unique collection of inter- and multidisciplinary studies on river systems. Rivers have been the prime source of sustenance since the advent of civilization and river systems often form the basis for agriculture, transport, water, and land for domestic, commercial, and industrial activities, fostering economic prosperity. A river basin is a basic geographical and climatological unit within which the vagaries of natural processes act and manifest themselves at different spatio-temporal scales. Even if compared side-by-side, no two river basins respond to natural processes in the same way and thus, it has long been recognized that each river basin is unique. Hence, any developmental activity or conservation effort has to be designed and implemented to match each unique river basin. With the burgeoning population and increasing dependency on natural resources, understanding and maintaining river systems has become increasingly important. This book provides a varied reference work on and unprecedented guidelines for conducting and implementing research on river basins, and for managing their ecological development.

Water harvesting is gaining more and more recognition as a sustainable and resilient water supply options. It is economically viable, socially compatible and environmentally friendly. Water harvesting has proven to be a robust solution to overcome or reduce water shortages all over the world. It is important to understand how to apply this practice in a sustainable and effective way to make full use of its potential in a world increasingly threatened by water scarcity. The Handbook of Water Harvesting and Conservation: Basic Concepts and Fundamentals is the most comprehensive, up-to-date and applied handbook on water harvesting and conservation yet published. The book's 30 chapters -- written by 84 outstanding international experts from approximately 20 selected

countries faced by drought -- explore, critique and develop concepts and systems for water harvesting. The editors bring together many perspectives into a synthesis that is both academically based and practical in its potential applications. The Handbook of Water Harvesting and Conservation: Basic Concepts and Fundamentals is an important tool for education, research and technical works in the areas of soil, water and watershed management and is highly useful for drought strategy planning, flood management and developing techniques to adapt to climate change in urban, agricultural, forest and rangeland areas.

Applied Morphometry and Watershed Management Using RS, GIS and Multivariate Statistics(Case Studies)Scientific Research Publishing, Inc. USA Clear and effective instruction on MADM methods for students, researchers, and practitioners. A Handbook on Multi-Attribute Decision-Making Methods describes multi-attribute decision-making (MADM) methods and provides step-by-step guidelines for applying them. The authors describe the most important MADM methods and provide an assessment of their performance in solving problems across disciplines. After offering an overview of decision-making and its fundamental concepts, this book covers 20 leading MADM methods and contains an appendix on weight assignment methods. Chapters are arranged with optimal learning in mind, so you can easily engage with the content found in each chapter. Dedicated readers may go through the entire book to gain a deep understanding of MADM methods and their theoretical foundation, and others may choose to review only specific chapters. Each standalone chapter contains a brief description of prerequisite materials, methods, and mathematical concepts needed to cover its content, so you will not face any difficulty understanding single chapters. Each chapter: Describes, step-by-step, a specific MADM method, or in some cases a family of methods Contains a thorough literature review for each MADM method, supported with numerous examples of the method's implementation in various fields Provides a detailed yet concise description of each method's theoretical foundation Maps each method's philosophical basis to its corresponding mathematical framework Demonstrates how to implement each MADM method to real-world problems in a variety of disciplines In MADM methods, stakeholders' objectives are expressible through a set of often conflicting criteria, making this family of decision-making approaches relevant to a wide range of situations. A Handbook on Multi-Attribute Decision-Making Methods compiles and explains the most important methodologies in a clear and systematic manner, perfect for students and professionals whose work involves operations research and decision making.

The book will be an everlasting and invaluable reference for, academia, industry and planners specialized in georesouce and for those who need updated information and current research in the field. The book will also be equally useful for advance level students and research scholars throughout the world.

This book gathers the proceedings of the 1st Global Civil Engineering

Conference, GCEC 2017, held in Kuala Lumpur, Malaysia, on July 25–28, 2017. It highlights how state-of-the-art techniques and tools in various disciplines of Civil Engineering are being applied to solve real-world problems. The book presents interdisciplinary research, experimental and/or theoretical studies yielding new insights that will advance civil engineering methods. The scope of the book spans the following areas: Structural, Water Resources, Geotechnical, Construction, Transportation Engineering and Geospatial Engineering applications.

This book contains seven parts. The first part deals with some aspects of rainfall analysis, including rainfall probability distribution, local rainfall interception, and analysis for reservoir release. Part 2 is on evapotranspiration and discusses development of neural network models, errors, and sensitivity. Part 3 focuses on various aspects of urban runoff, including hydrologic impacts, storm water management, and drainage systems. Part 4 deals with soil erosion and sediment, covering mineralogical composition, geostatistical analysis, land use impacts, and land use mapping. Part 5 treats remote sensing and geographic information system (GIS) applications to different hydrologic problems. Watershed runoff and floods are discussed in Part 6, encompassing hydraulic, experimental, and theoretical aspects. Water modeling constitutes the concluding Part 7. Soil and Water Assessment Tool (SWAT), Xinanjiang, and Soil Conservation Service-Curve Number (SCS-CN) models are discussed. The book is of interest to researchers and practitioners in the field of water resources, hydrology, environmental resources, agricultural engineering, watershed management, earth sciences, as well as those engaged in natural resources planning and management. Graduate students and those wishing to conduct further research in water and environment and their development and management find the book to be of value.

Subject Headings -Geo-Physical Background of Ravi Basin In Himachal Pradesh -Morphometr?c Analys?s Of Rav? R?ver Bas?n In H?machal Pradesh -Soc?al Analys?s Of Rav? R?ver Bas?n In H?machal Pradesh

Geographic Information Science for Land Resource Management is a comprehensive book focusing on managing land resources using innovative techniques of spatial information sciences and satellite remote sensing. The enormous stress on the land resources over the years due to anthropogenic activities for commercialization and livelihood needs has increased manifold. The only solution to this problem lies in the stakeholders' awareness, which can only be attained through scientific means. The awareness is the basis of the sustainable development concept, which involves optimal management of natural resources, subject to the availability of reliable, accurate, and timely information from the global to local scales. GIScience consists of satellite remote sensing (RS), Geographical Information System (GIS), and Global Positioning System (GPS) technology that is nowadays a backbone of environmental protection, natural resource management, and sustainable development and planning. Being

a powerful and proficient tool for mapping, monitoring, modeling, and managing natural resources can help understand the earth's surface and its dynamics at different observational scales. Through the spatial understanding of land resources, policymakers can make prudent decisions to restore and conserve critically endangered resources, such as water bodies, lakes, rivers, air, forests, wildlife, biodiversity, etc. This innovative new volume contains chapters from eminent researchers and experts. The primary focus of this book is to replenish the gap in the available literature on the subject by bringing the concepts, theories, and experiences of the specialists and professionals in this field jointly. The editors have worked hard to get the best literature in this field in a book form to help the students, researchers, and policymakers develop a complete understanding of the land system's vulnerabilities and solutions.

This book examines in detail the health of India's Haora River, which is of vital importance as the lifeline of Agartala, the Capital City of Tripura. From its source in the Baramura Hills, the river debouches onto the rolling plains of Chandrasadhubari. Thousands of people between Chandrasadhubari and the boundary of Bangladesh have settled along the riverbanks and are directly dependent on the river. Since the 1970s the ever-growing population of the Haora River basin has been exerting tremendous pressure on the river. Several anthropogenic activities affect the river, increasing sedimentation and pollution, and are leading the Haora River toward its dying phase. This book presents the problems related to the overall health of the Haora River and discusses some proposals for restoring the ecological balance and geo-political stability of this strategically important part of the country.

This book offers the scientific basis for the ample evaluation of badland management in India and some surrounding regions. It examines the processes operating in the headwaters and main channels of ephemeral rivers in lateritic environments of India. In particular, the book covers a range of vital topics in the areas of gully erosion and water to soil erosion at lateritic uplands regions of India and other regions in Asia. It explores the probable gully erosion modeling through Remote Sensing & GIS Techniques. It is divided into three units. Unit I deals with the introduction of badland, types of badland and the process of badland formation. Unit II is devoted to a description of quantitative measurements. Unit III deals with the control and management processes related to various issues from different regions. As such this book serves as a reference book for research activities in this area. It is an efficient guide for aspiring researchers in applied geography, explaining advanced techniques to help students recognize both simple and complex concepts.

International Journal of Advanced Remote Sensing and GIS (IJARSG, ISSN 2320 – 0243) is an open-access peer-reviewed scholarly journal publishes original research papers, reviews, case study, case reports, and methodology articles in all aspects of Remote Sensing and GIS including associated fields. This Journal commits to working for quality and transparency in its publishing by

following standard Publication Ethics and Policies.

This book offers an overview of geospatial technologies in land resources mapping, monitoring and management. It consists of four main sections: geospatial technologies - principles and applications; geospatial technologies in land resources mapping; geospatial technologies in land resources monitoring; and geospatial technologies in land resources management. Each part is divided into detailed chapters that include illustrations and tables. The authors, from leading institutes, such as the ICAR-NBSS&LUP, IIT-B, NRSC, ICRISAT, share their experiences and offer case studies to provide advanced insights into the field. It is a valuable resource for the scientific and the teaching community, extension scientists at research institutes and agricultural universities/colleges as well as those involved in planning and managing land resources for sustainable agriculture and livelihood security.

"Applied Morphometry and Watershed Management" book is designed to introduce the recent developments related to applied morphometric studies of drainage basins. Applications of drainage basin morphometric analysis cover several topics of research such as: 1) Prioritization of sub-watersheds for soil and water conservation; 2) Surface water harvesting; 3) Assessment of groundwater potential and predicting of groundwater movement; 4) Geo-hazard assessment (i.e., soil erosion and sediment yield modeling, landslide susceptibility mapping; flashflood hazard and flood management; 5) The impact of Quaternary tectonics on structure and drainage network distortions.

Land represents an important resource for the economic life of a majority of people in the world. The way people handle and use land resources impacts their social and economic well-being as well as the sustained quality of land resources. Land use planning is also integral to water resources development and management for agriculture, industry, drinking water, and power generation. This valuable work brings to the forefront the state of practice of land use planning in India, highlighting governmental programs and research with wide-ranging chapters on important topics. Covering various agro-ecosystem, including irrigated, rainfed, coastal, semi-arid, arid (drylands), and hill and mountain (temperate) regions, this volume discusses a variety of issues related to sustainable agriculture and rural development. Chapters address the following questions: •What are the sources, scales, and quality of land resources and land use data for efficient planning • Which are the agroecological systems hot spots that are have been degraded? How can these areas be rejuvenated in terms of quality? • What should be the unit of planning for a holistic approach for the conservation and efficient use of natural resources at different administrative levels and domains? • What are the roles of state land use boards and district planning committees? • How can various programs be integrated and implemented by central and state agencies? • What are the technologies, new policies, and support systems required to address sustainable land use? • What are the legal issues? • What should be the role of communities in planning for

poverty alleviation and integrated planning for sustainable agriculture based livelihoods? • What is the role GIS in sustainable agriculture and rural development? With high population growth, endemic poverty, and weak existing institutional capacity for land management, India (and other regions of the world) require strong scientific and strategically important land use policies and methods for sustainable development. This book helps to show the way. This volume is being published in association with the Centre for Agrarian Studies and Disaster Mitigation of the National Institute of Rural Development and Panchayati Raj (NIRD and PR).

This book discusses various statistical models and their implications for developing landslide susceptibility and risk zonation maps. It also presents a range of statistical techniques, i.e. bivariate and multivariate statistical models and machine learning models, as well as multi-criteria evaluation, pseudo-quantitative and probabilistic approaches. As such, it provides methods and techniques for RS & GIS-based models in spatial distribution for all those engaged in the preparation and development of projects, research, training courses and postgraduate studies. Further, the book offers a valuable resource for students using RS & GIS techniques in their studies.

The depletion of land resources is one of the greatest challenges for mankind in this millennium. Shrinking land resources, weather aberrations, deterioration of land quality, and the globalization and liberalization of market economies have become intertwined to influence the sustainable management of land resources and land use plans. This important volume, Sustainable Management of Land Resources: An Indian Perspective, addresses these challenges. This comprehensive volume, covering important research, much of it gathered with the use of new technology, tools, and applications, is organized into four sections: (add bullets) land resource inventory and characterization geospatial technologies in land resource mapping and management soil nutrient status and management land use planning and livelihood security The volume looks at how scientists translate their knowledge and experience in sustainable land resources and management into implementable policy decisions, with a particular focus on India. Since India is an agrarian economy, the land resources assume a very critical role affecting the livelihood of a vast majority of populace in the country. The information gathered—and the methods by which it is gathered—is applicable globally. This comprehensive publication will be highly useful for the researchers, academicians, extension workers, policymakers, planners, officials of land resources survey, planning and management institutions/agencies/departments, and others.

This book gathers the latest research, innovations, and applications in the field of civil engineering, as presented by leading national and international academics, researchers, engineers, and postgraduate students at the AWAM International Conference on Civil Engineering 2019 (AICCE'19), held in Penang, Malaysia on August 21-22, 2019. The book covers highly diverse topics in the main fields of

civil engineering, including structural and earthquake engineering, environmental engineering, geotechnical engineering, highway and transportation engineering, water resources engineering, and geomatic and construction management. In line with the conference theme, "Transforming the Nation for a Sustainable Tomorrow", which relates to the United Nations' 17 Global Goals for Sustainable Development, it highlights important elements in the planning and development stages to establish design standards beneficial to the environment and its surroundings. The contributions introduce numerous exciting ideas that spur novel research directions and foster multidisciplinary collaborations between various specialists in the field of civil engineering.

The natural disasters are the killer agents which can/can't be predicted even though we have modern technology. Every year, in one place or another, disasters striking which is devastating the area and surroundings, leading to ecological disruption besides huge loss of life and property. India is vulnerable to cyclones, landslides/avalanches, earthquakes, floods, droughts, forest fires, epidemics, etc. The 5700-km long coast of India, with its dense population is vulnerable to cyclones/low depressions, tsunamis, etc. The 2400-km long rugged Himalayan terrain is vulnerable to landslides, avalanches and earthquakes. India is not only vulnerable to natural disasters, it is also experiencing industrial accidents. The Bhopal Gas tragedy is one of the major man-made disasters in the world. The state of Andhra Pradesh has 970-km long coastline with two major rivers, etc. The conference is conducted in Visakhapatnam, is famous for industries and tourism. Recently, several industrial accidents took place, besides major natural disasters like Hud-Hud, etc. Disaster management shall be implemented from the grass root level in vulnerable areas to improve the capacity building, so as to minimize the losses. The capacity building coupled with technology results in reduction of loss of life and property.

This exciting new volume will provide a comprehensive overview of the applications of geoinformatics technology for engineers, scientists, and students to become more productive, more aware, and more responsive to global climate change issues and how to manage sustainable development of Earth's resources. Over the last few years, the stress on natural resources has increased enormously due to anthropogenic activities especially through urbanization and industrialization processes. Sustainable development while protecting the Earth's environment involves the best possible management of natural resources, subject to the availability of reliable, accurate and timely information on regional and global scales. There is an increasing demand for an interdisciplinary approach and sound knowledge on each specific resource, as well as on the ecological and socio-economic perspectives related to their use. Geoinformatics, including Remote Sensing (RS), Geographical Information System (GIS), and Global Positioning System (GPS), is a groundbreaking and advanced technology for acquiring information required for natural resource management and addressing the concerns related to sustainable development. It offers a powerful

and proficient tool for mapping, monitoring, modeling, and management of natural resources. There is, however, a lack of studies in understanding the core science and research elements of geoinformatics, as well as larger issues of scaling to use geoinformatics in sustainable development and management practices of natural resources. There is also a fundamental gap between the theoretical concepts and the operational use of these advance techniques. Sustainable Development Practices Using Geoinformatics, written by well-known academicians, experts and researchers provides answers to these problems, offering the engineer, scientist, or student the most thorough, comprehensive, and practical coverage of this subject available today, a must-have for any library.

The wide range of challenges in studying Earth system dynamics due to uncertainties in climate change and complex interference from human activities is creating difficulties in managing land and water resources and ensuring their sustainable use. Mapping, Monitoring, and Modeling Land and Water Resources brings together real-world case studies accurately surveyed and assessed through spatial modeling. The book focuses on the effectiveness of combining remote sensing, geographic information systems, and R. The use of open source software for different spatial modeling cases in various fields, along with the use of remote sensing and geographic information systems, will aid researchers, students, and practitioners to understand better the phenomena and the predictions by future analyses for problem-solving and decision-making.

Remote Sensing Applications in Environmental Research is the basis for advanced Earth Observation (EO) datasets used in environmental monitoring and research. Now that there are a number of satellites in orbit, EO has become imperative in today's sciences, weather and natural disaster prediction. This highly interdisciplinary reference work brings together diverse studies on remote sensing and GIS, from a theoretical background to its applications, represented through various case studies and the findings of new models. The book offers a comprehensive range of contributions by well-known scientists from around the world and opens a new window for students in presenting interdisciplinary and methodological resources on the latest research. It explores various key aspects and offers state-of-the-art research in a simplified form, describing remote sensing and GIS studies for those who are new to the field, as well as for established researchers.

A comprehensive guide to managing and mitigating natural disasters Recent years have seen a surge in the number, frequency, and severity of natural disasters, with further increases expected as the climate continues to change. However, advanced computational and geospatial technologies have enabled the development of sophisticated early warning systems and techniques to predict, manage, and mitigate disasters.Techniques for Disaster Risk Management and Mitigation explores different approaches to forecasting disasters and provides guidance on mitigation and adaptation strategies. Volume highlights include:

Review of current and emerging technologies for disaster prediction Different approaches to risk management and mitigation Strategies for implementing disaster plans and infrastructure improvements Guidance on integrating artificial intelligence with GIS and earth observation data Examination of the regional and global impacts of disasters under climate variability

The Proceeding contains the following sections: i) Groundwater Exploration and Exploitation; (ii) RS&GIS Applications in Water Resources; (iii) Watershed Management: Hydrological, Socio-Economic and Cultural Models; (iv) Water and Wastewater Treatment Technologies; (v) Rainwater Harvesting and Rural and Urban Water Supplies; (vi) Floods, Reservoir Sedimentation and Seawater Intrusion; (vii) Water Quality, Pollution and Environment; (viii) Irrigation Management; (ix) Water Logging and Water Productivity in Agriculture; (x) Groundwater Quality; (xi) Hydrologic Parameter Estimation and Modelling; (xii) Climate Change, Water, Food and Environmental Security; (xiii) Groundwater Recharge and Modelling; (xiv) Computational Methods in Hydrology; (xv) Soil and Water Conservation Technologies.

This book comprises select papers presented at the International Conference on Trends and Recent Advances in Civil Engineering (TRACE 2018). The book covers inter-disciplinary research and applications in integrated water resource management, river ecology, irrigation system, water pollution and treatment, hydraulic structure and hydro-informatics. The topics on water resource management include technological intervention and solution for climate change impacts on water resources, water security, clean water to all, sustainable water reuse, flood risk assessment, interlinking of rivers and hydro policy. The contents of this book will be useful to researchers and professionals working in the field of water resource management and related policy making.

Spatial Modeling in GIS and R for Earth and Environmental Sciences offers an integrated approach to spatial modelling using both GIS and R. Given the importance of Geographical Information Systems and geostatistics across a variety of applications in Earth and Environmental Science, a clear link between GIS and open source software is essential for the study of spatial objects or phenomena that occur in the real world and facilitate problem-solving. Organized into clear sections on applications and using case studies, the book helps researchers to more quickly understand GIS data and formulate more complex conclusions. The book is the first reference to provide methods and applications for combining the use of R and GIS in modeling spatial processes. It is an essential tool for students and researchers in earth and environmental science, especially those looking to better utilize GIS and spatial modeling. Offers a clear, interdisciplinary guide to serve researchers in a variety of fields, including hazards, land surveying, remote sensing, cartography, geophysics, geology, natural resources, environment and geography Provides an overview, methods and case studies for each application Expresses concepts and methods at an appropriate level for both students and new users to learn by example

This book discusses the development of useful models and their applications in soil and water engineering. It covers various modeling methods, including groundwater recharge estimation, rainfall-runoff modeling using artificial neural networks, development and application of a water balance model and a HYDRUS-2D model for cropped fields, a multi-model approach for stream flow simulation, multi-criteria analysis for construction of groundwater structures in hard rock terrains, hydrologic modeling of watersheds using remote sensing, and GIS and AGNPS.

Copyright: bc407bb64b7514b969f46f88215ebd77