

1. Record Nr.	UNINA9910595045103321
Titolo	Assessing, mapping and modelling of mangrove ecosystem services in the Asia-Pacific Region // Rajarshi Dasgupta, Shizuka Hashimoto and Osamu Saito, editors
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore Pte Ltd., , [2022] ©2022
ISBN	981-19-2738-3
Descrizione fisica	1 online resource (295 pages)
Collana	Science for sustainable societies
Disciplina	574.526325
Soggetti	Mangrove ecology Pacific Area
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Intro -- Preface -- Contents -- Editors and Contributors -- Chapter 1: Envisioning the Future of Mangroves Through Mapping and Modeling of Mangrove Ecosystem Services -- 1.1 Introduction -- 1.2 Drivers of Mangrove Loss in Asia and Pacific -- 1.3 Future Uncertainties in the Delivery of Mangrove Ecosystem Services -- 1.4 Taking a Scenario and Modeling Approach to Understand Mangrove Sustainability -- 1.5 About the Book -- References -- Part I: Trend Analysis, Scenario Building and Identification of the Influential Drivers of Change -- Chapter 2: Monitoring Spatial and Temporal Distribution, Pattern, and Trend Prediction of Coastal Mangroves in Pakistan Using ... -- 2.1 Introduction -- 2.2 The Study Area -- 2.3 Methods and Material -- 2.3.1 Preprocessing, Supervised Classification, and NDVI -- 2.3.2 Tools and Techniques -- 2.4 Spatiotemporal Distribution of Coastal Mangroves -- 2.5 Spatial and Temporal Distribution of Mangroves Using NDVI -- 2.6 Spatiotemporal Analysis of Mangroves -- 2.6.1 Microlevel Analysis of Coastal Mangroves in Sindh Province -- 2.6.2 Microlevel Analysis of Coastal Mangroves in Baluchistan Province -- 2.7 Trend Prediction of Coastal Mangroves -- 2.8 Conclusion -- References -- Chapter 3: Assessment of Mangrove Colonization of Aquaculture Ponds Through Satellite Image Analysis: Implications for Mangrov... -- 3.1 Introduction -- 3.2 Methods -- 3.2.1 Study Site -- 3.2.2 Data

Preprocessing -- 3.2.3 Supervised Classification -- 3.3 Results -- 3.4 Discussion -- 3.4.1 Mangrove Regeneration -- 3.5 Impact of Policies on Mangrove Rehabilitation -- 3.6 Implications for Mangrove Management and Restoration -- 3.7 Research/Management Gaps and Recommendations -- References -- Chapter 4: Ecosystem Services and Their Future Scenarios Centering on Mangrove Ecosystem in Ishigaki Island, Japan -- 4.1 Introduction. 4.2 Mangroves and Other Land Use and Land Cover on Ishigaki Island -- 4.2.1 Mangrove Communities -- 4.2.1.1 Miyara River -- 4.2.1.2 Nagura Anparu -- 4.2.1.3 Fukido River -- 4.2.2 Mangrove Ecosystem Services -- 4.3 Historical Changes in Mangroves and Their Drivers -- 4.3.1 Direct Drivers -- 4.3.2 Indirect Drivers -- 4.4 Future Scenarios -- 4.4.1 Hypothetical Scenarios for Ishigaki Mangroves Drawing on Existing Scenarios -- 4.4.2 Mapping Relevant Policies in the Hypothetical Scenario Space -- 4.4.3 Scenarios and Key Policy Metrics for Ishigaki Island -- 4.5 Conclusion -- References -- Chapter 5: A Participatory Stakeholder-Based Approach to Assess the Drivers and Challenges of Mangrove Loss in Kochi, Kerala, ... -- 5.1 Introduction -- 5.2 Study Area -- 5.3 Methodology -- 5.4 Result and Discussion -- 5.4.1 Population Growth -- 5.4.2 Shrimp Farming/Aquaculture -- 5.4.3 Deforestation and Land-Use Change to Build up Expansion -- 5.4.4 Urbanization -- 5.4.5 Coastal Industrial Projects -- 5.4.6 Dredging and Port -- 5.4.7 Tourism, Plastic Pollution, and Solid and Hazardous Waste Management -- 5.4.8 Construction of Roads and Waterways -- 5.4.9 Encroachment and Coastal Policies -- 5.4.10 Natural Disaster Climate Change and Sea-Level Rise -- 5.4.11 Eutrophication and Coastal Acidification -- 5.4.12 Lack of Awareness -- 5.4.13 Introduction of New Species -- 5.5 Conclusions -- Presentation of Annexure -- References -- Chapter 6: Understanding Potential Drivers of Mangrove Loss in Bhitarkanika and Mahanadi Delta, India, to Enhance Effective Re... -- 6.1 Introduction -- 6.2 Study Area -- 6.3 Methodology -- 6.4 Drivers of Mangrove Loss in Bhitarkanika and Mahanadi Delta -- 6.4.1 Demographic -- 6.4.2 Local Socioeconomics -- 6.4.3 Governance -- 6.4.4 Land-Use Change Due to Buildup Expansion -- 6.4.5 Aquaculture -- 6.4.6 Deforestation and Degradation. 6.4.7 Agriculture Intensification -- 6.4.8 Port, Jetty, and Coastal Industrial Projects -- 6.4.9 Road and Waterways -- 6.4.10 Encroachment -- 6.4.11 Extreme Climate Events (Ex., Tsunami, Cyclones, and Floods) -- 6.4.12 Sea-Level Rise -- 6.4.13 Tourism, Pollution, Solid, and Hazardous Waste -- 6.4.14 Eutrophication and Ocean Acidification -- 6.4.15 Invasive Species and Insects Pests -- 6.4.16 Other Drivers -- 6.5 Endorsing Ecosystem Health Assessment -- 6.6 Conclusion -- References -- Part II: Assessing Mangrove Ecosystem Services -- Chapter 7: Advancement in Measurement and Estimation Methods of Blue Carbon Studies -- 7.1 Introduction -- 7.2 Organic Carbon in the Biomass -- 7.2.1 Mangrove -- 7.2.2 Seagrass -- 7.2.3 Saltmarshes -- 7.2.4 Macroalgae -- 7.2.5 Organic Carbon in the Detritus -- 7.3 Forms of Blue Carbon in Water -- 7.3.1 Particulate Organic Carbon (POC) -- 7.3.2 Dissolved Organic Carbon (DOC) -- 7.3.3 Dissolved Inorganic Carbon (DIC) -- 7.4 Carbon Sequestration in the Water Column -- 7.5 Soil Organic Carbon (SOC) and Soil CO₂ Efflux (SCE) -- 7.6 Determination of the Source of Blue Carbon -- 7.7 Lateral Flux of Blue Carbon -- 7.8 Conclusion -- References -- Chapter 8: Change Mapping of Aboveground Carbon Stocks and Ecosystem Services in the Mangrove Forest of Andaman Islands: Impl... -- 8.1 Introduction -- 8.2 Study Area -- 8.3 Methodology -- 8.3.1 Delineation of Mangrove Cover -- 8.3.2 Accuracy Assessment -- 8.3.3 Aboveground Biomass and Carbon Stock Calculation -- 8.4 Results --

8.4.1 Change in Mangrove Cover -- 8.5 Discussion -- 8.6 Policy Implications -- 8.7 Conclusion -- References -- Chapter 9: Depicting Mangrove's Potential as Blue Carbon Champion in Indonesia -- 9.1 Introduction -- 9.2 Research Goals -- 9.3 Data and Methods -- 9.4 Results and Discussion -- 9.4.1 Blue Carbon Adoption in Indonesia. 9.4.2 Actors and Messengers of Blue Carbon Initiative -- 9.4.3 The Blue Carbon Discourse in the Public Arena -- 9.5 Conclusion -- References -- Chapter 10: Eco-Engineering and Mangrove Restoration Methods to Stabilize Earthen Embankments and Establishing Bio-Shield Agai... -- 10.1 Introduction -- 10.2 Ecosystem Services Provided by Mangroves -- 10.3 Rationale Behind Using Mangrove as Disaster Bio-Shield -- 10.3.1 First Restoration Layer: *Avicennia marina* -- 10.3.2 Second Restoration Layer: *Ceriops* sp.-*Bruguiera* spp. -- 10.3.3 Third Layer: *Rhizophora mucronata* -- 10.3.4 Fourth Layer: *Sonneretia* sp. and *Excoecaria* sp. -- 10.3.5 Avoiding Introduction of Invasive or Exotic Species -- 10.4 Community Participation in Mangrove Restoration -- 10.5 Case Study -- 10.6 Conclusion -- References -- Chapter 11: Ecosystem Services of Urban Fringe Mangrove Forests: The Case of Tamsui River Estuary Mangrove Forest, Taiwan -- 11.1 Introduction -- 11.2 Study Area and Methods -- 11.2.1 Study Area -- 11.2.2 Research Methods -- 11.2.2.1 Analysis of Changes in Land Use -- 11.2.2.2 Ecosystem Service Evaluation -- 11.2.2.3 Hotspot/Cold Spot Analysis for Ecosystem Services -- 11.3 Results and Discussion -- 11.3.1 The Changes in Land Use -- 11.3.2 Changes in Ecosystem Services -- 11.3.3 Changes in Ecosystem Service Hotspots -- 11.4 Conclusion -- References -- Chapter 12: Diversity and Structural Characteristics of Mangrove Forests in the Southern District of Oriental Mindoro, Philipp... -- 12.1 Introduction -- 12.2 Materials and Methods -- 12.2.1 The Study Sites -- 12.2.2 Data Collection -- 12.2.3 Diversity Analysis -- 12.2.4 Species Similarities -- 12.2.5 Mangrove Structural Characteristics -- 12.3 Results and Discussion -- 12.3.1 Mangrove Composition Across Mangrove Sites -- 12.3.2 Species Diversity Across Mangrove Sites -- 12.4 Mangrove Structural Characteristics. 12.5 Discussion -- 12.6 Conclusion -- References -- Chapter 13: Cultural Ecosystem Services of Mangroves: A Review of Models and Methods -- 13.1 Introduction -- 13.2 Perception of Local Communities Across the World Toward Cultural Ecosystem Services Provided by Mangrove Forests -- 13.3 Assessment of Cultural Ecosystem Services -- 13.4 Uncertainties in Methods -- 13.5 Conclusion -- References -- Chapter 14: Capacity-Building Around Indigenous and Local Knowledge (ILK) Systems for Effective Climate Adaptation in the Low-... -- 14.1 Introduction -- 14.2 ILK in the Context of Increasing Climate Change Impacts in Low-Lying Coasts and Small Islands -- 14.3 Key Capacity Gaps for Applying ILKs for Climate Change Adaptation in Coasts and Small Islands -- 14.4 Need for a Sustained Approach of Capacity Building -- 14.5 Capacity Building Elements for the Application of ILK for Climate Change Adaptation -- 14.5.1 Knowledge System -- 14.5.2 Institutions and Processes -- 14.5.3 Communication -- 14.6 Conclusion and Recommendations -- References -- Chapter 15: Ecosystem Services and Well-Being in the Sundarbans of Bangladesh: A Multiple Evidence Base Trajectory -- 15.1 Introduction -- 15.2 Conceptualising Human-Nature Interdependence -- 15.3 Ecosystem Services (ES) and Well-Being -- 15.3.1 Current State of ES -- 15.3.2 Ecosystem Services, Multiple Values and Well-Being -- 15.3.3 Drivers of Changes -- 15.4 Traditional Resource Users and Well-Being -- 15.4.1 Corroborative Evidence -- 15.4.2 Impact of COVID-19 on Traditional Resource Users (TRUs) -- 15.5 Human-Nature Sociality and One Health Approach: A Transformational Pathway -- 15.6 Conclusions

-- References -- Chapter 16: Fostering Mangrove Ecosystem Services for a Resilient Future for the Asia-Pacific Region: A Knowledge Synthesis -- 16.1 Introduction -- 16.1.1 Mangroves in Contemporary Policy Discourses.
16.2 Key Observations, Opportunities, and Challenges.
