

1. Record Nr.	UNINA9910830677203321
Titolo	Earth observation applications and global policy frameworks // edited by Argyro Kavvada, Douglas Cripe, and Lawrence Friedl
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , [2022] ©2022
ISBN	1-119-53678-2 1-119-53674-X
Descrizione fisica	1 online resource (239 pages)
Collana	Geophysical monograph ; ; 274
Disciplina	550.28
Soggetti	Earth sciences - Remote sensing Environmental policy - International cooperation Earth (Planet) Observations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	COVER -- TITLE PAGE -- COPYRIGHT PAGE -- CONTENTS -- LIST OF CONTRIBUTORS -- FOREWORD -- GLOSSARY -- Chapter 1 Introduction to Global Sustainability Frameworks and the Role of Earth Observations -- 1.1. INTRODUCTION -- 1.2. THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT -- 1.3. THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION -- 1.4. THE PARIS CLIMATE AGREEMENT -- 1.6. LESSONS LEARNED FROM THE CREATION AND IMPLEMENTATION OF THE MONTREAL PROTOCOL -- 1.6.1. The Montreal Protocol: History -- 1.6.2. Secret of Its Success -- 1.7. CONCLUSIONS -- ACKNOWLEDGMENTS -- REFERENCES -- Part I Introduction to Global Sustainability Frameworks and the Role of Earth Observations -- Chapter 2 Observations to Underpin Policy: Examples of Ocean and Coastal Observations in Support of the Sendai Framework, the Paris Agreement, and Sustainable Development Goal 14 -- 2.1. INTRODUCTION -- 2.2. OCEAN AND COASTAL OBSERVATIONS IN SUPPORT OF RISK REDUCTION FOR THE SENDAI FRAMEWORK ON DISASTER RISK REDUCTION -- 2.2.1. Tsunami Warning Systems -- 2.2.2. Storm Surge Monitoring and Forecasting -- 2.3. OCEAN AND COASTAL OBSERVATIONS IN SUPPORT OF THE PARIS AGREEMENT

-- 2.3.1. Limiting Global Temperature Increase -- 2.3.2. Informing Climate Adaptation -- 2.4. OCEAN AND COASTAL OBSERVATIONS IN SUPPORT OF SDG 14: LIFE BELOW WATER -- 2.4.1. SDG Target 14.1: Reduce Marine Pollution -- 2.4.2. SDG Indicator 14.3.1: Reduce Ocean Acidification -- 2.4.3. SDG Target 14.B: Support Small-Scale Fishers -- 2.5. CONCLUSION -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 3 A Bird's-Eye View of Monitoring and Management of Marine and Coastal Protected Areas -- 3.1. INTRODUCTION -- 3.2. LITERATURE REVIEW ON CONSERVATION POLICIES, REGULATIONS, AND PROTECTED AREAS, AND THEIR RELEVANCE TO HUMAN SOCIETY -- 3.2.1. The Natura 2000 Network -- 3.2.2. UNESCO Biosphere Reserves. 3.2.3. Earth Observations Supporting SDGs -- 3.3. METHODOLOGY -- 3.3.1. Codesign the Service with PA Managers: Mind Maps -- 3.3.2. Blending EO From Remote Sensing and Field Measurements Into Services -- 3.3.3. Blending Existing and New Measurements to Achieve Maximum Benefit From EO -- 3.3.4. Modeling of Current and Future Ecosystem Conditions and Services -- 3.4. RESULTS FOR THE WADDEN SEA -- 3.4.1. Ecosystem Services Provided by the Wadden Sea -- 3.4.2. Application of the ECOPOTENTIAL Mind Map Framework to the Wadden Sea -- 3.5. RESULTS FOR DOÑANA NATIONAL PARK -- 3.5.1. Ecosystem Services Provided by Doñana Wetlands -- 3.5.2. Application of ECOPOTENTIAL Framework to Doñana -- 3.5.3. Measuring Hydroperiods: A Key Element Structuring Water Bird Communities in Doñana Protected Area Temporary Ponds -- 3.5.4. Informing the Management of Natural Resources in Protected Areas: Modeling Biomass Production in the Seasonal Wetlands of Doñana National Park -- 3.6. DISCUSSION AND CONCLUSIONS -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 4 Earth Observation in Support of SDG 6.3.2/6.6.1: Reporting Surface Water Quality -- 4.1. INTRODUCTION -- 4.2. ADDRESSING WATER QUALITY THROUGH SDGs -- 4.2.1. SDG 6.3.2 -- 4.2.2. SDG 6.6.1 -- 4.3. MONITORING APPROACHES, COMPLEMENTARY ROLES, AND GAPS -- 4.4. OVERVIEW OF AQUATIC REMOTE SENSING -- 4.4.1. History -- 4.4.2. Theory -- 4.5. IMAGES TO DATA AND INFORMATION, OVERVIEW OF ALGORITHM AND APPROACHES -- 4.6. EO FOR WATER QUALITY APPLICATIONS -- 4.6.1. Copernicus Global Land Service Lake Water Products -- 4.6.2. CyanoLakes-EO National Eutrophication Monitoring Program -- 4.6.3. The World Water Quality Portal -- 4.6.4. Cyanobacteria Assessment Network (CyAN) -- 4.7. LIMITATIONS AND GAPS IN EO -- 4.7.1. End-User Engagement -- 4.7.2. Institutional Barriers -- 4.7.3. Algorithm Maturity -- 4.7.4. Observations. 4.8. CONCLUSIONS AND RECOMMENDATIONS -- 4.8.1. End-User Community -- 4.8.2. Science Community -- 4.8.3. Government Agencies -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 5 The Fate of Wetlands: Can the View From Space Help Us to Stop and Reverse Their Global Decline? -- 5.1. INTRODUCTION: WETLANDS MONITORING FROM SPACE -- 5.2. GLOBAL WETLAND OBSERVATION AS COLLABORATIVE EFFORT -- 5.3. CASE STUDIES HIGHLIGHTING THE POTENTIAL OF EARTH OBSERVATION FOR WETLANDS -- 5.3.1. Wetland Mapping on Continental Scales in Europe and in Africa -- 5.3.2. A National Demonstration of Wetland Mapping and Monitoring in Rwanda -- 5.3.3. A Global Perspective on Mangroves -- 5.3.4. Mangrove Dynamics in Senegal -- 5.4. DATA AND INFORMATION INFRASTRUCTURES SUPPORTING WETLAND MONITORING -- 5.5. CONCLUSIONS AND OUTLOOK -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 6 Land Under Stress: Earth Observation-Based Drought Risk Monitoring for Sustainable Development -- 6.1. INTRODUCTION -- 6.2. THE ROLE OF EO FOR DROUGHT MONITORING -- 6.3. EO-BASED

DROUGHT RISK MONITORING FOR SUSTAINABLE DEVELOPMENT -- 6.4. CASE STUDY: EO-BASED DROUGHT STRESS MONITORING IN SOUTH AFRICA -- 6.4.1. Drought Monitoring: An Environmental Perspective -- 6.4.2. The Socioeconomic Perspective: Drought-Affected Regions -- 6.4.3. Number of People Within Drought Affected Agricultural Areas -- 6.5. CONCLUDING REMARKS: EO AS A SUPPORT TOOL FOR DROUGHT RISK MONITORING TO SUPPORT SUSTAINABLE DEVELOPMENT -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 7 Building Risk-Informed Communities: Case Studies on the Applications of Earth Observation Data -- 7.1. INTRODUCTION -- 7.2. DEFINING URBAN BOUNDARIES -- 7.3. EARTH OBSERVATIONS FOR BUILDING RISK-INFORMED COMMUNITIES -- 7.3.1. Case Study 1: Flash Flood Risk in Lima -- 7.3.2. Case Study 2: Urban Heat Island Risk in Chicago -- 7.4. CONCLUSIONS -- ACKNOWLEDGMENTS -- REFERENCES. Chapter 8 Satellite Analysis Ready Data for the Sustainable Development Goals -- 8.1. INTRODUCTION -- 8.2. ANALYSIS READY DATA -- 8.3. OPEN DATA CUBE -- 8.4. AFRICA REGIONAL DATA CUBE -- 8.4.1. Flood Risk Map for Strategic Supply of Polio Vaccines Near Lake Chad -- 8.4.2. Deforestation in the Tanzania East Chenene Forest Reserve -- 8.4.3. Detection of Illegal Mining in Ghana -- 8.4.4. Urbanization Growth and Deforestation in Freetown, Sierra Leone -- 8.5. CONCLUSIONS -- ACKNOWLEDGMENTS -- REFERENCES -- Part II Satellite Analysis Ready Data for the Sustainable Development Goals -- Chapter 9 EO4SDG: A GEO Initiative on Earth Observations for Sustainable Development Goals -- 9.1. INTRODUCTION -- 9.2. EO4SDG: INTEGRATING EO INTO GLOBAL SDG MONITORING METHODOLOGIES -- 9.3. THE EARTH OBSERVATIONS TOOLKIT FOR SUSTAINABLE CITIES AND HUMAN SETTLEMENTS -- 9.3.1. EO Application Areas -- 9.4. INEGI'S USE OF EARTH OBSERVATIONS FOR OFFICIAL STATISTICS AND SDG MONITORING -- 9.4.1. Identification of Needs and Opportunities -- 9.4.2. The Mexican Geospatial Data Cube and Collaboration with Geoscience Australia -- 9.5. CONCLUSIONS -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 10 GEO Global Agricultural Monitoring and Global Policy Frameworks -- 10.1. INTRODUCTION -- 10.2. GEOGLAM: AGRICULTURAL MONITORING FOR STABILIZING MARKETS AND MORE -- 10.3. MORE THAN REPORTING: EO TO EMPOWER DECISIONS AND ACTION -- 10.4. GAPS IN KNOWLEDGE: A GEOGLAM RESEARCH AGENDA TO SUPPORT GLOBAL POLICY FRAMEWORKS -- 10.4.1. Essential Agricultural Variables for GEOGLAM -- 10.4.2. Supporting Variables: Agricultural Monitoring and Agricultural Land Management -- 10.5. THE WAY FORWARD AND CONCLUSION -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 11 The Global Observation System for Mercury (GOS4M): Earth Observation Applications for the Minamata Convention on Mercury -- 11.1. INTRODUCTION. 11.1.1. Bridging the Gap -- 11.2. BASIS AND OBJECTIVES -- 11.3. GOS4M IN THE CONTEXT OF GEO AND THE MINAMATA CONVENTION ON MERCURY -- 11.4. FROM THE GEOSS PLATFORM TO THE GEO KNOWLEDGE HUB -- 11.5. IMPLEMENTING THE FLAGSHIP -- 11.6. SURVEYS ON MERCURY MEASUREMENTS IN MEDIA -- 11.6.1. Atmospheric and Marine Programs -- 11.6.2. Mercury in Biota -- 11.7. CONCLUSIONS -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 12 The Group on Earth Observations Carbon and Greenhouse Gas Initiative -- 12.1. INTRODUCTION -- 12.2. THE GROUP ON EARTH OBSERVATIONS AND CARBON -- 12.3. THE GEO CARBON AND GREENHOUSE GAS INITIATIVE -- 12.4. GEO-C IMPLEMENTATION AND PLANS -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 13 The GEO-DARMA Framework as a Mechanism for Future Increased Use of

Satellite Data in Pursuit of Global Domestic Resource Mobilization Goals
-- 13.1. INTRODUCTION -- 13.2. GEO-DARMA OVERVIEW -- 13.2.1.
Materials and Methods -- 13.2.2. Precursor Activities -- 13.2.3. GEO-
DARMA Phases -- 13.2.4. GEO-DARMA Partners -- 13.2.5. GEO-
DARMA Governance -- 13.2.6. User Engagement -- 13.2.7. Reinforcing
the Decision-Making Process -- 13.2.8. Data Policy and Management
-- 13.3. GEO-DARMA PROJECTS -- 13.3.1. Comprehensive Overview --
13.3.2. UNESCAP Coastal Change in Kiribati and Other Pacific Island
Nations Project -- 13.3.3. RCMRD PRIDE (Program for Disaster Risk
Informed Decision-Making, Engagement and Communication):
Integrating Drought and Flood Risk Information Across Southern and
Eastern Africa Project -- 13.3.4. Future GEO-DARMA Pilots --
REFERENCES -- Index -- EULA.
