

C ontents

Executive Summary 1

1 Policy and Findings 5

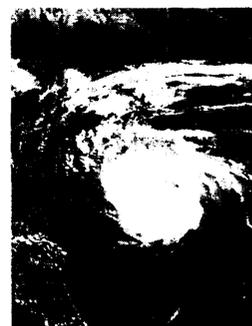
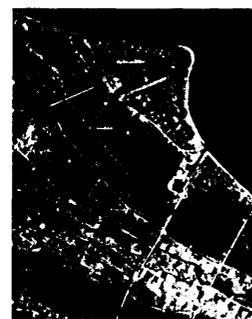
- The Future of Satellite Data and Information 8**
- The Management and Analysis of Data and Information 13
- NASA's Earth Observing System Data and Information System 18
- Public and Private Roles in a Developing Market 22
- International Cooperation 26
- Underutilization of Remotely Sensed Data 29
- Environmental Monitoring 30
- International Development 30

2 Managing Remotely Sensed Data and Information 33

- The Information Industry 34
- Collection and Processing of Remotely Sensed Data 38
- Data Archives 42
- Technology for Archiving Data 46
- Navigating the Archives 50
- Geographic Information Systems 53
- New Ways of Visualizing Data 57

3 NASA's Earth Observing System Data and Information System 61

- EOSDIS Overview 61
- Data Management Technology (Organization and Access) 74
- EOSDIS Program Challenges 75
- CIESIN Issues 79
- EOSDIS Scientific Involvement 84
- Data Formats/Standards 90



4 Government and Private Sector Roles in a Developing Market for Geospatial Data 93

- Remote Sensing as a Public Good 94
- Commercial Provision and Use of Remotely Sensed Data 96
- Elements of Risk and the Role of Government 101
- Growth of Data Markets 105
- International Competition in Data Services 111

5 International Issues in Data Management and Cooperation 113

- Reasons for Cooperation 114
- Challenges of Cooperation 114
- National and Regional Activities 116
- International Treaties and Legal Principles 120
- International Cooperation 121
- Operational Environmental Applications 124
- Weather Forecasting 125
- Operational Data Exchange Issues 132
- International Cooperation on Global Change Research 134
- International Coordination of Data Policies 140
- Remote Sensing and International Development 143

APPENDIXES

- A Operational and Planned Earth Observing Satellite Systems 147**
- B Selected Remote Sensing Applications 150**
- C Applications of Remotely Sensed Data for Forestry 168**
- D Quantitative Products from Satellite Observations 176**
- E Acknowledgements 180**
- F Acronyms and Abbreviations 182**

INDEX 187