Legal Mechanisms to Promote Open Access to Earth Observation Data

Moving Forward on Data Policy and Cooperation in Earth Observations
A Focus on Forest Cover Data and Disaster Relief
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Societal and Economic Benefits of Freely-Available Earth Observation Data

• Atmospheric, oceanic, and land observations are required for scientific understanding and value-added services
• Data sharing advances ability to understand and address global challenges
• Preserving public investment in Earth observations as a global public good enhances capacity to address global challenges
Data Sharing Requirements

- Right to access data
- Right to reuse and disseminate data
- No cost or cost of reproduction and distribution
- Legal interoperability
  - Legal use conditions for each database are clearly communicated and the users are allowed to create and use combined or derivative products that draw from multiple data sources without seeking permission from data creators on case-by-case basis
Potential Legal Restrictions on Use of Data: Copyright Protection

- Data may be subject to copyright protection
- Berne Convention for the Protection of Literary and Artistic Works set forth a common international framework for copyright
- Copyright protection varies from country to country
- Key principles:
  - creativity; fixed in tangible medium; mode or form of expression protected but not underlying ideas, processes, methods of operation, mathematics, or data; arise automatically; term of protection
- Many scientific databases are not subject to copyright protection because they contain factual data that exists in the world independently or depict the world as it is.
Potential Legal Restrictions on Use of Data: EU Database Directive

• In 1996, European Union adopted Database Protection Directive that created new intellectual property protection for databases.
• Protects information in database even if factual if database is the result of substantial investment.
• Restricts use of contents of database.
• Some member states have exceptions for research and educational use.
• A few other countries have adopted similar approach.
Mechanisms to Promote Data Sharing

Governments can dedicate data to the public domain through:

- Statutory mechanisms (e.g. statutory provision that U.S. government employees do not retain copyright in their works and Argentine legislation).
- Regulatory mechanisms (EU Copernicus)
- National policies (e.g. U.S. Open Data Policies and U.S. National Strategy for Earth Observation Data)
- Funding mechanisms requiring Federally funded data to be made publicly available (i.e. conditions in grants or contract)
- International agreements (e.g. WMO Regulation and GEOSS)
- Creative Commons Public Domain Mark
17 U.S. Code § 105 - Subject matter of copyright:
United States Government works

Copyright protection under this title is not available for any work of the United States Government, but the United States Government is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise.
Statutory Mechanisms: Argentine Open Access Legislation

• On November 13, 2013, Argentine Congress passed legislation requiring all publicly funded research to be available in open access interoperable institutional repositories. The policy applies to research data, journal articles and dissertation themes reports.

• The law is designed to ensure that Argentine citizens have access to nationally funded research results and to promote visibility of Argentine research.
Regulatory Mechanisms:
EU Copernicus Regulation

- Copernicus (formerly GMES) is the EU’s Earth observation program
- Regulation No. 377/2013 (24 April 2014) establishes full, open data access policy for Sentinel data and Copernicus services to:
  - promote their use and sharing, support European research, technology and innovation communities, and strengthen European Earth observation markets in the downstream sector, enabling economic growth and job creation
National Data Policies: U.S. Open Data Initiatives

- OSTP Memo “Increasing Access to the Results of Federally Funding Scientific Research” (22 Feb 2013)
- Executive Order 13642: Open and machine-readable data as the New Default for Government Information (09 May 2013)
- OMB Memo “Open Data Policy - Managing Information as an Asset” (09 May 2013)

Open access to government data improves public and private decision-making; use of data results in increased value; accelerates scientific breakthroughs and technology innovation; and creates jobs and fuels economic growth.
National Data Policies:
National Strategy for Civil Earth Observations

• The April 2013 Strategy provides:
  – A policy framework and method for Federal Government assessment of Earth observations data and products. It defines societal benefit areas, evaluates information products, identifies critical data streams, and prioritizes observing systems
  – Data management guidelines

• Federal investments in civil Earth observation provide critical societal benefits by enabling scientists, decision-makers, and citizens to advance the drivers of U.S. economic, social, and environmental well-being
National Data Policies:
National Strategy for Civil Earth Observations

• Identifies the need for long term and continuous access to Earth observation data
• Agencies should continue efforts to encourage data openness, data sharing, and increased data access in the international system
• Strives for integration of data from Federal and non-Federal sources
• Recognizes that certain sources of data may require protection due to considerations such as national-security or privacy
• Earth observation data should be managed and preserved so that both anticipated and unanticipated users can find, evaluate and use the data in new ways
Funding Mechanisms

• National funding mechanisms for research (e.g., grants or contracts) may require recipient of funding to disseminate data or results or deposit data in public repository

• Example – United States Geological Survey’s National Geospatial Data Center has a data acquisition policy that requires all geospatial data arising from partnerships with state governments or businesses to be placed in the public domain
International Agreements: GEOSS Data Sharing Principles

- The Group on Earth Observations (GEO) is a voluntary partnership of member countries and participants which promotes the societal benefits of Earth observation systems.

- The societal benefits of Earth observations cannot be achieved without data sharing.

- GEOSS Data Sharing Principles provide for full and open exchange of data with minimum time delay and cost.

  - U.S. Earth Observation Data Management Guidelines support the GEOSS Data Sharing Principles.
International Agreements: WMO Resolution 40

• Modern meteorology depends upon near instantaneous exchange of weather information across the globe

• “Members shall provide on a free and unrestricted basis essential data and products which are necessary for the provision of services in support of the protection of life and property and the well-being of all nations, particularly those basic data and products...required to describe and forecast accurately weather and climate...”

• As member of the WMO, the U.S. supports full, open and timely exchange of environmental data internationally
Private Instruments: Waivers and Licenses

• Standard Waivers of Copyright
• Creative Commons Public Domain Waiver (CC0) or Universal Public Domain Dedication (CC0 1.0)
• Standard Common-Use Licenses
  – Open Data Commons Public Domain Dedication and License (PDDL)
  – Creative Commons Attribution License (CC BY 4.0)
Summary

• The GEOSS data principles, WMO regulation, EU policy, and other examples indicate a global trend towards providing free and open access to Earth observation data from government-operated satellites.

• Several mechanisms can be used to remove legal barriers to sharing of data, including placement of government generated or funded data into the public domain, international agreements, and use of common licenses that enable use and reuse of the data.

• These mechanisms will promote data sharing and legal interoperability.