Collaborative Research, Tools Development, and Public–Private Partnerships in Academia

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CIESIN’s Mission and History

Mission
- To provide access to and enhance the use of information worldwide, advancing understanding of human interactions in the environment and serving the needs of science and public and private decision making
- Strong focus on the Sustainable Development Goals and associated data needs

History
- Founded in 1989 as an independent non-governmental organization (NGO) in Michigan
- Relocated to Columbia University in July 1998 to become part of the Earth Institute, based at the Lamont campus in Palisades, New York

Staff
- >50 professional staff from the social and natural sciences, information technology, & data management in three divisions:
  - Science Applications
  - Geospatial Applications
  - Information Technology
Example CIESIN Public–Private Partnership Experience

- State Failure Task Force => Political Instability Task Force
  - Intel community, SAIC, ISciences, CIESIN, academics

- National Security Implications of Climate and Global Change
  - Intel community, Scitor, ISciences, CIESIN, others

- Global Earthquake Model
  - Risk industry, USGS, EU, UN-Habitat, ImageCat, Inc., CIESIN, …

- NASA ROSES projects
  - Disasters program: ImageCat lead, subaward to CIESIN
  - Human Planet: CIESIN lead, subawards to ImageCat and Univ. of Louisville

- World Bank
  - Disaster Management Facility: ImageCat lead; subaward to CIESIN

- Facebook-World Bank-CIESIN
  - Development of the High Resolution Settlement Layer
• The 2011 version included many SEDAC data sets, including Anthropogenic Biomes, Global Crop and Pasture Lands, and Global Reservoirs and Dams.
• Desktop application—too difficult to port to Web at the time
• Pioneered the linked multi-panel interface that was precursor to the 4-panel interface used by the SEDAC in several mapping tools (SEDAC Map Viewer, GMIS/HBASE Viewer, POPGRID Viewer)
GeoCollaborate enables its users to send a population query to SEDAC’s Population Estimation Service and receive a customized population estimate.
POPGRID: A “Data Collaborative” for Settlement, Infrastructure, and Population Data

- Public–private data partnership involving intergovernmental organizations, national & academic research institutions, large and small companies, NGOs, foundations, universities, data stewards, etc.
Different organizational types have different strengths and constraints

- **Academic** units bring a broader view of issues, technology, trends
  - But have difficulties dealing with IP issues, rapid turnaround and response, liability concerns, nonstandard outputs, risk

- **Private sector** organizations bring innovation, awareness of needs, connections to end users
  - But are constrained by funding and stakeholder requirements, time frames, competitive environment

- **Government entities and foundations** bring resources, priorities, requirements
  - But typically have established processes and procedures that can be inflexible
New models for data and technology sharing are evolving

- **Hybrid organizations** like ESIP, the Group on Earth Observations, Research Data Alliance, Global Partnership for Sustainable Development Data
- **Open source/open access** initiatives
- **Data Collaboratives** like POPGRID
  - Still working on governance models
- **DANTE**—partnership initially funded by US Army Corps of Engineers as a Small Business Technology Transfer Research (STTR) project involving Isciences, CASE Consultants, and CIESIN.
  - Needs community participation to survive!
Thanks!

https://xkcd.com/2289/