Scientific Use and Impact of Socioeconomic Data across Disciplines

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Brief Overview of SEDAC

https://sedac.ciesin.columbia.edu/

- NASA Socioeconomic Data and Applications Center (SEDAC)
- One of 12 Distributed Active Archive Centers (DAACs) in the NASA Earth Observing System Data and Information System (EOSDIS) *
  - Focusing on improving understanding of human interactions in the environment *
  - Mission to develop and operate applications that support the integration of socioeconomic and earth science data *
  - Serves as an "Information Gateway" between earth sciences and social sciences *
- Open data products and services enable diverse uses
  - Currently serving 289 curated datasets within 51 data collections and 2,471 maps
  - Various map services, viewers, and tools to facilitate analysis and visualization
  - SEDAC data have been cited in over 6,000 publications, including over 5,000 journal articles

Operated for NASA under Contract 80GSFC23CA001

*Source: https://sedac.ciesin.columbia.edu/about
Finding Evidence on Scientific Data Use and Impact

• Evidence of scientific use and impact of SEDAC data
  • Journal articles
  • Books
  • Educational materials
  • Policy documents and grey literature

• Discovering evidence of scientific impact
  • Catalog searching – DOIs are helpful when attribution includes a DOI
  • Publisher feeds – periodic reports of data cited in articles
  • Publication requests – often received during publication process
  • User community mentions – informing us about recent data citations
  • Author notifications – sometimes received from authors about their publications
Communities Served: 22 Major Fields of Science (216 Categories and 92 Subject Areas) of Journals that Cited SEDAC Data 2004-2013

Web of Science® Categories, Web of Knowledge® Subject Areas, and ScienceWatch® Major Fields of 1480 Articles in 540 Journals. Source: Downs & Chen, 2015.
63 Subject Areas of Journals with Articles Co-Citing SEDAC Data with Remote Sensing Data, 2007-2016

- Environmental Sciences & Ecology, 24%
- Science & Technology - Other Topics, 4%
- Remote Sensing, 7%
- Public, Environmental & Occupational Health, 4%
- Meteorology & Atmospheric Sciences, 10%
- Life Sciences & Biomedicine - Other Topics, 6%
- Geology, 5%
- Geography, 4%

Source: Downs, Chen, and Schumacher, 2017
85 Discipline Categories of GPWv4 Data Citations 2017-2019

Source: Downs, 2019
51 Categories of Journals with 3 or More Articles that Co-Cite SEDAC Data with Remote Sensing Data from 1997-2021

Source: Downs, 2022
15 Major Fields of Journals with 3 or More Articles that Co-Cited SEDAC Data with Remote Sensing Data from 1997-2021

Source: Downs, 2022
Categories* of 75 Randomly Selected 2021-2022 Articles Citing SEDAC Data