

DATA & APPLICATIONS ONLINE

Agriculture and Food Security

Overview

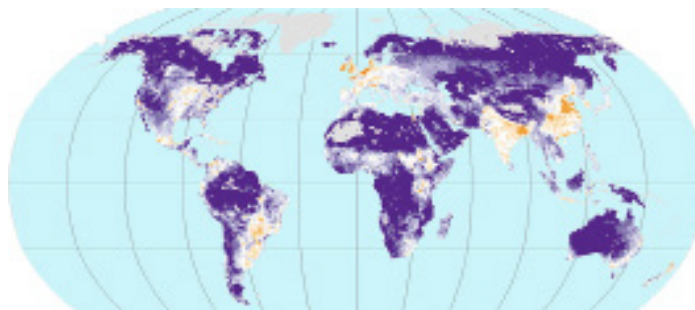
Because agriculture is a fundamental driver of environmental change, agriculture-related data can provide valuable insights into sustainability issues such as land use, biodiversity, and food security, for both researchers and applied users.

The Web site of the NASA Socioeconomic Data and Applications Center (SEDAC) offers a variety of interdisciplinary data and related resources grouped under socioeconomic and earth science themes. The Agriculture and Food Security theme spans global data holdings and resources that touch on the proportion of cropland and pasture, the extent of poverty, biodiversity, environmental indicators, and human consumption measures.

About the Data

The SEDAC Web site provides access to several global agriculture-related data sets:

- Global Agricultural Lands, which shows the proportion of land area used as cropland and pasture, for the year 2000
- Global Fertilizer and Manure, representing fertilizer application rates and manure production of Nitrogen (N) and Phosphorous (P)
- Effects of Climate Change on Global Food Production, providing data from a study that projected changes in the yields of major grain crops based on climate change scenarios
- Anthropogenic Biomes, helping delineate 21 anthropogenic biomes based on population density, land use, biota, climate, terrain and geology
- The Human Footprint, which aims to measure the extent of human influence on the Earth's surface
- The Environmental Performance Index (EPI), which is produced every two years by a research team from the Yale Center for Environmental Law and Policy and CIESIN, Columbia University. The EPI ranks country performance on high-priority environ-



mental issues in two broad policy areas, protection of human health from environmental harm, and protection of ecosystems. The 2018 EPI, available at <https://bit.ly/2QlTf9G>, evaluates 180 countries on 24 performance indicators across 10 issue categories covering environmental health and ecosystem vitality.

Data Access

Go to <https://bit.ly/2qXWYas> to download data, maps, and information.

References

- Verheijen, F.G.A., S. Jeffery, M. van der Velde, V. Penížek, M. Beland, A.C. Bastos, and J.J. Keizer. (2013). Reductions in soil surface albedo as a function of biochar application rate: implications for global radiative forcing. *Environmental Research Letters* 8(4): 044008. <http://dx.doi.org/0.1088/1748-9326/8/4/044008>
- Machovina, B., and K.J. Feeley. (2017). Restoring low-input high-diversity grasslands as a potential global resource for biofuels. *Science of the Total Environment* 609:205–214. doi: 10.1016/j.scitotenv.2017.07.109



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EODIS DAACs
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