DATA LIBRARY

Relevant and accurate information is essential to making decisions about development and resource management. However, many decision makers and researchers in the developing world do not have access to comprehensive information about climate impacts, shocks and vulnerability. IRI's Data Library plays a crucial role by providing data to the scientific and technical communities that need it. More than 60,000 users from 120 countries access the library each year.

Contact
Benno Blumenthal
Data Library Manager
benno@iri.columbia.edu

Ph: +1.845.680.4450
Fx: +1.845.680.4864

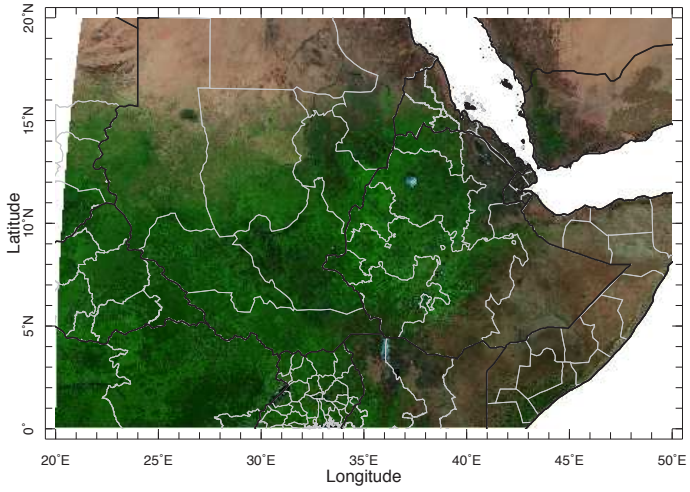
International Research
Institute for Climate and Society
Columbia University
Lamont Campus
61 Route 9W
Palisades, NY 10964-8000 USA

www.iri.columbia.edu

The Data Library is a free, powerful, web-accessible tool that allows users to manipulate, view and download over 400 earth science and other data sets through a standard web browser. Initiated as an aid to climate scientists to do exploratory data analysis, the library has expanded to provide a platform for interdisciplinary researchers focused on topics related to climate impacts on society. The library encourages collaborative work and the free and open exchange of information. Tutorials and examples of data analysis are provided to aid new users.

Data Holdings

In addition to data sets traditionally used in climate-related research, the Data Library expands beyond the horizons of a conventional climate data repository to include derived analyses and satellite-measured environmental parameters. It contains observed and model-derived quantities influenced by climate, such as disease incidence, crop yields and power generation records. This expanded view of climate-related data makes interdisciplinary research easier to perform and facilitates the development of tools for effective use of climate information in a decision-making framework.



MODIS image for Greater Horn of Africa

Access and Exchange

The library staff is at the forefront of efforts to utilize and improve open system architecture for the easy exchange of data. Users can access data through simple procedures using a web browser and can then download it in a variety of commonly used file types, including formats routinely used by those outside of the climate research community. The library is part of an expanding network of virtual data libraries that allows a user transparent access to data stored at many different locations.

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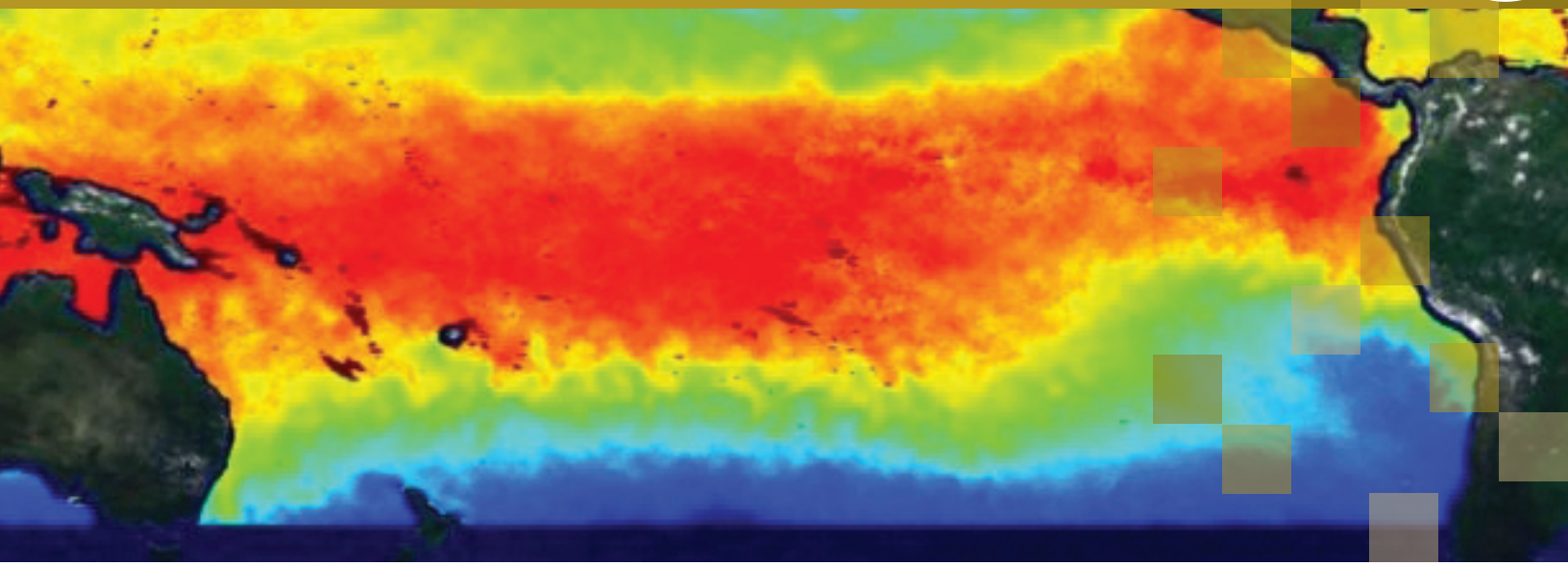
IRI'S DATA LIBRARY



NOAA

Visualization

The Data Library includes an interactive data viewer that allows users to visualize multi-dimensional data sets in a variety of ways, including time series graphs and two-dimensional maps. Users can customize images by selecting a number of different options including color scales, specific map domains, and physical and geopolitical boundaries. They can create animations and save images in any one of a number of user-specified formats. The data visualization capability allows decision makers and researchers to share complex information quickly and easily.

Analysis and Research

An extensive array of statistical analysis tools is available to the library's users. They can compute analyses of varying complexity, from simple averages to advanced multivariate statistical analyses. A statistical analysis tutorial, which includes step-by-step examples, guides users through these powerful functions. Many functions commonly difficult in other data-analysis software, such as working with data sets that have different spatial or temporal resolutions, can be completed in the IRI Data Library with a single command.

Synthesis and Tool Building

A number of data-library-based analyses have been compiled for quick reference in a section of the IRI web site called the Map Rooms. The majority of these maps and analyses are linked directly to the library and serve as another point of access to it. Most of the contents found in the Map Rooms are analyses useful in climate diagnostics and monitoring efforts, but an increasing number are being created to serve climate-dependent sectors as well. For example, we have developed a tool for a malaria early-warning system that indicates the frequency of occurrence of conditions suitable for malaria transmission. Data Library tools are continually developed for interdisciplinary research and are available to users who wish to create interfaces that meet the needs of particular problems within sectors, such as agriculture or water resources.

About the IRI

The IRI works on the development and implementation of strategies to manage climate related risks and opportunities. Building on a multidisciplinary core of expertise, IRI partners with research institutions and local stakeholders to best understand needs, risks and possibilities. The IRI supports sustainable development by bringing the best science to bear on managing climate risks in sectors such as agriculture, food security, water resources, and health. By providing practical advancements that enable better management of climate related risks and opportunities in the present, we are creating solutions that will increase adaptability to long term climate change. IRI is a member of the Earth Institute at Columbia University.