

Center for International Earth Science Information Network

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The Center for International Earth Science Information Network (CIESIN) is a data and research center of Columbia University's Earth Institute that addresses human interactions with the environment. Our focus is on the impacts of human activities and institutional arrangements on the environment, and, in turn, how environmental changes affect society.

CIESIN has several core programs and collaborates widely with partners around the world on projects related to environmental change and sustainability.

The Center for International Earth Science Information Network (CIESIN) is located at the Lamont Campus of Columbia University in Palisades, New York. Its international staff have advanced training in a range of fields, including geography, demography, political science, economics, natural resource management, information management, library science, geospatial technologies, software engineering, and computer science.
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THE EARTH INSTITUTE COLUMBIA UNIVERSITY

The Earth Institute, Columbia University, mobilizes the sciences, education and public policy to achieve a sustainable earth. Through interdisciplinary research among more than 500 scientists in diverse fields, the Institute is adding to the knowledge necessary for addressing the challenges of the 21st century and beyond. With over two dozen associated degree curricula and a vibrant fellowship program, the Earth Institute is educating new leaders to become professionals and scholars in the growing field of sustainable development. We work alongside governments, businesses, non-profit organizations and individuals to devise innovative strategies to protect the future of our planet.

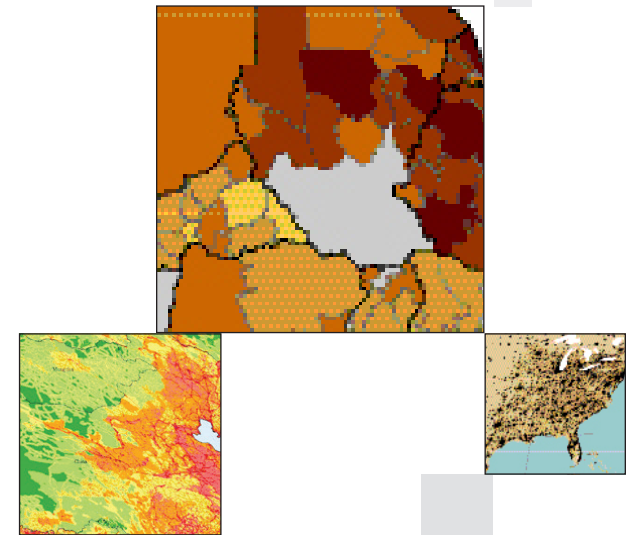
www.earth.columbia.edu



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Programs and Projects



Programs

NASA Socioeconomic Data and Applications Center (SEDAC)

One of twelve NASA Earth Science Data Centers, SEDAC provides access to socioeconomic and environmental data for integration with NASA earth science and remote sensing data. www.sedac.ciesin.columbia.edu

Intergovernmental Panel on Climate Change (IPCC) Socioeconomic Data Distribution Centre (DDC)

A data center operated collaboratively by SEDAC, the UK's British Atmospheric Data Centre, and the World Data Center Climate in Hamburg, Germany, with access to key data sets used in IPCC assessments and reports. www.sedac.ipcc-data.org/ddc

Environmental Performance Index (EPI)

A collaboration with Yale University, in association with the World Economic Forum, to measure progress toward environmental goals; the 2016 EPI assesses 180 countries. www.epi.yale.edu

Africa Soil Information Service (AFSIS)

To create detailed digital soils maps of 42 sub-Saharan African countries by the Earth Institute and African researchers, CIESIN is helping build information systems for collection, analysis, and dissemination of soils data to end users. Funded by the Bill & Melinda Gates Foundation and AGRA. www.africasoils.net/

Population-Environment Research Network (PERN)

PERN promotes online scientific exchange to further research on population and the environment. Sponsored by the International Union for the Scientific Study of Population. www.populationenvironmentresearch.org

Environment and Security

CIESIN is part of a number of initiatives assessing impacts of environmental stress, especially climate change, on national and global security concerns. With the Earth Institute and the School of Professional Studies, CIESIN is leading the Environment, Peace, and Security Certification of Professional Achievement. www.ciesin.columbia.edu/esp.html

Research Translation Core (RTC) for Columbia University Superfund Research Program (CU SRP)

Led by the School of Public Health and sponsored by the National Institute of Environmental Health Sciences, the RTC communicates scientific information on the health effects, geochemistry, and remediation of arsenic/manganese in groundwater. www.superfund.ciesin.columbia.edu

Recent Awards

Impact of Climate Change on Population Distribution and Migration: An Evidence-Based Analysis

This modelling project for the World Bank deploys innovative methods to develop future scenarios of population distribution incorporating climate impacts on the water and agriculture sectors. To be undertaken with City University of New York Institute for Demographic Research and the Potsdam Institute for Climate Impact Research.

Global High Resolution Population Denominators

Partnering with WorldPop and University of Louisville, CIESIN is using a statistical model based on census and biophysical data to create a high-resolution (100 m) global surface of population. Funded by the Bill and Melinda Gates Foundation.

Computational Thinking in Ecosystems (CT-E)

This two-year project builds on a previous collaboration with NYSCI and Design I/O for young people, using hands-on tools to develop computer programming in the study of ecological systems. Supported by the STEM+Computing Partnership (STEM+C) initiated by the U.S. National Science Foundation. 1.usa.gov/1UiVpHx

USAID West Africa Biodiversity and Climate Change (WA-BiCC)

This five-year, \$48.9 million dollar project addresses direct and indirect drivers of natural resource degradation to improve livelihoods and natural ecosystems across the region. An implementing partner with Tetrattech/ARD, CIESIN will contribute to improving forest conservation and building coastal climate resilience. 1.usa.gov/1T5xWlq

Selected Collaborative Projects

SERVIR-West Africa

Launched in 2016, CIESIN and the International Research Institute for Climate and Society are developing applications based on remote sensing to address food security, fresh water availability, and hazards in several countries in West Africa. <https://www.servirglobal.net/>

Improving Estimates of Building Exposure to Hazards

CIESIN and ImageCAT, Inc. are using remote sensing data to improve estimates of building exposure to earthquake and related hazards for the risk reinsurance industry. A three-year award from the NASA Applied Sciences Program.

Assessment of Potential Flood Impacts to Buildings in the Hudson Valley/Long Island Regions

A three-year project to develop building footprint data and conduct a flood scenario impact analysis, supported by the New

York State Energy Research and Development Authority Climate Change Adaptation Research and Strategies Program.

Vulnerability of the U.S. Atlantic Coast to Hazards Associated with Extreme Winter Storms (StormEVAAC)

CIESIN is contributing to research on coastal vulnerability, for a three-year project led by the Lamont-Doherty Earth Observatory and the Center for Climate Systems Research.

Consortium for Climate Risk in the Urban Northeast

The Earth Institute and four academic institutions are addressing climate change risks in the urban Northeast under a five-year award from the NOAA Regional Integrated Sciences and Assessments initiative. CIESIN is supporting training and outreach and operating the project Web site. www.ccrun.org/

Ecological Assessment of the Hudson River

With the Nature Conservancy, CIESIN is implementing a physical habitat model of the Hudson River floor and conducting a comprehensive ecological assessment to characterize the habitat units, as a foundation for the Hudson River Comprehensive Restoration Plan.

CODATA gROADS Task Group

CIESIN is leading a group of international experts under the Committee on Data for Science and Technology of the International Council for Science in developing and improving a Global Roads Open Access Data Set for inter-city road networks. www.groads.org

High-Performance Green Infrastructure (GI) to Sustain Coastal Cities

CIESIN is developing geospatial infrastructure and supporting a new framework for GI systems for coastal sustainability. A five-year award from the National Science Foundation to Columbia's Fu Foundation School of Engineering and Applied Science. 1.usa.gov/1eXq8am