

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.

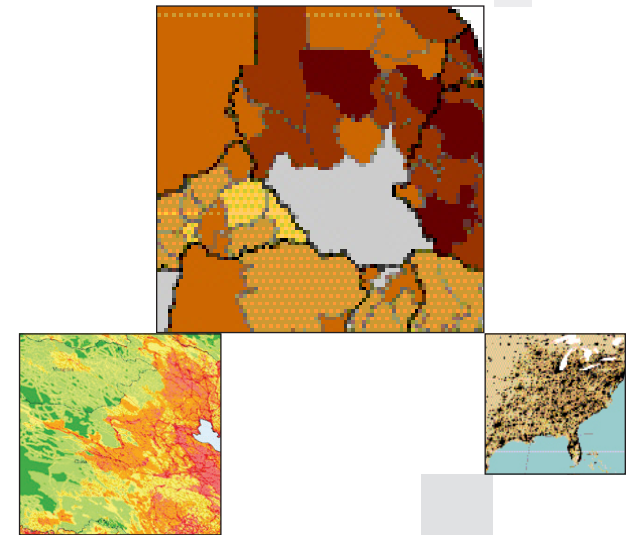
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Programs and Projects



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. 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. 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 2014 EPI assesses 168 countries. epi.yale.edu

Africa Soil Information Service (AfsIS)

Towards the creation of detailed digital maps of soils in 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.

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. 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.

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 As and Mn in groundwater. superfund.ciesin.columbia.edu

Selected Collaborative Projects

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.

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

Transboundary Water Assessment Program (TWAP)

CIESIN is part of a multi-institutional team led by the UNEP-DHI Center for Water and Environment for a project assessing international river basins, for the Global Environmental Facility TWAP. getwap.org/

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

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

Planning for Resilience in East Africa through Policy, Adaptation, Research, and Economic Development (PREPARED)

With Tetra Tech/ARD, CIESIN is developing data/information systems for climate change adaptation, biodiversity conservation, and water supply and sanitation services in East Africa. Funded by the United States Agency for International Development. 1.usa.gov/1QHohWs

Hudson River Flood Hazard Decision Support System

An online flood assessment mapping tool for the lower Hudson Valley being developed by CIESIN and the Stevens Institute of Technology. Funded by the New York State Energy Research and Development Authority (NYSERDA).

Ecological Assessment of the Hudson River

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

Africa Exposure Data Development

In collaboration with ImageCAT, Inc., CIESIN is using optical remote sensing and demographic and economic data, along with inventories

of critical infrastructure facilities and transportation networks, to establish a baseline for assessing natural disaster impacts for Kenya, Ethiopia, Uganda, Niger, and Senegal. Funded by the World Bank.

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.

Detecting Water Quality Regime Shifts in Jamaica Bay

For a two-year project funded by the US Department of the Interior, CIESIN, Brooklyn College, and partners of the Science and Resilience Institute at Jamaica Bay are developing an integrated data management system to assess water quality patterns in the Bay, and creating an online interactive mapping tool.

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. groads.org

Terra Populus: A Global Population/Environment Data Network (TerraPop)

TerraPop integrates population census data with environmental data to build a unique data access/analysis system for understanding local and global human/environment interactions. Led by the Minnesota Population Center under a five-year grant from the National Science Foundation. terrapop.org

Connected Worlds Project

A three-year collaboration between CIESIN, the New York Hall of Science (NYSci), and other partners to prototype and implement a data-rich interactive environment for learning about sustainability. Exhibit opened July 2015 at the NYSci facility in Queens, New York. Funded by the US National Science Foundation.

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. ccrun.org/

Climate and Health Analysis for Global Education (CHANGE) Viewer

With the Institute for the Application of Geospatial Technology, CIESIN developed this 3D mapping tool. Part of the NASA Climate Change Impacts and Human Health program. climatechangehumanhealth.org/changeviewer/