

Keynote speech: **Applications of gridded socioeconomic data sets for elucidating human-environment interactions**

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Abstract

It is widely recognized that the humans and their activities are the major drivers of changes in the Earth's biophysical systems, and that by the same token, humans, their economic systems, and infrastructure are also highly vulnerable to the impacts of these changes. Data integration is vital to understanding these human-environment interactions. This presentation focuses on the application of a number of CIESIN's gridded demographic and socioeconomic data sets (Gridded Population of the World v.3, Global Rural-Urban Mapping Project, Global Infant Mortality Rates, and Global Child Malnutrition) to research questions at the intersection of the social and natural sciences. Examples will include use of gridded demographic and socioeconomic data for research on climate impacts and vulnerability, natural hazards vulnerability, emerging infectious diseases, environment and security linkages, and biophysical correlates of poverty and malnutrition. The paper will also describe some of the technical difficulties in data integration approaches, such as differing data resolutions and spatial mismatches, and point towards future data needs.