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Spatial distribution and risk for urban populations -- an international overview

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Abstract

This paper examines the climate-related risks that will face the inhabitants of developing-country cities and towns in the decades to come. It draws upon a newly-assembled, comprehensive database with information on city population size and growth for several thousand cities in the developing world (United Nations 2008). For the first time, these city population data are situated spatially, by exploiting detailed geographic information on settlements collected in the Global Rural–Urban Mapping Project (SEDAC 2008; Balk 2009 forthcoming). Having located cities and towns in spatial terms, we are able to assess their exposure to climate-related risks in two important ecozones—the low-elevation coastal zone and drylands—where storm surges and flooding, as well as water stress and episodes of extreme heat, are expected to threaten human health. Using new methods, we have constructed urban population growth estimates and forecasts that incorporate demographic and ecological parameters. For a number of countries, we can explore an important dimension of vulnerability, showing through small-area poverty maps the extent to which the urban poor are exposed to risk. Much of the investment needed to prepare cities to meet such risks will be made by national and local-level decision-makers, who will need more detail than these global datasets can provide. To show what is involved in connecting global models and data to country-specific and local-level needs, we summarize what has been learned from on-going case studies of India and Brazil.