Economic, Environmental, and Health Impacts of Urbanization in India

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Abstract

Urbanization is an increasing global phenomenon that, while improving economic growth, has been linked to many adverse health and environmental impacts. In developing countries, such as India, these impacts are even more prominent, as they lack the resources and infrastructure to address the consequences of rapid urbanization. The goal of this study is to explore the economic growth that has occurred as a result of urbanization in India, as well as to show some of the health and environmental impacts of urbanization. In order to do this, GIS was used to compare percent urbanization to other variables, such as energy consumption, GDP, and respiratory illness to determine if urbanization is related to these variables. The results support the idea that urbanization is related to environmental degradation and negative health consequences in India. This relationship suggests the need for policy measures aimed at regulating the impacts of urbanization in India in order to promote land conservation and “smart growth” in these urban areas.

Introduction

Urbanization is currently occurring at an unprecedented pace in India. Since Independence, the urban population has grown six-fold, and a recent report predicts that India will have 87 cities with a population of over one million by 2030, with a predicted 590 million people living in cities. Though this rapid urbanization has allowed for economic growth within the country, it also has caused a number of adverse impacts related to health and environmental degradation (Sankhe et al. 2010).

Between now and 2030, the economy is estimated to grow 7.4% annually. Coupled with economic growth, the emergence of a young generation is expected to create 119 million jobs in cities. Because of this development, it is expected that 70% of GDP will come from cities, meaning that there is an unprecedented potential for economic growth and further development in the urban areas of India (Sankhe et al. 2010).

Our study focuses on the economic, health, and environmental impacts of urbanization in India. By analyzing past data, we can better understand the trends related to urbanization and gain insight into what can be done in the future to address its negative impacts, while sustaining economic growth in India.

Methods

In order to analyze the impacts of urbanization on the economy, environment, and health in India, we collected state-level data from various sources, including the India Ministry of Statistics, World Prospects 2007, and India National Health Profile 2009. We imported this data into GIS, along with a shapefile of India. In doing this, we were able to spatially map and compare percent urbanization to other variables to understand the relationships. Excel and SigmaPlot were also used in analysis.

Health

In terms of health impacts, increased air pollution causes increased morbidity and mortality (Frumpkin 2002). Data from WHO, for example, indicates that air pollution is responsible for about 673,000 deaths per year in India (Nagdev 2004). Additionally, increased automobile use leads to automobile crashes and pedestrian injuries and fatalities (Frumpkin 2002). In India, the death toll due to motor vehicle accidents rose from around 56,400 deaths in 1991 to about 80,000 deaths in 2001 (Badami 2005).

Distribution of Respiratory Infections

Figure 3

This map shows that states in India with a higher percentage of urbanization also have a higher prevalence of respiratory infection.

Sources