

GLOBAL REPORT ON HUMAN SETTLEMENTS

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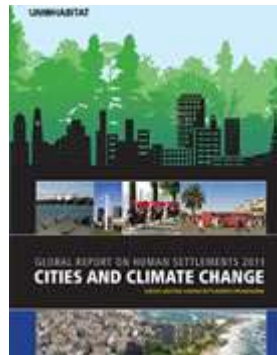
The Global Report on Human Settlements



Prepared under a mandate of the United Nations General Assembly, the Global Report on Human Settlements provides the most up to date assessment of urban conditions and trends globally. It is an essential reference tool for researchers, academics, planners, public authorities and civil society organizations around the world.

Cities and Climate Change: Global Report on Human Settlements 2011 – The Contribution of Urban Areas to Climate Change

Economic growth and urbanization move in tandem, as economic growth and greenhouse gas (GHG) emissions have for at least the last 100 years. Because most economic activity is concentrated in urban areas, cities have a key role in climate change. Affluence and lifestyle choices often lead to higher GHG emissions, and, historically, developed countries have had greater GHG emissions per capita than developing countries. The world is urbanizing quickly and under a business-as-usual scenario, GHG emissions will also increase dramatically.



Reducing the contribution of cities and other urban areas to climate change requires an understanding of the sources and drivers of urban GHG emissions. According to *Cities and Climate Change*, a wide range of GHG emitting activities is associated with cities and their functioning. For instance, *energy supply* is responsible for about 26 per cent of global GHG emissions. The combustion of fossil fuels is the major source of these, and is used for electricity generation, heating, cooling, cooking, transportation and industrial production. Urban areas rely heavily on energy systems, the energy structure and the quality of the energy. It is not surprising that rich cities use more energy than poor cities and therefore emit more GHG emissions. In fact, the link between economic growth, urbanization and GHG emissions is by now accepted as a basis from which to start discussing alternatives.

Transport is another significant contributor to overall GHG emissions. The sector as a whole accounted for approximately 23 per cent of total energy-related emissions and 13 per cent of global emissions in 2006. The issue of emissions from transportation in developing countries is particularly important where motor vehicle ownership is expanding rapidly. In 2011, there were nearly 1.2 billion passenger vehicles worldwide. By 2050, this figure is projected to reach 2.6 billion. There is a strong association between rising income and car use in developing countries, meaning that economic growth in developing countries is likely to result in rising traffic congestion. Policies aimed at reducing emissions by the sector need to consider that differences in emissions for a mode of transport (e.g. private vehicles) also depend on several factors: size and types of vehicles, efficiency of the engines, maintenance practices, vehicle-trip frequencies and operating speeds. These issues will be discussed at length in the 2013 edition of the Global Report on Human Settlements.

GHG emissions from *commercial* and *residential buildings* are closely associated with embodied emissions (i.e. the energy used to make products). When

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combined, the Intergovernmental Panel on Climate Change estimates global emissions from residential and commercial buildings to be 8 per cent of global GHG emissions. Decision-makers need to pay attention to the factors that determine emissions from buildings; such as the need for heating and cooling, the construction of the building, the behavior of the building occupants, the type(s) of fuel used, the size of the space to be heated or cooled, and the orientation of the buildings.

Two other key GHG emitting sectors are *industry* and *waste*. Many industrial activities are energy-intensive in their operation, in particular the manufacture of metals, chemicals and fertilizer, petroleum refining, cement and pulp and paper. Mitigation policies and strategies need to account for differences in location, size and age of the industrial facilities, as well as the amount of GHGs emitted in line with a combination of energy sources used by each industrial site. Although waste is a small contributor to global emissions, rates of waste generation have been increasing in recent years, particularly in developing countries that have experienced increasing affluence.

In order to account for the contribution of urban areas to climate change, it is necessary to measure their emissions of GHGs. Inventories of emissions provide a basis for comparisons to be made. The United Nations Environment Programme, UN-Habitat and the World Bank launched an 'International Standard for Determining Greenhouse Gas Emissions for Cities' at the World Urban Forum in Rio de Janeiro in March 2010. This standard provides a common method for cities to calculate the amount of GHG emissions produced within their boundaries. The various 'scopes' of the emissions being measured includes: all emissions produced within the geographical area of the city, major emissions from consumption within a city, and major emissions outside the city area that are attributable to the consumption of city residents. Taking account of a city's GHG emissions per capita is vital, because city per capita emissions often differ greatly from regional or national per capita emissions. While the methodology and data available for each city may vary, assessing the contribution of cities to climate change is a vital first step in identifying potential solutions. However, cities also rely on inward flows of food, water and consumer goods that result in GHG emissions from areas outside the city.

Notwithstanding the importance of emission inventories, it has been difficult to develop a standardized globally comparable methodology for GHG emissions at the local or municipal level. There are a number of reasons for this:

- It is difficult to attribute to cities emissions by such sectors as aviation and shipping;
- The different methodologies used to measure emissions can result in different numbers (i.e. scope issues);
- Various boundary definitions have resulted in uncertainties of cities' GHG inventories and then become barriers for the comparable study of GHG emission status at a global scale.

Arising from the foregoing, any blanket statements about the total contribution of urban areas or cities to GHG emissions need to be treated with caution. There is no globally accepted definition of an urban area or city, and there are no globally accepted standards for recording emissions from sub-national area. Yet, national inventories of GHG emissions are a basic requirement expressed in international climate agreements. Accordingly, high consumers are keen to use the production-based analysis of GHG emissions, so that production systems outside their geographical territories are not included.

The consumption-based approach provides an alternative framework. By this measure, consumers with their choices, preferences and demands are made accountable for the GHGs caused on their behalf, wherever the product is manufactured. This idea acknowledges the fact that many agricultural and manufacturing activities that meet the needs of urban residents take place outside city boundaries, and often in other countries. Further, unsustainable levels of consumption are crucial to understanding the contribution that urban areas are making to climate change.

Besides patterns of consumption, a variety of overriding factors account for the different contributions of urban areas to GHG emissions, both within and across countries, namely:

- The various dimensions of geography that can be broadly categorized as climatic situation, altitude and location in relation to sources of energy resources;

The Challenge of Slums - Global Report on Human Settlements 2003

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- Demographic composition and dynamics of a society given by changing age structures, and the increasing trend towards smaller households;
- Urban form and urban density;
- The types of economic activities that take place within urban areas directly influence GHG emissions.

With so much at stake, *Cities and Climate Change* argues that measuring the city's emissions is an important but arduous challenge. Accordingly, the allocation of responsibility for GHG emissions and climate change is an important global policy debate. Cities will need to act on multiple fronts, in some cases scaling up elements of existing good practice, in others changing established ways of doing business. Ultimately, reducing emissions in cities will depend on long-term planning, largely focused around urban form and the growth of cities, to shift them to a low-carbon path.

To download the full and abridged versions of *Global Report on Human Settlements 2011*, please go to:

<http://www.unhabitat.org/content.asp?typeid=19&catid=555&cid=9272>

Next Issue: Planning and Design for Urban Mobility: Global Report on Human Settlements 2013

The report will review key trends, practices and policies on sustainable mobility and transportation patterns from cities around the world. It will also provide insights on how to improve the working and living conditions of urban populations by meeting their transport needs in an economically, environmentally and socially sustainable manner. The report will be organized as follows:

Chapter 1: The urban mobility challenge
 Chapter 2: Trends and conditions of urban mobility
 Chapter 3: Mass transit: Metros and BRTs
 Chapter 4: Urban goods transport
 Chapter 5: Mobility and urban form
 Chapter 6: Access to urban mobility
 Chapter 7: Urban mobility and the environment
 Chapter 8: The economics of urban mobility
 Chapter 9: Institutions and governance for urban mobility
 Chapter 10: Towards sustainable urban mobility

The report is scheduled to be launched in October 2013