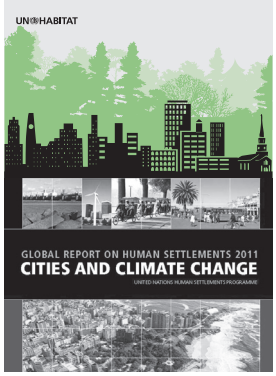

UN-HABITAT

GLOBAL REPORT ON HUMAN SETTLEMENT 2011

EMBARGO - 29 MARCH 2011 - EMBARGO

SOME GRAPHS AND TABLES

TABLE1.1 URBAN POPULATION PROJECTIONS, BY REGION (2010–2030)

Region	Urban population (millions)			Proportion of total population living in urban areas (%)			Urban population rate of change (%change per year)	
	2010	2020	2030	2010	2020	2030	2010–2020	2020–2030
World total	3486	4176	4900	50.5	54.4	59.0	1.81	1.60
Developed countries	930	988	1037	75.2	77.9	80.9	0.61	0.48
North America	289	324	355	82.1	84.6	86.7	1.16	0.92
Europe	533	552	567	72.8	75.4	78.4	0.35	0.27
Other developed countries	108	111	114	70.5	73.3	76.8	0.33	0.20
Developing countries	2556	3188	3863	45.1	49.8	55.0	2.21	1.92
Africa	413	569	761	40.0	44.6	49.9	3.21	2.91
Sub-Saharan Africa	321	457	627	37.2	42.2	47.9	3.51	3.17
Rest of Africa	92	113	135	54.0	57.6	62.2	2.06	1.79
Asia/Pacific	1675	2086	2517	41.4	46.5	52.3	2.20	1.88
China	636	787	905	47.0	55.0	61.9	2.13	1.41
India	364	463	590	30.0	33.9	39.7	2.40	2.42
Rest of Asia/Pacific	674	836	1021	45.5	49.6	54.7	2.14	2.00
Latin America and the Caribbean	469	533	585	79.6	82.6	84.9	1.29	0.94
Least developed countries	249	366	520	29.2	34.5	40.8	3.84	3.50
Other developing countries	2307	2822	3344	47.9	52.8	58.1	2.01	1.70

Source: UN, 2010; see also Statistical Annex, Tables A.1, A.2, A.3, B.1, B.2, B.3

FIG 1.4 GLOBAL ANTHROPOGENIC GHG EMISSIONS

Notes: (a) Global annual emissions of anthropogenic GHGs from 1970 to 2004; (b) share of different anthropogenic GHGs in total emissions in 2004 in terms of CO2 equivalents (CO2eq); (c) share of different sectors in total anthropogenic GHG emissions in 2004 in terms of CO2eq (forestry includes deforestation).

Source: *IPCC, 2007a*

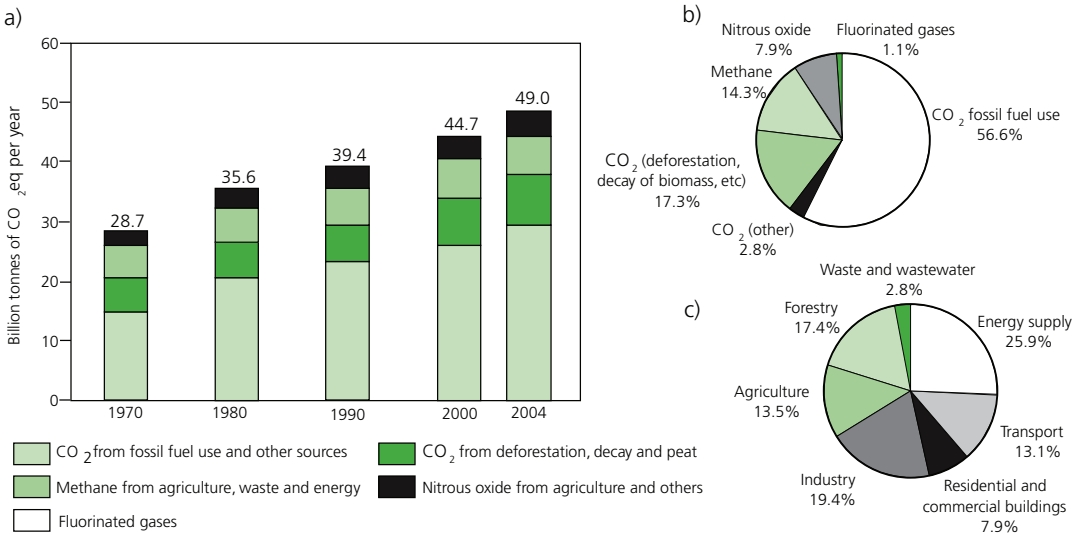

FIGURE 1.5 RELATIONSHIPS BETWEEN URBANIZATION LEVELS AND CO2 EMISSIONS PER CAPITA

Source: Romero Lankao et al, 2008

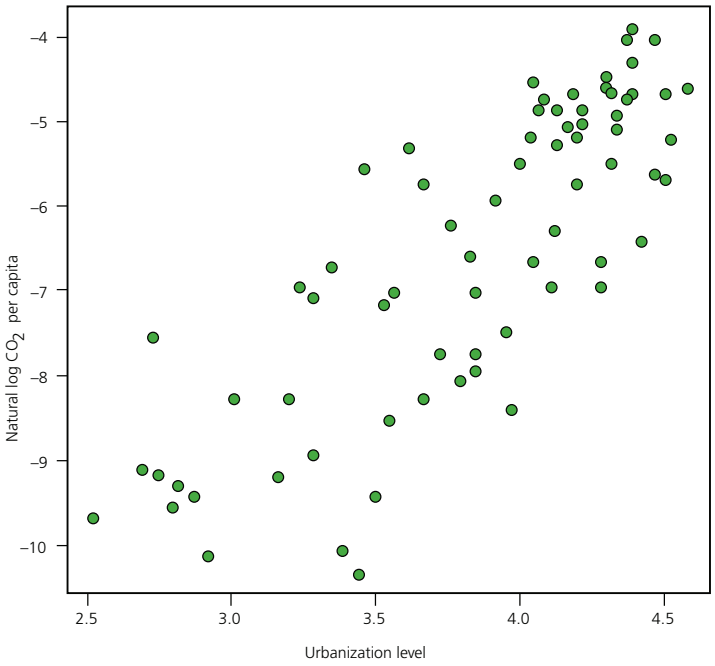

FIGURE 1.6 CARBON INTENSITY AND ECONOMIC DEVELOPMENT (2003)

Source: Romero Lankao et al, 2008

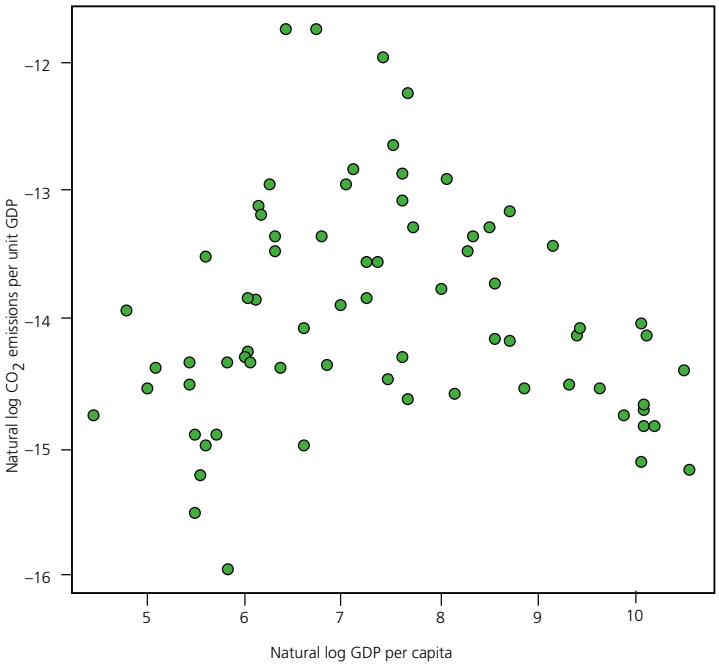

FIGURE 1.5 GHG EMISSIONS INVENTORY, NEW YORK CITY, US

Source: City of New York, 2009

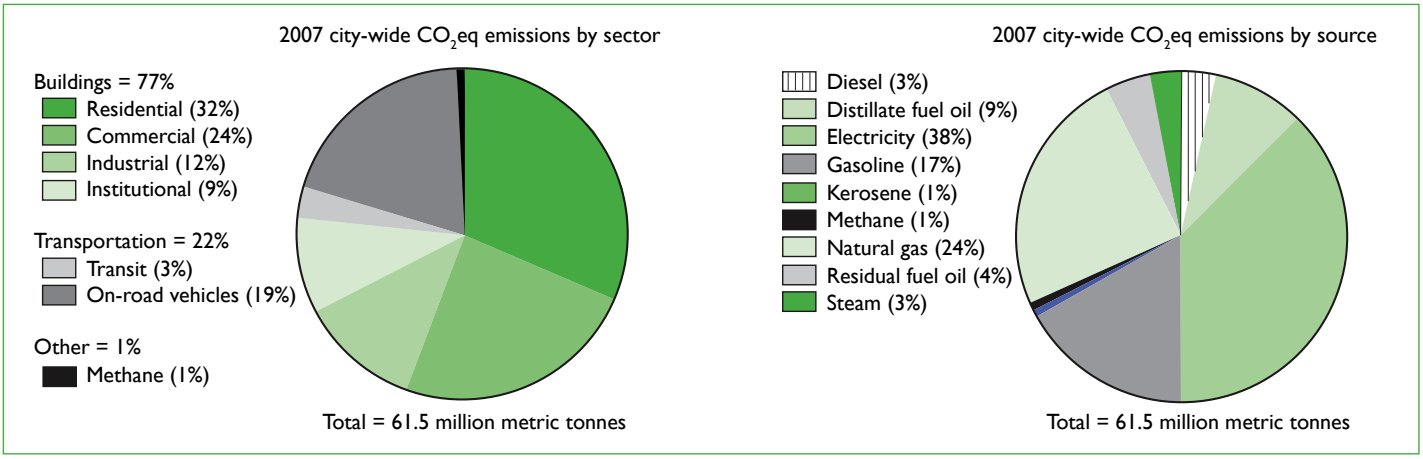

TABLE 3.5 REPRESENTATIVE GHG BASELINES FOR SELECTED CITIES AND COUNTRIES

Country	Annual GHG emissions (tonnes of CO_2 eq per capita)	Year	City	Annual GHG emissions (tonnes of CO_2 eq per capita)	Year
Argentina	7.64	2000	Buenos Aires	3.83	
Australia	25.75	2007	Sydney	0.88	2006
Bangladesh	0.37	1994	Dhaka	0.63	
Belgium	12.36	2007	Brussels	7.5	2005
Brazil	4.16	1994	Rio de Janeiro	2.1	1998
			São Paulo	1.4	2000
Canada	22.65	2007	Calgary	17.7	2003
			Toronto (City of Toronto)	9.5	2004
			Toronto (Metropolitan Area)	11.6	2005
			Vancouver	4.9	2006
China	3.40	1994	Beijing	10.1	2006
			Shanghai	11.7	2006
			Tianjin	11.1	2006
			Chongqing	3.7	2006
Czech Republic	14.59	2007	Prague	9.4	2005
Finland	14.81	2007	Helsinki	7.0	2005
France	8.68	2007	Paris	5.2	2005
Germany	11.62	2007	Frankfurt	13.7	2005
			Hamburg	9.7	2005
			Stuttgart	16.0	2005
Greece	11.78	2007	Athens	10.4	2005
India	1.33	1994	Ahmedabad	1.20	
			Delhi	1.50	2000
			Kolkata	1.10	2000
Italy	9.31	2007	Bologna (Province)	11.1	2005
			Naples (Province)	4.0	2005
			Turin	9.7	2005
			Veneto (Province)	10.0	2005
Japan	10.76	2007	Tokyo	4.89	2006
Jordan	4.04	2000	Amman	3.25	2008
Mexico	5.53	2002	Mexico City (City)	4.25	2007
			Mexico City (Metropolitan Area)	2.84	2007
Nepal	1.48	1994	Kathmandu	0.12	
The Netherlands	12.67	2007	Rotterdam	29.8	2005
Norway	11.69	2007	Oslo	3.5	2005
Portugal	7.71	2007	Porto	7.3	2005
Republic of Korea	11.46	2001	Seoul	4.1	2006
Singapore	7.86	1994			
Slovenia	10.27	2007	Ljubljana	9.5	2005
South Africa	9.92	1994	Cape Town	11.6	2005
Spain	9.86	2007	Barcelona	4.2	2006
			Madrid	6.9	2005
Sri Lanka	1.61	1995	Colombo	1.54	
			Kurunegala	9.63	
Sweden	7.15	2007	Stockholm	3.6	2005
Switzerland	6.79	2007	Geneva	7.8	2005
Thailand	3.76	1994	Bangkok	10.7	2005
UK	10.50	2007	London (City of London)	6.2	2006
			London (Greater London Area)	9.6	2003
			Glasgow	8.8	2004
US	23.59	2007	Austin	15.57	2005
			Baltimore	14.4	2007
			Boston	13.3	
			Chicago	12.0	2000
			Dallas	15.2	
			Denver	21.5	2005
			Houston	14.1	
			Philadelphia	11.1	
			Juneau	14.37	2007
			Los Angeles	13.0	2000
			Menlo Park	16.37	2005
			Miami	11.9	
			Minneapolis	18.34	2005
			New York City	10.5	2005
			Portland, OR	12.41	2005
			San Diego	11.4	
			San Francisco	10.1	
			Seattle	13.68	2005
			Washington, DC	19.70	2005

Note: Sources of the data presented above and details on which emissions have been included in the baselines are specified in the original source.

Source: based on World Bank, undated c

TABLE 3.9 GROUND TRANSPORTATION, FUEL CONSUMPTION AND GHG EMISSIONS, SELECTED CITIES

City	Gasoline consumption (million litres)	Diesel consumption (million litres)	GHG emissions (tonnes CO_2eq per capita)
Denver (US)	1234	197	6.07
Los Angeles (US)	14,751	3212	4.74
Toronto (Canada)	6691	2011	3.91
Bangkok (Thailand)	2741	2094	2.20
Geneva (Switzerland)	260	51	1.78
New York City (US)	4179	657	1.47
Cape Town (South Africa)	1249	724	1.39
Prague (Czech Republic)	357	281	1.39
London (UK)	1797	1238	1.18
Barcelona (Spain)	209	266	0.75

Source: Kennedy et al, 2009b

TABLE 3.16 CO_2 EMISSIONS, POPULATION GROWTH AND NATIONAL INCOME

Income category in 2005	1950–1980		1980–2005	
	Growth in population (%)	Growth in CO_2 emissions (%)	Growth in population (%)	Growth in CO_2 emissions (%)
Low-income countries	36.0	5.6	52.1	12.8
Lower-middle income countries	47.1	39.7	35.7	53.2
Upper-middle income countries	5.7	9.6	5.0	5.0
High-income countries	11.2	45.1	7.2	29.1

Source: Satterthwaite, 2009, p558

TABLE 3.18 URBAN GHG EMISSIONS: PRODUCTION VERSUS CONSUMPTION PERSPECTIVES

Sector	What drives growing GHG emissions in urban areas?	
	Production perspective	Consumption perspective
Energy supply:	A large proportion comes from fossil fuel power stations – hence, a growth in electricity provision from high GHG-emitting sources. Many large fossil fuel power stations are located outside urban areas; but the GHG emissions from the electricity used in urban areas are usually allocated to these urban areas.	GHGs from energy supply now assigned to consumers of energy supplies/electricity, so growth in GHG emissions is driven by increasing energy use; consumers are also allocated the GHGs from the energy used to make and deliver the goods and services that they consume.
Industry:	Growing levels of production; growing energy intensity in what is produced; importance of industries producing goods whose fabrication entails large GHG emissions (e.g. motor vehicles).	GHGs from industries and from producing the material inputs that they draw on no longer allocated to the enterprises that produce them, but rather to the final consumers of the products, so again GHG growth driven by increased consumption.
Forestry and agriculture:	Many urban centres have considerable agricultural output and/or forested areas, but mostly because of extended boundaries that encompass rural areas; from the production perspective, GHGs generated by deforestation and agriculture are assigned to rural areas.	GHGs from these no longer allocated to rural areas (where they are produced), but rather to the consumers of their products (many or most in urban areas); note how energy intensive most commercial agriculture has become; also the high GHG implications for preferred diets among high-income groups (including imported goods, high meat consumption, etc.).
Transport:	Growing use of private motor vehicles; increases in average fuel consumption of private motor vehicles; increased air travel (although this may not be allocated to urban areas).	As in the production perspective; GHG emissions from fuel use by people travelling outside the urban area they live in are allocated to them (thus, includes air travel); also concern for GHG emissions arising from investment in transport infrastructure.
Residential/ commercial buildings:	Growth in the use of fossil fuels and/or growth in electricity use from fossil fuels for space heating and/or cooling, lighting and domestic appliances.	As in the production perspective, but with the addition of GHG emissions arising from construction and building maintenance (including the materials used to do so).
Waste and wastewater:	Growing volumes of solid and liquid wastes and of more energy-intensive waste.	Large and often growing volumes of solid and liquid wastes with GHGs; these are allocated to the consumers who generated the waste, not to the waste or waste dump.
Public sector and governance:	N/A	Conventional focus of urban governments on attracting new investment, allowing urban sprawl and heavy investment in roads, with little concern for promoting energy efficiency and low GHG emissions.

Notes: For a discussion of mitigation action based on these two perspectives, see Table 5.11. N/A = not available.

Source: based on Satterthwaite, 2009, pp548–549

FIGURE 4.2 WORLD POPULATION AND RECORDED NATURAL AND TECHNOLOGICAL DISASTERS (E.G. INDUSTRIAL AND TRANSPORT ACCIDENTS) (1950–2005)

Source: UN-Habitat, 2007, p170

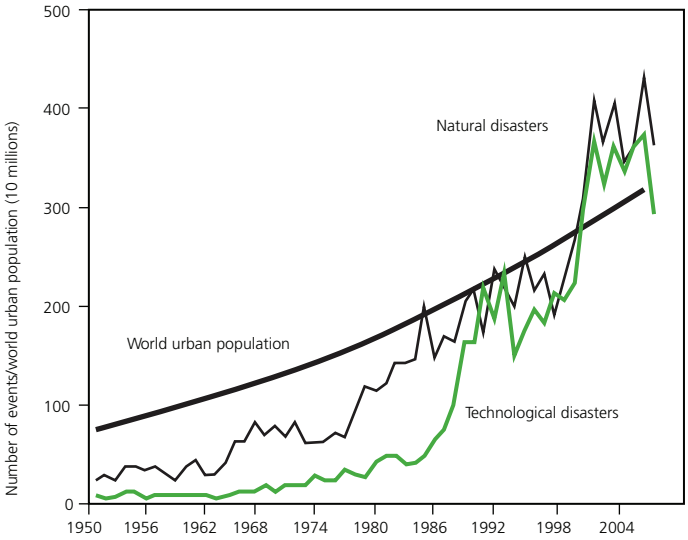

TABLE 5.1 CITIES AND THE MITIGATION OF CLIMATE CHANGE

Part of the problem	Part of the solution
• In 2010, half of the world's population lived in cities.[a] • Between 2010 and 2020, 95% of the global population growth (766 million) will be urban residents (690 million), and the bulk of these (632 million) will be added to the urban population of developing countries.[a] • Between 2000 and 2010, the number of slum dwellers in developing countries increased from 767 million to 828 million. The figure might reach 889 million by 2020.[b] • Cities represent concentrations of economic and social activities that produce GHG emissions.[c] • Cities and towns produce between 40 and 70 per cent of global anthropogenic GHG emissions.[c] • By 2030, over 80 per cent of the increase in global annual energy demand above 2006 levels will come from cities in developing countries.[d]	• Municipal authorities have responsibility for many processes that affect GHG emissions at the local level. • Municipalities can act as a 'laboratory' for testing inno vative approaches. • Municipal authorities can act in partnership with private-sector and civil society actors. • Cities represent high concentrations of private-sector actors with growing commitment to act on climate change. • Cities provide arenas within which civil society is mobilizing to address climate change.

Sources: a UN, 2010; b UN-Habitat, 2010; c see Chapter 3; d IEA, 2008, 2009

FIGURE 5.1 THE 'LOW HANGING FRUITS' OF URBAN GHG MITIGATION

Source: ICLEI, 2010, p9

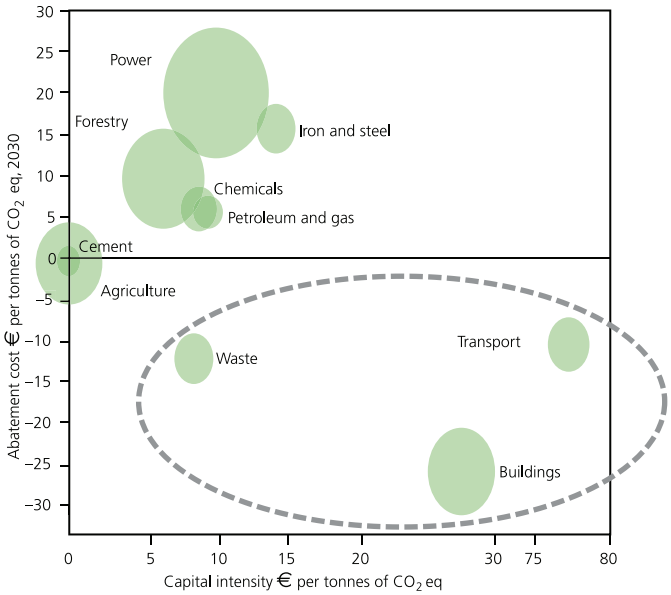

TABLE 5.11 MITIGATING URBAN GHG EMISSIONS: PRODUCTION VERSUS CONSUMPTION PERSPECTIVES

Sector	What can stop or reduce the growth in urban GHG emissions?	
	Production perspective	Consumption perspective
Energy supply	A shift to less GHG-emitting power generation and distribution; incorporation of electricity-saving devices; an increase in the proportion of electricity generated from renewable energy sources and its integration into the grid; carbon capture and storage.	As in the production perspective, but also a greater focus on less consumption among high-consumption households; a shift to less GHG-intensive consumption.
Industry	A shift away from heavy industries and from industry to services; increasing energy efficiency within enterprises; capture of particular GHGs from waste streams.	As in the production perspective but with an extra concern to reduce the GHGs embedded in goods consumed by residents and to discourage consumption with high GHG emissions implications.
Forestry and agriculture	N/A (as no emissions are assigned to urban areas).	Encouraging less fossil fuel-intensive production and supply chains for food and forestry products; addressing the very substantial non-CO_2 GHG emissions from farming (including livestock); forestry and land-use management practices that contribute to reducing global warming.
Transport	Increasing the number of trips made on foot, by bicycle, on public transport; a decrease in the use of private motor vehicles and/or a decrease in their average fuel consumption (including the use of vehicles using alternative fuels); ensuring that urban expansion avoids high levels of private motor vehicle dependence.	As in the production perspective but with a stronger focus on reducing air travel and a concern for lowering the GHG emissions implications of investments in transport infrastructure.
Residential/ commercial buildings	Cutting fossil fuel/electricity use, thus cutting GHG emissions from space heating (usually the largest user of fossil fuels in temperate climates) and lighting; much of this is relatively easy and has rapid paybacks.	As in the production perspective but with an added interest in reducing the CO_2 emissions embedded in building materials, fixtures and fittings.
Waste and wastewater	Reducing volumes of wastes, and waste management that captures GHGs.	As in the production perspective but with a new concern to reduce waste flows that arise from consumption in the city but contribute to GHGs outside its boundaries.
Public sector and governance	N/A (as no emissions are acknowledged).	Governance that encourages and supports all the above; also a strong focus on lowering GHG emissions through better management of government-owned buildings and public infrastructure and services; includes a concern for reducing GHG emissions generated in the building of infrastructure and the delivery of services.

Notes: Based on the discussion of GHG emission drivers in Table 3.18.
N/A = not available.

Source: based on Satterthwaite et al, 2009b, pp548–549