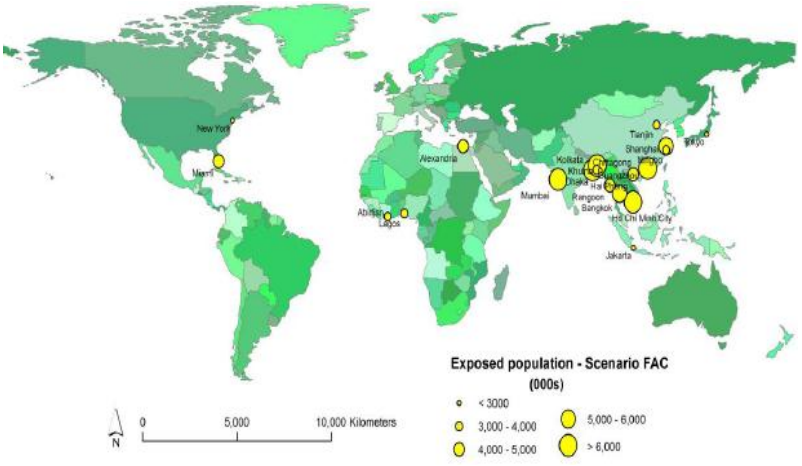
CITIES AND CLIMATE CHANGE: KEY MESSAGES FROM THE OECD

- ***Cities are major contributors of CO_2 emissions.*** They are home to more than 50% of world population and $^2/_3$ of total energy use worldwide – and that share is growing. Urbanisation is a driver of changes in per-capita and total greenhouse gas emissions worldwide.

- ***Urban populations and infrastructure are vulnerable to climate change.*** Coastal cities are particularly exposed to rising sea levels and storm surges due to climate change (*e.g.* compared to today's levels of exposure, a 50-cm sea level rise by 2070 could expose three times as many people and ten times as many assets to coastal flooding in large global port cities). Urban heat island effects will exacerbate the effects of global warming in all cities. The poorest populations will be more affected as they have fewer resources to respond.

Top 20 Port Cities for Exposed Population

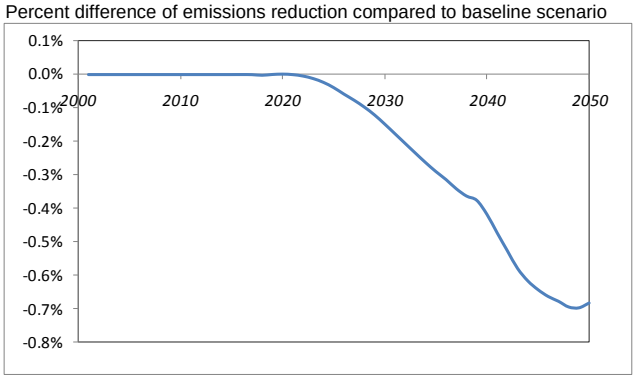
Future climate, subsidence and socio-economic scenario, 2070s



Source: Nicholls, R. *et al.* (2008), "Ranking Port Cities with High Exposure and Vulnerability to Climate Extremes", OECD Environment Working Paper No. 1.

OECD CO_2 Emission Reductions with Densification Policy

Percent difference of emissions reduction compared to baseline scenario



Source: Simulations from IMACLIM-R model using OECD Metropolitan Database.

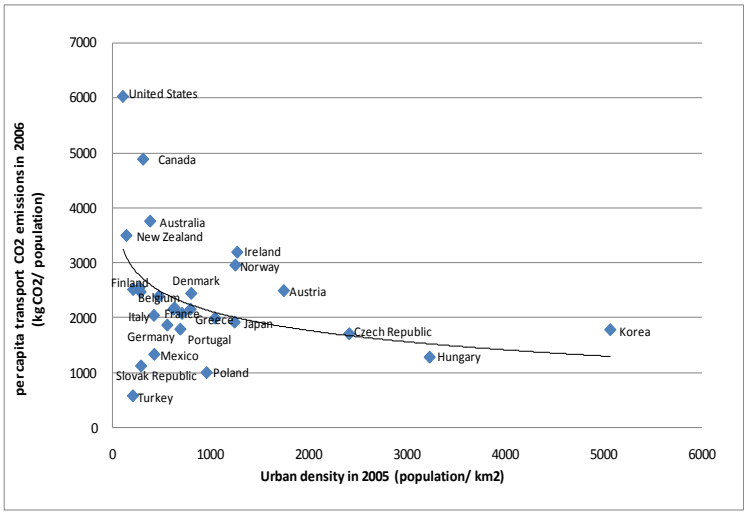
- ***Urban policies can contribute to a global greenhouse gas mitigation agenda.*** Urban policies (*e.g.* densification or congestion charges) can complement global climate policies (*e.g.* linked-up cap-and-trade systems) to reduce energy demand and greenhouse gas emissions, and lower the overall cost of emissions abatement.

- ***Synergies between economic growth and climate change action may be strongest at the urban level.*** Cities that address greenhouse gas emissions will also curb local pollution – while metro regions that continue to pollute risk becoming comparatively less attractive. Similarly, cities that act to build resilience to climate change also increase the security of local populations to extreme weather events, which can enhance local safety and the quality of life in these locations.

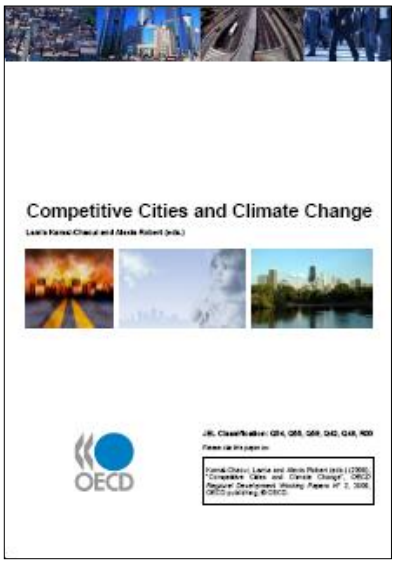
- ***Lifestyles and sprawl, not urbanisation, are at the heart of the problem.*** Urban sprawl has increased greatly worldwide. For example, urban land area in the OECD has doubled and outside the OECD has grown by a factor of five since the mid 1950s. The suburbs have grown faster than the urban core in 66 of 78 OECD metro regions. CO_2 emissions per capita drop significantly as urban areas densify.

- ***Successful "compact cities" rely on transportation linkages, mixed land uses, and high quality urban services*** (*e.g.* the Netherlands, the United Kingdom, Ile-de-France's master plan, Japan's "Eco-Compact City" policy). As urban spatial and strategic planning shape the built environment over the long term – including travel distances and development in vulnerable areas – they provide a key entry point for low-carbon development and adaptation planning.

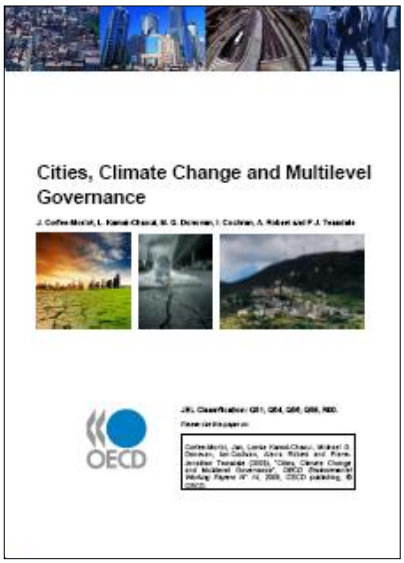
Per Capita CO_2 Emissions Produced by Transport Activities and Density of Predominantly Urban Areas



Source: OECD Regional Database; IEA (2008), *CO_2 Emissions from Fuel Combustion*, OECD/IEA, Paris.



- ***Cities serve as policy laboratories for action on climate change,*** even in the absence of national policy. Cities can work with the private sector to conserve energy (British Columbia) or realize profits through green industries (Kitakyushu, Japan), and can increase consumers' preferences for green products through awareness-raising programs (Blacktown, Australia).
- ***Climate policy packages should seek policy complementarities*** among and within urban sectors to enhance each policy's effectiveness, *e.g.* coupling congestion fees and bus service improvements (London).
- ***Important opportunities exist at the urban level to develop and exploit adaptation and mitigation win-wins.*** For example, better building insulation will reduce emissions, protect against extreme temperatures, and lower cooling costs as temperatures rise.
- ***Climate change puts additional pressure on city budgets.*** Local governments in OECD countries are already responsible for 70% of public investment and 50% of public spending in environment. Cities will need additional revenue sources to finance new mass transit solutions, building retrofits and protections for the built environment.
- ***Local fiscal policies can be greened,*** *e.g.* through congestion charges, reforming property taxes that favour sprawl, greening the tax system (Netherlands), urban cap-and-trade mechanisms (Los Angeles, Chicago and Santiago) and intergovernmental grants for local environmental spending (Portugal, Germany, Brazil, Sweden, US).
- ***Cities could also benefit from new financial instruments*****,** such as simplified, multisectoral urban involvement in the Clean Development Mechanism, Joint Implementation and voluntary carbon markets, as well as generally greater access to international and domestic capital markets (*e.g.* through green bonds).
- ***Cities can be effective in greening industrial production and fostering eco-innovation.*** Urban regions already produce 10 times more renewable technologies patents than rural regions. Cities can also enable green R&D through joint ventures (Lahti Cleantech, Finland).
- ***A robust framework for multilevel governance can advance climate change action*** across all levels of government and involve relevant stakeholders to avoid policy gaps between local and national action plans (vertical coordination) and to encourage learning between departments or institutions in local and regional governments (horizontal coordination).
- ***National policies and enabling frameworks can empower local governments*** and leverage existing local policy experiments, accelerate policy responses and learning, foster resource mobilisation and help to engage local stakeholders in responding to climate change.
- ***Urban planning provides a key entry point to act on the adaptation agenda*** for example, by identifying changes in flood plains, zoning land for uses that do not exacerbate climate impact risk, designing and implementing climate-sensitive water management strategies, and developing local early warning systems and disaster management plans. (See also related OECD publication *Integrating Climate Change Adaptation into Development Cooperation.*)



- ***Lessons learnt at local levels can be used to modify and fine-tune national enabling frameworks*** and disseminate best practices horizontally, achieving more efficient local implementation of climate strategies.
- ***Central governments will need to create a sound institutional foundation and knowledge base to support local decision makers in identifying cost-effective actions.*** Essential tools include harmonised local greenhouse gas inventory methods, boundary organisations to generate regional science-policy or economic-policy information in consultation with local stakeholders, and the development of strong urban climate policy networks.
- ***Financing local adaptation measures is necessary*** and may occur by support from central governments (or international assistance) in allocating financial resources for climate-sensitive infrastructure, offering education and skills training through extension programmes and projects, and assisting with the transfer and uptake of appropriate technologies.

Contacts: Lamia Kamal-Chaoui (lamia.kamal-chaoui@oecd.org) and Jan Corfee-Morlot (jan.corfee-morlot@oecd.org).