Better Cities in a New Climate Economy

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CAPE conference: investing in cities

12th November, 2015
The New Climate Economy Project

Global Reports

Commissioned by 7 countries: Colombia, Ethiopia, Indonesia, Norway, Sweden, South Korea, United Kingdom

Led by a Global Commission: 28 former heads of state, CEOs and heads of international institutions. Chaired by Felipe Calderon, former President of Mexico

Overseen by an Economic Advisory Panel of 14 world leading economists, chaired by Professor Lord Nicholas Stern

Country Case Studies, including India

Delivered by 8 research institutes:

Contributions from 120+ organisations
Members of the Global Commission on the Economy and Climate

Felipe Calderón (Chair)
Former President, Mexico

Nicholas Stern (Co-Chair)
IG Patel Professor at the London School of Economics and Political Science

Ingrid Bonde
CFO and Deputy CEO, Vattenfall

Sharan Burrow
General Secretary, International Trade Union Confederation

Suma Chakrabarti
President, EBRD

Chen Yuan
Former Chairman, Chinese Development Bank

Helen Clark
Administrator, UNDP

Luísa Diogo
Former Prime Minister, Mozambique

Dan Doctoroff
Former President and CEO, Bloomberg

S. (Kris) Gopalakrishnan
Co-founder, Infosys

Angel Gurría
Secretary General, OECD

Chad Holliday
Chairman, Royal Dutch Shell

Sri Mulyani Indrawati
Managing Director and COO, World Bank

Nina Lal Kidwai
Chairman, HSBC India

Caio Koch Weser
Vice Chairman, Deutsche Bank

Ricardo Lagos
Former President, Chile

Michel Liès
CEO, Swiss Re

Kristin Skogen Lund
Director General, Confederation of Norwegian Enterprise

Trevor Manuel
Former Finance Minister, South Africa

Takehiko Nakao
President, Asian Development Bank

Ngozi Okonjo-Iweala
Former Minister of Finance, Nigeria

Eduardo Paes
Mayor, Rio de Janeiro

Annise Parker
Mayor, Houston

Paul Polman
CEO, Unilever

Christian Rynning-Tønnesen
CEO, StatKraft

Jean Pascal Tricoire
CEO, Schneider Electric

Maria van der Hoeven
Executive Director, International Energy Agency

Zhu Levin
Former CEO, China International Capital Corporation

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Zhu Levin
Former CEO, China International Capital Corporation
Opportunity: NCE identifies key drivers of growth and climate performance

Higher quality, more resilient, inclusive growth

1 Includes urban transport
2 Includes forests
3 Includes economy-wide innovation
Cities are key drivers of economic growth

52% of Population

80% of GDP

- Urban share of global population is expected to rise to 70% by 2050
- China and India alone will account for 50% of the growth in urban population
- Africa’s urban population will triple by 2050


Cities are at the heart of successful economic transformation

1 Definition of urbanization varies by country; pre-1950 figures for the United Kingdom are estimated.
2 Historical per capita GDP series expressed in 1990 Geary-Khamis dollars, which reflect purchasing power parity.

Source: McKinsey Global Institute, Population Division of the United Nations; Angus Maddison via Timetrics; Global Insight; Census reports of England and Wales; Honda in Steckel & Floud, 1997; Bairoch, 1975
The global urban area will triple by 2030: equivalent to adding an area greater than the size of Manhattan each day.

Stock of motorcars

- 250 million in 1970
- 1 billion in 2010
- 3 billion? in 2050
None of the world’s top 50 cities by population meet WHO air quality standards
Traffic congestion is costing some cities greater than 4% of GDP

Cost of traffic congestion as a percentage of GDP in selected cities

<table>
<thead>
<tr>
<th>City</th>
<th>Percentage of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing</td>
<td>4.2%</td>
</tr>
<tr>
<td>Dublin</td>
<td>4.1%</td>
</tr>
<tr>
<td>Cairo</td>
<td>4.0%</td>
</tr>
<tr>
<td>Manila</td>
<td>4.0%</td>
</tr>
<tr>
<td>Dakar</td>
<td>3.4%</td>
</tr>
<tr>
<td>Mexico City</td>
<td>2.6%</td>
</tr>
<tr>
<td>San Paulo</td>
<td>2.4%</td>
</tr>
<tr>
<td>Bangkok</td>
<td>2.1%</td>
</tr>
<tr>
<td>Kuala Lumpur</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Sprawl costs the United States over $1 trillion per annum

Sprawl costs in the United States per annum
Billion US$

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Total Public Cost</th>
<th>Total Private Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollution, congestion, noise, etc</td>
<td>~$217 billion</td>
<td>~$410 billion</td>
</tr>
<tr>
<td>Increased public service costs</td>
<td>~$90 billion</td>
<td>~$640 billion</td>
</tr>
<tr>
<td>Crash costs</td>
<td>~$72 billion</td>
<td>~$1050 billion</td>
</tr>
<tr>
<td>Increased infrastructure capital costs</td>
<td>~$31 billion</td>
<td></td>
</tr>
<tr>
<td>Vehicle costs</td>
<td>~$606 billion</td>
<td></td>
</tr>
<tr>
<td>Active transport value</td>
<td>$27 billion</td>
<td></td>
</tr>
<tr>
<td>Ongoing municipal and utility costs</td>
<td>$7 billion</td>
<td></td>
</tr>
<tr>
<td>Development capital costs</td>
<td>$3 billion</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>~$400 billion</td>
<td>~$600 billion</td>
</tr>
</tbody>
</table>

Source: Litman (2014) for New Climate Economy commissioned by LSE Cities.
Note: these denote the potential savings from smart growth policies. See Litman, T., 2014 (forthcoming). Analysis of Public Policies that Unintentionally Encourage and Subsidize Urban Sprawl for detail of underlying data sources.
“Business as Usual” urbanisation is creating economic and wider costs which risk undermining prosperity

- An increase in the urban infrastructure gap due to unplanned urban growth
- Growing costs of traffic congestion
- Rising cost of air pollution
- Lock-in of inefficiently high levels of energy consumption
- Increasing social exclusion
- Other costs: road safety, health costs, reducing ecosystem services
Rapidly urbanizing countries have an opportunity to pursue a different model of urban development: most of urban Africa is yet to be built.

About 56% of the African population is expected to be urban by 2050 – an additional 1 billion people.

SOURCE: LSE Cities based on United Nations World Urbanization Prospects, 2014 Revision
The Global Commission recommends 10 transformative actions

1. Integrate climate risk into strategic decisions
2. Secure a strong international climate agreement
3. End perverse subsidies
4. Price carbon to send a clear market signal
5. Scale-up low-carbon innovation
6. Reduce the cost of capital for low-carbon investment
7. Move toward more compact, connected, efficient cities
8. End deforestation
9. Restore degraded lands
10. Phase out unabated coal fast

Source: NCE. For details please see the NCE Global Action Plan (2014)
Driving low carbon urban development is a $17 trillion global economic opportunity to 2050 based on energy savings alone.

Source: Leeds University for New Climate Economy
This story is corroborated by city level evidence

Annual energy savings equivalent to **1.7-9.5%** of annual city-scale GDP in 2025.

Average investment of **US$3.2 billion** required across the six cities, with payback period **<5 years**.

Emission reductions of **14-24%** by 2025 relative to BAU through economically attractive options

A different model of urban development is possible: Compact, connected, coordinated urban growth

**ATLANTA**

Atlanta’s built-up area

- Population: **5.26 million**
- Total area: **16,605 km²**
- Urban area: **7692 km²**
- Transport carbon emissions: **6.9** tonnes CO₂ p.c.

**BARCELONA**

Barcelona’s built-up area

- Population: **5 million**
- Total area: **3263 km²**
- Urban area: **648 km²**
- Transport carbon emissions: **1.2** tonnes CO₂ p.c.

Transformative transport investments have significant economic benefits

Wider benefits of the Rea Vaya BRT system in Johannesburg

USD million

- Travel time savings: 331
- Improved road safety: 268
- Increased physical activity: 141
- Vehicle operating cost reductions: 170
- Travel time lost (construction): -38
- CO2 emissions reduction: 18

Total benefits: US$892 million

Better transport, better city? How high quality public transport affects city competitiveness

Mass transit plays a major role in reducing urban emissions, and leads to better growth.

Is public transport essential for city success?

Public transport v’s Quality of life

Public transport v’s productivity

* Determined by composite rankings against a range of indicators. Based on ranking of 24 international cities with #24 being the top rank. For more information on these see PwC Cities of Opportunity available at [http://www.pwc.com/us/en/cities-of-opportunity/](http://www.pwc.com/us/en/cities-of-opportunity/)
Change is happening: this needs to be scaled rapidly

Source: Embarq 2013
Recommendations of Global Commission (1)

1. BETTER URBANISATION
   - Make better planned urban development a central element of national economic development strategies

2. FISCAL AUTONOMY
   - Consider greater fiscal autonomy for cities to unleash investment in smarter urban infrastructure

3. TAX REFORM
   - Eliminate fuel subsidies, congestion charging, land and development taxes, density bonuses

4. REGULATORY REFORM
   - Minimum density standards, maximum parking requirements, growth boundaries
Recommendations of Global Commission (2)

5. REDIRECT INVESTMENT
- Redirect existing infrastructure funding towards more compact, connected and coordinated urban infrastructure, including MDB financing

6. PLANNING AND GOVERNANCE
- Strengthen role of strategic planning at national, regional, and city levels including setting up integrated land use and transport authorities

7. FINANCING MODELS
- Land Value Capture, enhancing own source revenue to boost creditworthiness, ‘city bonds’
A shift is required in the $90 trillion of infrastructure capital that will be spent over the next 15 years alone.

GLOBAL INVESTMENT REQUIREMENTS; 2015 TO 2030, US$ TRILLION, CONSTANT 2010 DOLLARS

Indicative figures only
High rates of uncertainty

Investing $1 dollar in improving creditworthiness of cities can leverage more than $100 in private finance smarter urban infrastructure

**Kampala** - Increased locally generate revenue by 86% within a year

**Lima** – Secured a credit rating that allowed it to co-finance its BRT system with a loan from a commercial bank

Significant opportunity but is realizing an Africa Urban Dividend in jeopardy?

Source: Ivan Turok
The ‘how’ is as important as the ‘what’

% total asset value invested in Bus Rapid Transit

Lagos

Dar es Salaam
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