Opportunities for Cobenefits in City Planning

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Clean Air Asia

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Mission: to promote better air quality and livable cities by translating knowledge to policies and actions that reduce air pollution and greenhouse gas emissions from transport, energy and other sectors.

UN recognized Partnership of 240 organizations, 8 Country Networks and CAI-Asia Center as its secretariat

Established in 2001 by ADB, World Bank and USAID, and operates independently since 2007
Plans at national and city levels

- National Development plans
- Energy
- Climate
- Environment
- Disaster Risk Management

Urban Development Master Plan
- Socio-economic plan

Air quality + Climate Change
Status of Climate Change Plans

- Only 29 (3%) of 865 Asian cities surveyed have climate change plans.
- Climate change not mainstreamed in urban development plans (2 of 25 plans surveyed mention climate change).
- 18 (86%) of 21 Asian countries surveyed have a National Climate Change Plans – catalyst?
- 45% of C40 cities have plans – trend?

China: Baoding, Chongqing, Guiyang, Hangzhou, Nanchang, Shenzhen, Tianjin, Xiamen
India: Ahmedabad, Assam*, Chennai Delhi, Gorakhpur, Indore, Orissa*, Surat (*state plans for its cities)
Indonesia: Bandar Lampung, Semarang
Japan: Tokyo, Yokohama
Korea: Seoul
Singapore: Singapore
Thailand: Bangkok, Chang Rai, Hat Yai
Vietnam: Can Tho Danang, HCMC, Qui Nhon

Source: Clean Air Asia, CDIA, 2012 (support from GIZ)
# Climate Change Plans Content

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**Urban Planning**

City Greening and Biodiversity

New Buildings

Source: [http://live.c40cities.org/cities/](http://live.c40cities.org/cities/)
Why plans must cover more than CO$_2$

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<td>2002</td>
<td>UNEP 1st Impact Assessment on ABCs</td>
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<td>2007</td>
<td>IPCC Climate Change 2007: The Physical Basis</td>
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<tr>
<td>2010</td>
<td>HTAP Taskforce HTAP 2010: Part A: Ozone &amp; Fine Particles</td>
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<td>2011</td>
<td>UNEP/WMO Integrated Assessment of BC &amp; Tropospheric Ozone</td>
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<td>2011</td>
<td>AMAP Impact of BC on Artic Climate</td>
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<tr>
<td>2012</td>
<td>US EPA: Reducing BC Emissions in South Asia</td>
</tr>
<tr>
<td>2012</td>
<td>WHO: Health Effects of BC</td>
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</table>
Why plans must cover more than CO₂

Source: Climate and Clean Air Coalition, http://www.unep.org/ccac
Why plans must cover more than CO₂

**Countries**
- Health
- Air pollution
- Traffic congestion
- Road safety
- Economic development
- Fuel security
- Energy efficiency

**(many) Donors**
- Climate change
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Clean Air Plans

RECENT DEVELOPMENTS
- Cambodia: Phnom Penh
- Indonesia: Palembang, Solo
- Lao PDR: Vientiane
- Philippines: Iloilo, Cagayan de Oro
- Thailand: Chiang Mai, Korat
- Vietnam: Bac Ninh

CONTENTS
- Where are we now?
  - AQ levels
  - Management
  - Existing policies and actions
- Where do we want to go?
  - Goals and targets
- How do we get there?
  - Policies and actions
  - Roles + responsibilities
  - Budget + timeline
  - Progress monitoring and evaluation
Opportunities to link existing local plans/programs with air quality and climate change
Transport Plans: mix of Avoid - Shift - Improve policies

Demand Management Development

- Avoid
  - Freight VKT avoidance
  - Motorized urban VKT avoidance

- Shift
  - Shift freight to rail
  - Shift to urban public transport

- Improve
  - Alternative fuels
  - Alternative vehicles
  - Fuel economy improvements - freight
  - Fuel economy improvements - passenger
  - Intelligent transport systems

Source: CAI-Asia /ITPS, 2010
International Study of Transport Systems in a Low Carbon Society, Southeast Asian Region
Transport Plans: maximizing emission reductions from transport projects

TEEMP: Transport Emissions Evaluation Model for Projects

- Free excel-based spreadsheet models
- Low cost applications: uses data required for economic analysis of projects
- Estimates emissions with and without transport projects and policies
- Adds the emissions dimension to transport investment and policy decisions
- Potential for NAMAs
- Applied to transport projects in 20+ cities

1. Bikeways
2. Bike sharing schemes
3. BRT
4. LRT/MRT
5. Pedestrian facility improvements
6. Roads
7. TDM Strategies
8. Multiple projects/plans (TEEMP City)
Transport Plans
TEEMP: Emission savings

Source: CAI-Asia, ITDP, 2011
Rapid Assessment of City Emissions (RACE) tool for transport and energy

- CO₂ and air pollutants
- Integrates land use, transport planning and energy use

- Used by:
  - Cities for improved urban planning
  - Investors for selecting low emissions development investment areas
  - Governments for determining NAMAs?

Urban Development Plans

ADB
Clean Air Asia
Chreod
Steps in applying RACE

Baseline Inventory (2010)
- People
- Land uses
- Building areas and use
- Transport systems

Development Scenario (2030)
- Economic development
- Demographics
- Building stock and use
- Energy

Business as Usual Development Option (2030)
- Location of growth
- Density of growth
- Land use & transport interface

Low Emissions Development Option (2030)

RACE Tool: Energy and emissions (CO₂, PM, NOₓ)
For buildings and transport using ASIF approach

Compare Development Options

Decision Making

Source: CAI-Asia, CREOD, ADB 2012
What options work to address the root cause of emissions?

Mixed land use ● Public transport ● Non-motorized transport ● Cleaner energy sources ● Energy efficient buildings

Develop 4 medium density communities in adjacent districts
Develop 5 sub centers within inner road
Develop 4 high density residential communities within inner road
Mixed land use in new Thu Tiem district
New high & medium density corridor along metro line
Industrial consolidation

HCM City

Source: CAI-Asia, Creod, ADB, 2012
Low emissions urban development

Ho Chi Minh City 2010
Low emissions urban development

Ho Chi Minh City 2030 BAU
Ahmedabad
Transport CO2: 38%, PM 60%
Electricity CO2 61%, PM 45%

Colombo
Transport CO2: 15%, PM 32%
Electricity CO2 30%, PM 68%

Ho Chi Minh
Transport CO2: 33%, PM 30%
Electricity CO2 40%, PM 38%

Low Emissions 2030
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Clean Air Asia Country Networks
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Donors in 2012 to 2013

http://cleanairinitiative.org/portal/node/11573