Understanding the Problem through Benchmarking Methods

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Transport, Air Quality and Climate Change
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Outline

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- Benchmarking AQM Process
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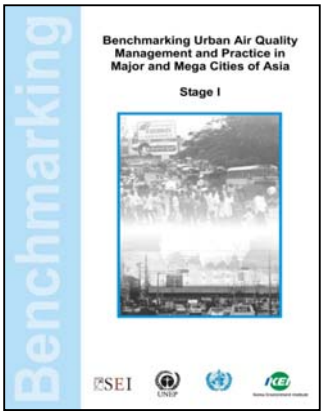
CAI-Asia Mission and Pillars

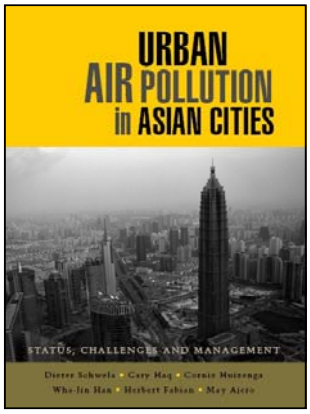
- CAI-Asia promotes and demonstrates innovative ways to improve the air quality of Asian cities through sharing experiences and building partnerships.
- CAI-Asia is widely acknowledged for its role as regional convener and information exchange facilitator on the subject of urban air quality in Asia.

Benchmarking Study

Benchmarking Study Phase 1



Benchmarking Study Phase 2



2002

- 12 cities in Asia
- benchmarking using questionnaire and short city profile information

2006

- 20 cities in Asia
- updated Phase 1 questionnaire
- more comprehensive analysis of air quality levels (long-term data), AQ standards and management capabilities of cities

Benchmarking AQM Process

AQM Questionnaire

1. Air quality measurement capacity	2. Data assessment and availability
3. Emissions estimates	4. Management enabling capabilities

25 scores each index

The Benchmarking study involved 20 cities in Asia representing various economic levels and geographic coverage.

Bangkok	Ho Chi Minh	Seoul
Beijing	Jakarta	Shanghai
Busan	Kathmandu	Surabaya
Colombo	Manila	Singapore
Dhaka	Mumbai	Taipei
Hanoi	New Delhi	Tokyo
Hong Kong	Kolkata	

City AQM Profile
- General information
- Description of pollution sources
- Air Quality Data
- Impacts of air pollution
- Policies, Programs and Projects
- Conclusions

Review and validation

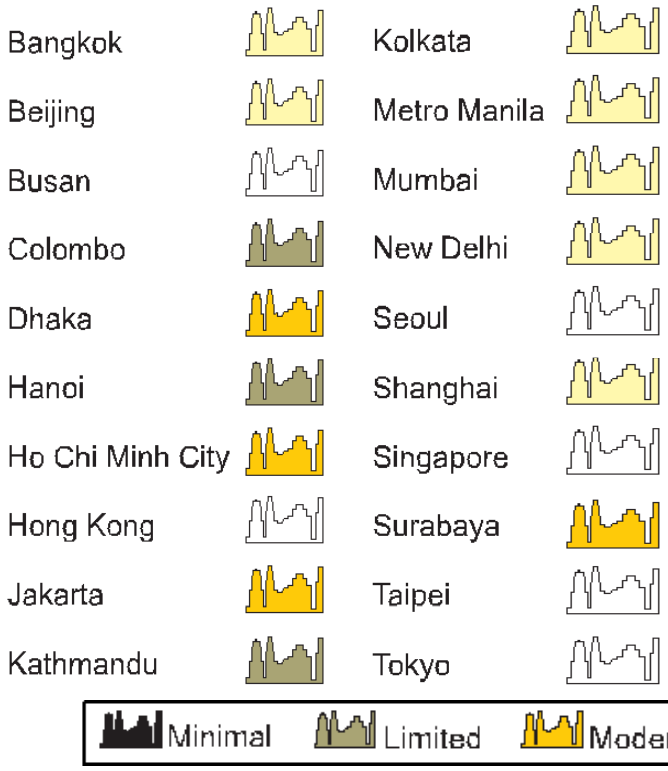
- Answers provided in the questionnaires are validated by information collected for city profile.
- City profiles and questionnaires have been reviewed by air quality experts in the city as well as international AQM experts.

Benchmarking Study Results: Measurement of Air Quality

This index assesses the ambient air monitoring taking place in a city and the accuracy and precision and representativeness of the data collected.

- The number and location of existing monitoring stations are generally not representative of the population
- There is wide diversity on the type of monitoring (continuous or manual), frequency and coverage (pollutants monitored) between cities.
- The lack of programs to ensure the sustainability of operations of AQ monitoring stations and regular maintenance of equipment have caused degradation and inoperability of several AQ monitoring stations.

Benchmarking Study Results: Air Quality Management



This index asseses the administrative and legislative framework through which emission control strategies are introduced to manage air quality.

- All countries have ambient AQ standards in place but there is need to review these air quality standards in view of the EU limit values, revised USEPA standards and WHO guideline values.
- Most cities have emissions controls imposed for mobile and industry sectors but only Hong Kong, Singapore and Tokyo have emissions controls during pollution episodes.

Benchmarking Study Results: AQM Capabilities of Cities

- Cities with high levels of economic development tend to have well-developed AQM systems
- Benchmarking of AQM capability can assist cities in setting priorities and developing strategies for strengthening their AQM capability

Capability Scoring	Capability Classification	Cities
91-100	Excellent I	Hong Kong, Singapore, Taipei, Tokyo
81-90	Excellent II	Bangkok, Seoul, Shanghai
71-80	Good I	Beijing, Busan
61-70	Good II	New Delhi
51-60	Moderate I	Ho Chi Minh Jakarta, Kolkata, Metro Manila, Mumbai
41-50	Moderate II	Colombo
31-40	Limited I	Hanoi, Surabaya
21-30	Limited II	Dhaka, Kathmandu
0-20	Minimal	-

Benchmarking Method: Advantages/Disadvantages

Advantages

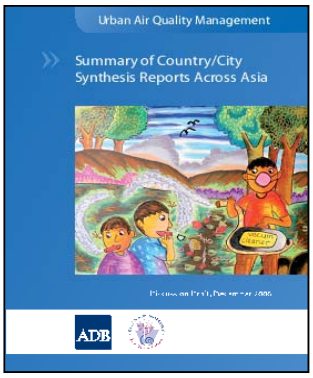
- Streamline collection efforts
- Qualitative to quantitative
- Allows comparisons between cities
- Improves data-sharing culture

Disadvantages

- Discard quality data not within scope
- Quantitative approach limits the explanation on extent of capacity
- Sensitivity of cities and countries with numbers and graphs
- Availability of original data

Increasing understanding of PRC AQM (1)

Country/City Synthesis Reports (CSR)



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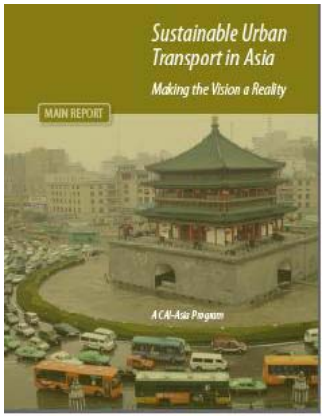
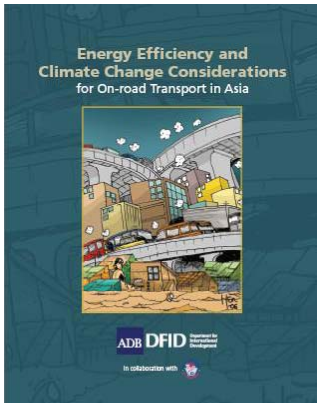


Climate and Transport



2006

- 17 countries and 1 city (includes China)
- country approach, no scoring of capabilities
- discussion drafts used as inputs for the 1st Governmental Meeting on Urban Air Quality in Asia

2006

- cities case studies – Xi'an, Hanoi and Pune

2006

- data on China vehicle fleet and CO2 projections

Increasing understanding of PRC AQM (21)

Beijing Olympics Special Webpage

Country Reports for BAQ 2008

Environmental Impacts of E-Bikes in China [DRAFT]

2008

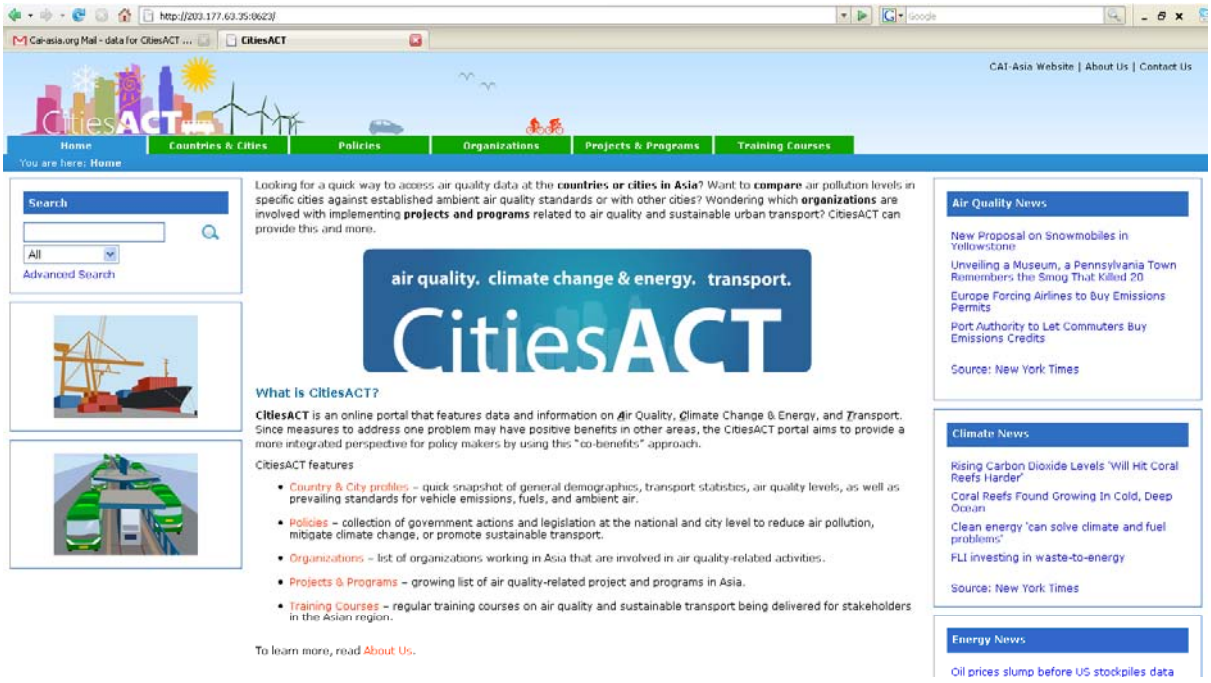
- CAI-Asia cooperated with Beijing EPB
- Daily Monitoring

2008

- 10 countries
- short reports drafted together with the country networks/coordinators and partners

2008

CitiesACT portal



To be launched in BAQ 2008 sample data for Beijing and Thailand

Summary

- Measuring the AQM problem need not be technology intensive.
- Secondary and tertiary information are widely available.
- Benchmarking method was an efficient way for CAI-Asia to start its data collection process.
- The study helped build up CAI-Asia's database on AQM in Asia including contacts database.
- Knowledge management in the center is gradually improving.

Thank you!

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