

Cost of Pollution in China

Economic Estimates of Physical Damages

Brief Status Report.

November 14, 2007

Background₁

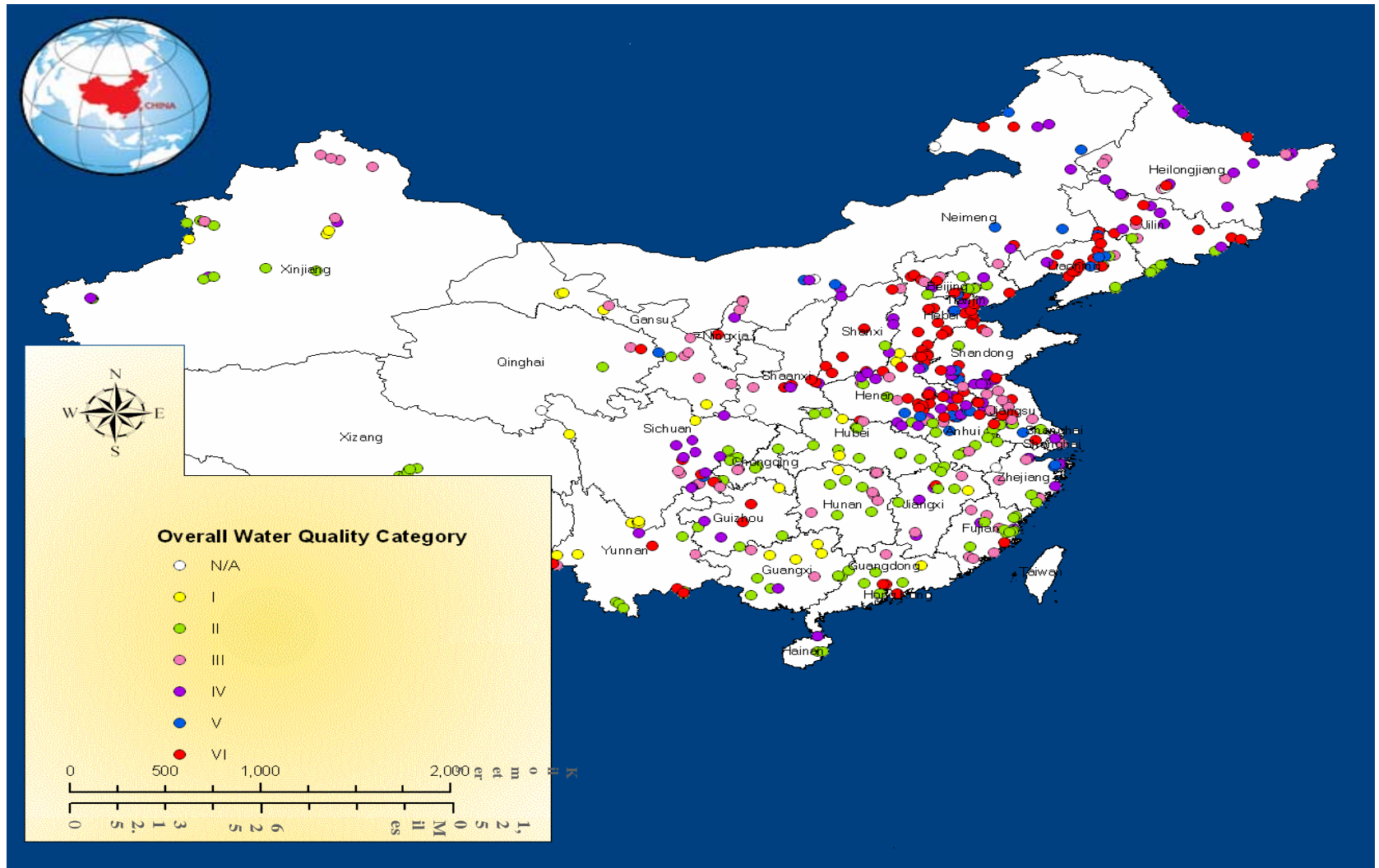
- China's State Environmental Protection Administration (SEPA) requested the Bank in 2002/3 to cooperate on an estimation of environmental (Air and Water) cost.
- Cooperation started officially in November 2003 funded with TFESSD. Also strong BB support. Report named Cost of Pollution in China (CoPC).
- SEPA's Objectives:
 - (i) Convince central and local authorities to increase allocations to environmental protection.
 - (ii) Increase public awareness about China's environmental challenges.

Background₂

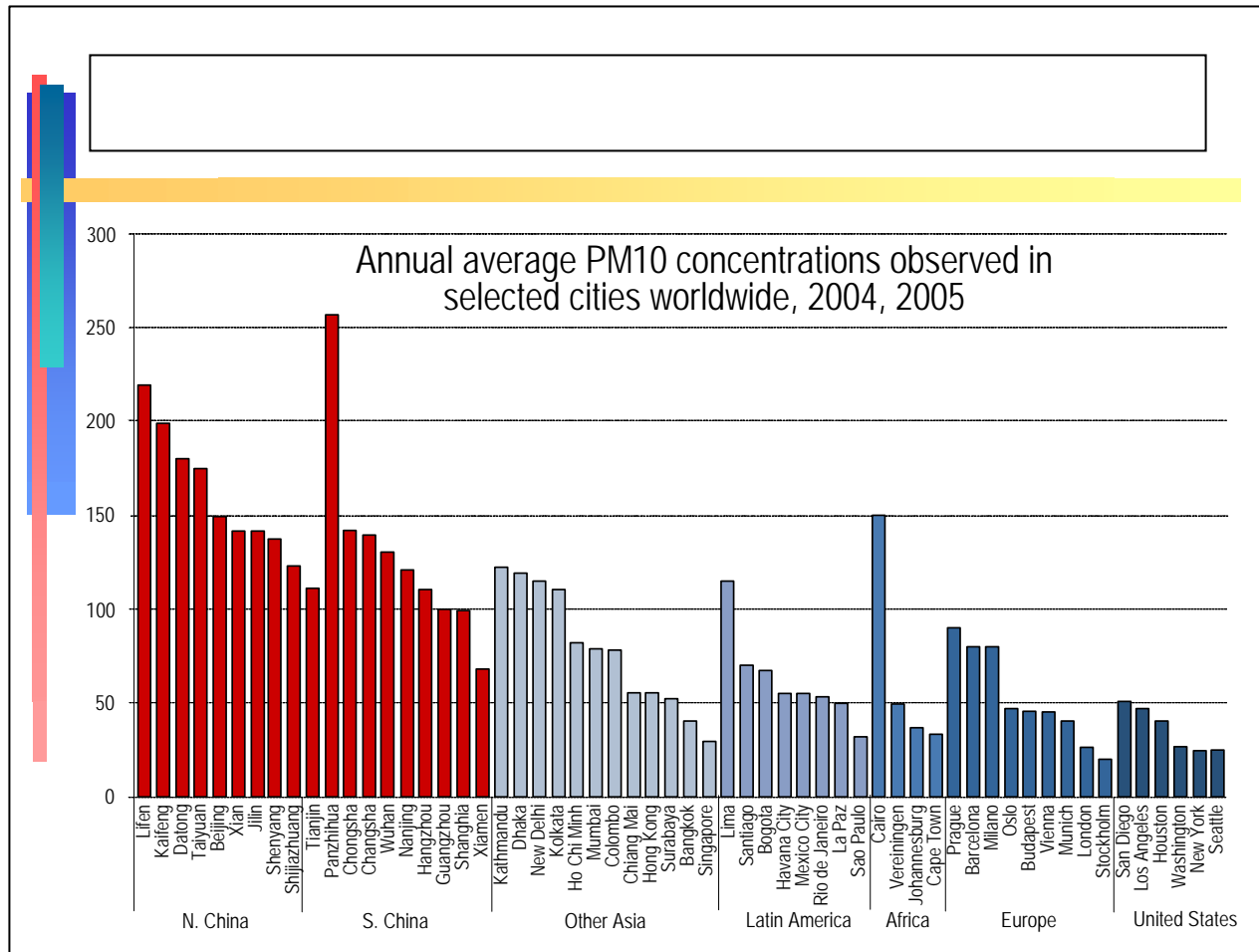
- Method: Developing a model that by using Chinas available environment, health and natural resource data, estimates environmental cost at both central and local levels and can be used and updated over time (year by year).
- Main cooperation partners:
 - (i) In China: SEPA, Ministry of Health (MoH), incl. its Center for Disease Control (CDC) and Ministry of Water Resources (MWR). All at both Central and Local Levels. (One of the first times environment, health and water authorities established such close cooperation and in sharing of data).
 - (ii) Abroad: ECON, CICERO, Oslo University, RFF, Maryland University.

Some initial Results₁

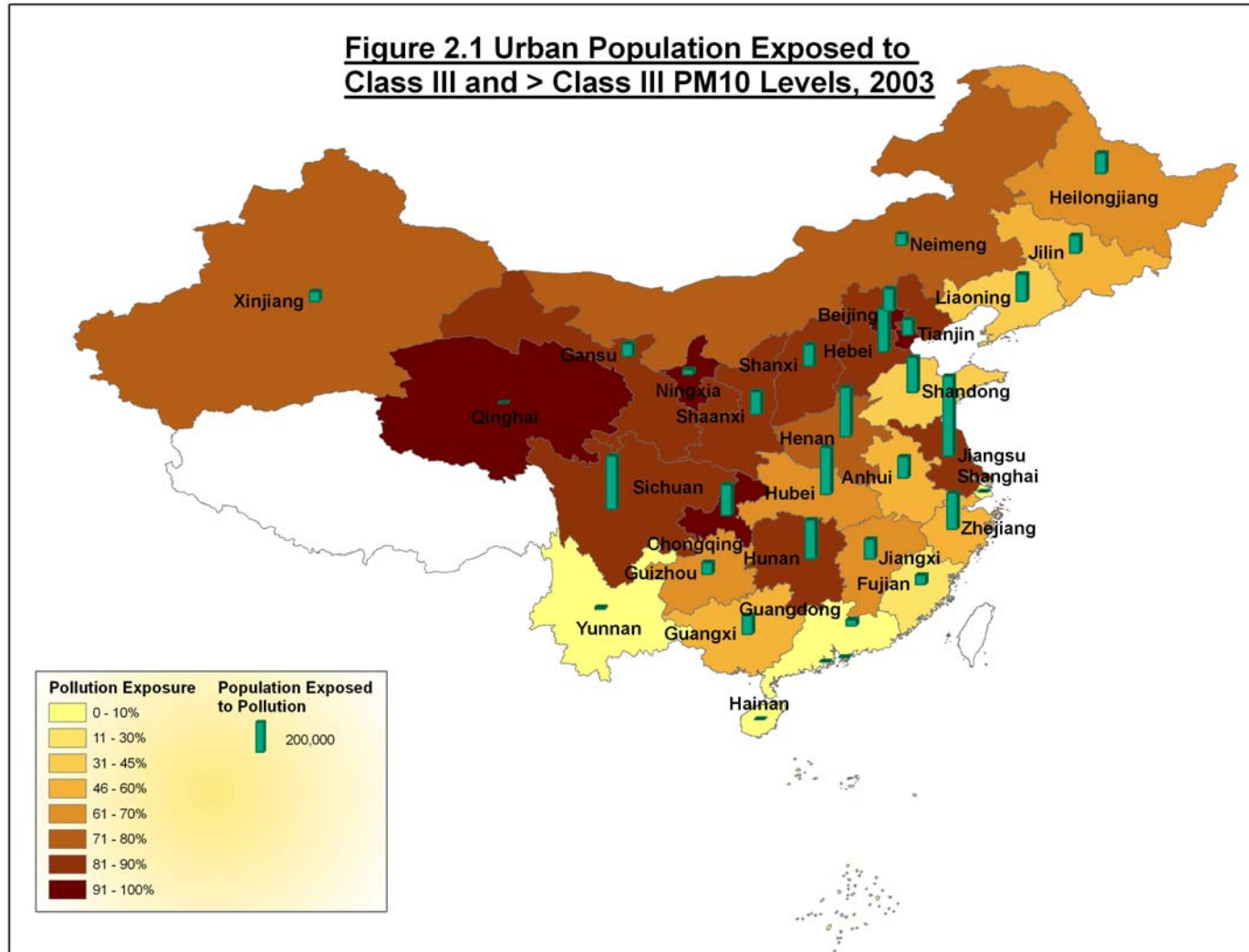
Extreme conditions of water pollution



International comparison: air pollution levels in China very high



Very high exposure rates to high air pollution levels, but with huge differences between regions.
(Excess death attributable to Air Pollution follows largely this pattern).



China's Environmental Pollution Burden at a Glance

		Physical Burden	Economic Burden (Low) ^[1]	Share of G DP	Economic Burden (High) ²	Share of G DP
Health Impacts	<i>Outdoor Air Pollution Mortality</i>	394,000 Premature Deaths [135,000, 628,000] ^[2]	111 [35.8, 179]	0.82%	394 [136,641]	2.9%
	<i>Outdoor Air Pollution Morbidity</i>	305,000 Chronic Bronchitis Cases [266,000, 342,000]	46.4 [39.0, 53.2]	0.34%	126 [108, 142]	0.93%
	<i>Water Pollution Mortality</i>	14,000 Diarrhea Deaths 52,000 Cancer Deaths	9.7	0.07%	66.2	0.49%
Non-Health Impacts of Water Pollution	<i>Water Scarcity</i>	74 Billion m ³ of water depletion and pollution	147 [95, 199]	1.1%	147 [95, 199]	1.1%
	<i>Crop Loss (from Waste Water Irrigation)</i>	Wheat 4463Tonne Rice 7339 Tonne Corn 62,505 Tonne Vegetable 560,771 Tonne	6.7	0.05%	6.7	0.05%
	<i>Fishery Loss</i>	1274 fishery pollution accidents	4.3	0.03%	4.3	0.03%
Non-Health Impacts of Air Pollution	<i>Crop Loss (from Acid Rain)</i>	Rice 15.4 Million Tonne Wheat 16.3 Million Tonne Rape 3.6 Million Tonne Cotton 0.6 Million Tonne Soya bean 3.6 Million Tonne Vegetable 203 Million Tonne	30	0.22%	30	0.22%
	<i>Material Damage</i>	13.6 Billion m ²	6.7	0.05%	6.7	0.05%
Total			361.8	2.68%	780.9	5.78%

[1] Values in Billion RMB

[2] Endpoints of a 95% confidence interval appear in brackets.

Preliminary Presentation of report results (March 2007, Beijing, China)

Environmental conference and two cultural events in Beijing, March 2 and 27 2007:

- Published conference report, as outlined in the foreword, states that “.. *certain material has been taken out due to still uncertainties about its calculation methods and its application*”.
- Story that is basically good (China’s willingness to do new research on critical environmental-health issues) is presented as a “censorship” case by the international news media.

Current Status & Next Steps

- New comprehensive reviews of the CoPC report by both SEPA and the Bank (Sept. – Oct. 07)
- Agreed with SEPA/Govt. that all material is principally to be included in new version, but build in more caveats. Explain more concepts used and data interpretation.
- Working meetings in Beijing during first half December, to go through report text.
- In principle, but subject to final clearances, Govt. and the Bank agreed to publish material.
- Possibly new environmental conferences & cultural events in provincial capitals in 2008 (follow-up to March 2007 event in Beijing at local levels).

Impacts of the TFESSD-funded project₁:

One Consideration:

- CoPC report “synthesized” knowledge has been built up through several TFESSD-funded projects (China Air Land and Water, China Environmental Administration, China Water Quality Management - reports)

Overall policy impact:

- **The World:** Increased attention on China’s “local” (or own) environmental challenges (... more than her Climate Change contributions only).
- **China₁:** Through her own careful reviews, China becomes gradually a more open society that acknowledges its environmental challenges.

Impacts of the TFESSD-funded project₂:

- **China₂**: (Re-) establish focus on environmental issues up to the Olympic games in Beijing (air pollution levels).
- **China₃**: Increasingly applied market-based studies in order to understand preferences in her own population (e.g. Willingness to Pay for reduced health risks findings in Shanghai and Chongqing).
- **Bank**: Increased focus on environmental – health subjects in the EAP Region (China, Mongolia, Vietnam, Philippines)

Impacts of the TFESSD-funded project₃:

At the Bank project level in the EAP region:

- **China:** A first Air Pollution Control program (lending) is now being developed (ref. CoCP report identified health burden from Air Pollution). (Increasingly try to balance investment in air versus water pollution).
- **Mongolia:** To convince authorities in Mongolia about the severe health burden from Air Pollution in Ulaanbaatar – establishing a UB clean air project (IDA lending, GEF, other donors).
- **Vietnam:** Establish a pollution control project focusing on areas most vulnerable to environmental health impacts (water pollution). (Links to TFESSD-funded poverty – environment nexus study in VN, LA KH, which also resulted in increased sub-regional cooperation).