

Megacities—Local, Regional, and Global Environmental Challenges
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Many thanks to the ADB for inviting me to participate at this meeting. I am delighted to be here. Congratulations to Vice-Mayor Han Zheng, Mayor Harris, and Minister Xie Zhenhua on all the work they are doing to make their cities a better place to live. As I don't have a city of my "own," I would like to focus today on the global environmental challenges presented by megacities.

Megacities have grown with globalization, drawing people closer together to increase the flow of goods, services, and ideas. In Asia, in 1980 there were 3 megacities, in 2000 12, and 18 are expected by 2015.¹

Population growth and rural-urban migration is massive. The urban population in Asia doubled from 700 million in 1980 to 1.4 billion in 2000, and is projected to increase by 800

¹ Page 45, Status and Trends in Urban Environmental Issues, Executive Summary, "State of the Environment in Asia and the Pacific 2000"

million in the next 20 years.² Growing population, globalization, and the information technology revolution have resulted in higher demands for energy, mobility, and communications in megacities.

The energy demand for production and transportation systems in Asia is expected to double every 12 years. Traffic congestion is estimated to cost from US\$272 million to over US\$1 billion per year in Bangkok; nearly US\$300 million in Hong Kong, China; and over US\$300 million in Singapore, primarily due to the cost of wasted fuel and time delays.³

Mr. Pradhan is one of those making the demands. At first glance he looks like he has a good life, a car, an apartment, and a job. But he sits in traffic for several hours a day, and has respiratory disease caused by the chemicals in the factory where he works. His children suffer from asthma.

Others are even worse off. Thirty to sixty percent of urban dwellers in most Asian countries live in squatter settlements, with inadequate provision of water, sanitation, and drainage. Their lives and health are under continuous threat.

² Such an increase is equivalent to the establishment of a new city of 150,000 people every day for the next 15 years. Page 45, , Status and Trends in Urban Environmental Issues, Executive Summary, "State of the Environment in Asia and the Pacific 2000"

³ Page 45, , Status and Trends in Urban Environmental Issues, Executive Summary, "State of the Environment in Asia and the Pacific 2000"

This is not a very positive picture of globalization. As George Soros said "We need a global society—and not just a global economy—we need to address wealth disparities and inequalities." Globalization has to be harnessed, and forced to work for all—especially in the cities—the cities have to become livable again.

Global Environmental Challenges

Urbanization is set to increase. By 2025 Asia will become predominantly urbanized, 55% of the population will live in urban areas. Unless the issues are tackled the major environmental problems of the future will be city problems—problems that will have a profound impact on the global environment, and serve as obstacles to sustainable development.

Poverty is the world's most powerful pollutant. Those who have little hope for the future cannot be expected to care for the environment. In urban areas this manifests itself particularly in water and land pollution. The poor are trapped in a vicious circle of environmental degradation, bad health, and increasing poverty, without hope of development.

Water Resources and Pollution

Growth of populations and economies has had a profound impact on Asia's freshwater resources. Water quality is deteriorating, due to sewage, industrial effluent, urban and agricultural runoff, and saline intrusion. The Yellow River (People's Republic of China), Ganges (India), and Amu Darya and Syr Darya (Central Asia) are among the world's most polluted rivers. At the start of 21st century, nine countries with around 35% of the world population were believed to have less than 2,000 cubic meter of renewable freshwater available per capita per year. This implies acute water scarcity. The nations in this list included India, Nigeria, Kenya, and the People's Republic of China (Source: UNEP-WCMC, WRI).

Urban Air Pollution

The air in Asia's cities is among the most polluted in the world as a result of increased traffic, rapid industrialization, and increased energy consumption.⁴ Air pollution causes increased mortality and disease, and leads to the loss of crops and property. The economic cost of air pollution is estimated at 0.5 to 2.5% of the world gross national product or some \$150–750 billion every year.⁵

⁴ The highest level of SO₂ suspended particulate matter in the air and the world highest levels of TSP are located in the Asian and Pacific region.⁴

Transboundary Pollution

Haze, acid rain, and transboundary pollution have increased substantially in recent years. The haze in 1997 resulted in economic costs in the region of US\$6 billion.⁶ The transboundary transport of toxic and hazardous substances contributes to urban pollution in Asia too.

Global Warming

Developing countries in Asia and the Pacific are among the most vulnerable to the effects of global warming. Global warming has the potential to cause sea-level rise, an increase in climate-related natural disasters (flooding, drought, and storms), and the disruption of agriculture, owing to changes in temperature, rainfall, and wind. The common compromise reached by all UNFCCC parties has given a new life to the Kyoto Protocol and the efforts to limit the greenhouse gasses.

Atmospheric Effects and Impact

The deteriorating quality of urban air, transboundary pollution (including haze and acid rain), and global climate change are the major problems affecting the atmospheric ecosystem. UNEP initiated a research study, Asian Brown Cloud (ABC), to understand and gain a

⁵ A speech by Klaus Topper, 12th World Clean Air & Environment Congress and Exhibition Managing Global Environment: Problems and Prospects".

complete picture of the roles and interactions of greenhouse gases, air pollution (haze, smog), and ozone.

Through international cooperation, we are examining impacts on the regional and global physical climate system, on regional water cycles and agriculture, and on human health.

Although scientific uncertainties remain, some of our research findings indicate that the amount of solar radiation reaching the surface is significantly reduced. Possible impacts could be reduced precipitation, reduced agricultural productivity by reducing available sunlight for photosynthesis, and the accumulation of adverse health impacts (Source: UNEP Assessment Report on ABC, 2001).

Solutions

The global environmental and sustainability challenges presented by megacities, are overwhelming. It may take decades to bring about more fundamental change in energy infrastructure, urban settlements, transport systems, consumer technologies, and particularly in lifestyles. There are already, however, signs of hope. Environmental awareness is constantly rising. International discussions on the future of the global economy, focus on the

⁶ Page 36, Haze, Acid Rain and Transboundary Pollution, Air Pollution and Its Impact, Executive Summary, "State of the Environment in Asia and the Pacific 2000"

role that multilateral environmental agreements could play, in shaping the global framework for the economy.

The Global Ministerial Environmental declaration issued in Malmo in Sweden identified environmental threats resulting from the accelerating trends of urbanization and the development of megacities as one of the major issues to be addressed. This year's WSSD, will build on the Malmo declaration by reviewing and appraising the implementation of Agenda 21 and the Rio Principles. The preparatory meetings for WSSD formulated action plans for sustainable development in the five subregions of Asia and the Pacific. One common theme in the action plans for the five subregions is the shared objective to create a more equitable world in the future. It is clear that, sustainable development in the region, will require dedicated efforts by all members of society.

Concrete Good Examples:

- **Shenzhen:** In 20 years, the city grew from 30,000 to 4.3 million, and is a model of sustainable urban development:.. modern, advanced economy, and enjoyable environment. Urban environmental pollution has been controlled (99% of days have excellent or good air quality) and the urban ecological environment has been protected (45% urban green ratio).
- **Beijing:** greening of the city in preparation for the Olympics

- Kitakyushu:
- Dalian:

Such examples demonstrate what is possible with both new and old cities.

Policy Agenda

The previous speakers demonstrated their efforts and success in coping with urban and environmental challenges at local, subregional, and national levels. Their speeches and reflections at subregional meetings seem to suggest that key elements need to be integrated into urban and environmental management.

Policy Integration

The intertwining of industrialization and urbanization calls for a more comprehensive, strategic policy framework. Environmental objectives must be incorporated into national and regional economic development plans and processes. Environmental goals can be achieved by working with the authorities and private sector interests, instead of depending solely on national environmental agencies. "Do good" projects, rather than "do no harm" should be developed. The brown and green agendas need to come together.

Governance

One lesson learned from the Asian financial crisis was the importance of transparency and accountability within government, and the relationship of government with the private sector and the public. Policymaking on the environment needs to evolve. Good governance requires collaboration between government agencies, and partnerships among government, civil society, and the private sector. I welcome moves by local authorities to adopt more open, accountable, and transparent systems of urban governance. I urge civil society to take a more active role on environmental issues.

Decentralization

Few local and city authorities in Asia are granted financial resources or provided the revenue-raising powers to effectively implement and maintain environmental management activities. Strengthening local administration by devolving functions and responsibilities is critical.

Innovative Finance

Many countries lack the financial resources and the legal and institutional framework to respond to the challenges. Investments need to be directed toward strategic placement of major infrastructure; more environmentally sound development of the metropolitan areas; and improved metropolitan institutions, particularly local governments. Innovative financing

mechanisms based on market-based incentives and polluters pays approach should be integrated in urban development policies. Private sector participation is crucial.

Conclusion

In the preparations for the World Summit on Sustainable Development, many citizens groups, governments, and industry sectors have taken the opportunity to reflect on the current environmental, economic, and social situation, and the implications of the "business as usual" approach.

It is clear that we need to redirect much of our economic investment, our scientific research, and technology development toward meeting the goal of sustainable development. Only when we factor in the true costs of emitting pollutants into the environment will we be able to create the conditions for sustainable development. In addition civic pride needs to be restored, especially in our cities, so that we all act responsibly and work in partnership for a better future.