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Earthquake Recovery and Reconstruction: International Experience and Best Practice Workshop

In response to the devastating earthquake that struck Wenchuan County in Sichuan Province on May 12, 2008, the Government of China and the World Bank jointly organized a workshop on Earthquake Recovery and Reconstruction: International Experience and Best Practice in Beijing on June 12, 2008. The objective of the workshop was to share international experience and lessons learned from previous post-disaster reconstruction and recovery planning efforts, which could be adapted and utilized by key government ministries and agencies in China that are now beginning to deliberate and draft reconstruction plans for earthquake affected areas. Ministry of Finance Vice Minister Wang Jun and World Bank Country Director David Dollar co-chaired the meeting. More than 100 participants from the Government of China and various Chinese academic institutions attended, including staff from the affected provinces.

The keynote presentation was given by Professor Shi Peijun, Advisor to the State Council on the Wenchuan Earthquake Response, during which the status of



Earthquake recovery and reconstruction: international experience and best practice workshop
Photo: Ji You, World Bank Beijing Office

Wenchuan Earthquake relief and recovery operations, as well as strategic directions for the Government were introduced. World Bank specialists and other international experts addressed their presentations in a broader disaster risk management context. Their perspectives covered framework for recovery and reconstruction, damage assessment, reconstruction planning, social impact, livelihood restoration and economic recovery, as well as catastrophe risk funding. Speakers from India, Turkey, and the United States gave tangible examples of post-disaster reconstruction experiences following the Gujarat Earthquake (India), the Marmara Earthquake (Turkey), Hurricane Katrina, and the Northridge Earthquake (US).

There're several important points related to post-disaster recovery and reconstruction raised in the workshop:

- Drawn from World Bank's previous global experience in helping its client countries conduct successful post-disaster reconstruction and recovery efforts, a conceptual framework for designing sustainable reconstruction and recovery programs is shown in Figure 1; it comprises five key aspects of vision, guiding principles, elements of a recovery process, recovery continuum, and cross-cutting issues.
- Activities following an earthquake or any major disaster are recognized to occur in major phases as shown in Figure 2. As indicated in the diagram, planning for long-term reconstruction has to begin early in the recovery phase, which will involve key policy decisions.
- A comprehensive damage and needs assessment following a disaster is required to lay the foundation for the

Earthquake Recovery Workshop continued on page 2

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reconstruction and recovery planning.

- Social, economic and environmental impacts are important to examine.
- The guiding principle for reconstruction is, building back better, which means new construction should meet modern standards, and review of past experience in this regard is needed, especially in terms of resettlement policies, design standards, building codes, construction supervision, etc.;
- Housing is a key sector, and several crucial decisions will need to be made very soon, primarily whether housing reconstruction will be predominantly local, on-site and owner-driven, or involve large-scale relocation and more top-down management. Following major natural disasters in Pakistan (2005) and Indonesia (2004 & 2006), governments have utilized the more local, owner-driven model; lessons learned from these experiences show the involvement of communities in the reconstruction process is essential.
- Beyond buildings, people's livelihoods and basic services have been destroyed, which provides a unique opportunity to improve upon the pre-existing health and education systems.
- A long-term national disaster risk management program should be a national priority, supported by institutional measures and programs that focus on risk identification, assessment, capacity building, emergency preparedness, and risk financing and insurance options.

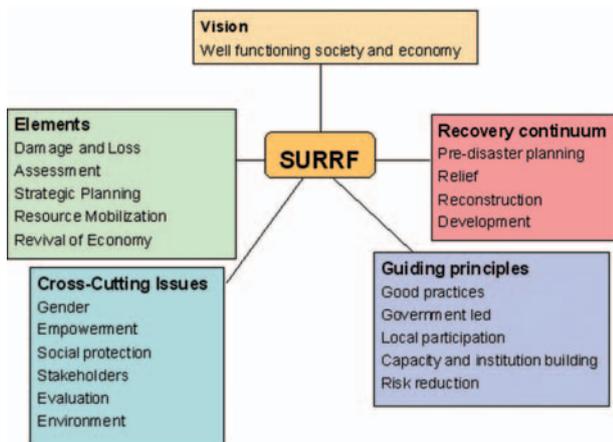


Figure 1: Sustainable recovery and reconstruction framework
Source: Saroj Kumar Jha, GFDRR

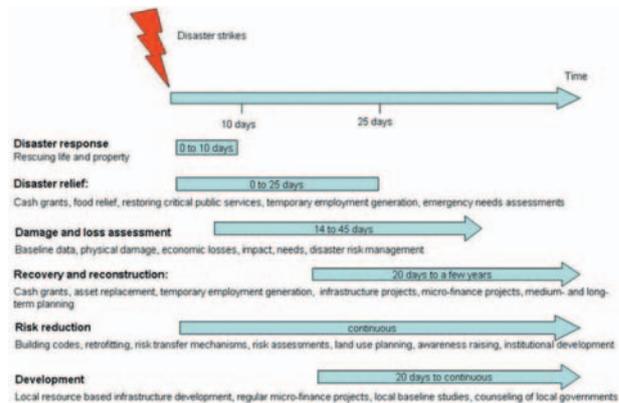


Figure 2: Phases of earthquake disaster response
Source: Saroj Kumar Jha, GFDRR

This workshop was an important milestone, as it initiated the beginning of international technical support for the post-earthquake recovery process. The complex scope of work of the recovery program will comprise a huge amount of work for line ministries at the national and provincial levels. The World Bank pledged its support to the government and offered to facilitate the mobilization of technical expertise and financing, as requested. A \$1.5 million grant under Global Facility for Disaster Reduction and Recovery (GFDRR), which is hosted by the World Bank, has been offered to support China's immediate recovery needs. While some of this funding was spent on purchasing tents to provide shelter for earthquake affected families, most will be used to help assess damage and losses from the earthquake and to support sustainable reconstruction planning and future disaster prevention efforts.

The impact of natural disasters has increased alarmingly worldwide, between 1990 and 1999, losses were more than 15 times higher than they were between 1950 and 1959. In recognition that disaster losses can eliminate years of development, the World Bank has developed considerable flexibility to support natural disaster recovery and reconstruction, assistance has included lending and non-lending support, the latter including advisory and other forms of technical assistance. Assistance has spanned multiple sectors, including urban development, environment, infrastructure, education, health, and social impacts.

(To download the presentations of the workshop in both Chinese and English, please visit World Bank's Chinese website at <http://www.worldbank.org.cn/Chinese/>)

World Bank response to Wenchuan earthquake

In the aftermath of the devastating Wenchuan earthquake in Sichuan Province, the World Bank has supported China with an initial \$1.5 million grant through the Global Facility for Disaster Reduction and Recovery (GFDRR). This grant has helped to provide emergency tents and will provide technical assistance for the reconstruction effort. The Bank also mobilized a team of international experts, many with experience in other recent earthquakes such as in Turkey and Pakistan. These international experts met with Chinese counterparts in the central and local government who are in charge of reconstruction planning. The World Bank also prepared a policy advisory note on global good practice in earthquake recovery and reconstruction for Chinese government shortly after the earthquake. The World Bank has recently also provided a Global Environment Facility (GEF) grant of US\$1 million to support assessment of chemical contamination in the earthquake.

(For more information, please visit World Bank's Chinese website at <http://www.worldbank.org.cn/Chinese/>)

World Bank's lending to China in the 2008 fiscal year reaches US\$1.5 billion with a focus on innovation for social and environmental challenges

Four new projects were approved on June 24 by the World Bank's Board of Executive Directors, including the Rural Health Project, the Rural Migrant Skills Development and Employment Project, the Xi'an Sustainable Urban Transport Project, and the ShiZheng Railway Project. This has brought the organization's support for innovative development projects in China in the 2008 fiscal year (June 30, 2007 ~ June 30, 2008) to a total of US\$1.513 billion. Most World Bank projects approved

this year aim to address environmental challenges through improvement of public transport systems, expansion of urban wastewater treatment and pollution control, and strengthened approaches to energy efficiency. Through the new Xi'an Sustainable Urban Transport Project (US\$150 million), bus prioritization, bicycle routes, traffic calming and speed-reducing strategies will be introduced in an effort to foster better road use and access to cultural sites, to address the challenge of balancing preservation of its cultural heritage with the demands of a modern city.

(For more information about World Bank projects, please visit <http://www.worldbank.org/projects>)

Commission on Growth & Development: five habits of successful economies

The Commission on Growth & Development launched a report: The Growth Report: Strategies for Sustained Growth and Inclusive Development on May 21 2008 in London and New York. The Commission is the result of two years work on the requirements for sustained and inclusive growth in developing countries led by 19 experienced policymakers and two Nobel prize-winning economists. According to Mike Spence, Nobel laureate and commission chair on a Seminar held in IMF on April 10, "fast growing urban areas" is among the five common features of the 12 countries that have been successful in achieving sustained high growth, defined as average growth at or above 7 percent for a period of 25 years or more since World War II. The rest four features include engagement with the global economy, high levels of investments and savings, resource mobility, and functional investment environments.

(For more information about the report and the Commission, please visit <http://www.growthcommission.org/>)

World Bank Chief Economist: Justin Yifu Lin



Photo: World Bank

Justin Yifu Lin took up his position as World Bank Chief Economist and Senior Vice President on June 2, 2008. He succeeds Francois Bourguignon, who retired from the Bank Group last year to become Director of the Paris School of Economics. World Bank Group President Robert B. Zoellick said, “As our first chief economist from a

developing country, and as an expert on economic development and particularly agriculture, Justin brings a unique set of skills and experience to the World Bank Group”, “I look forward to working closely with him on a number of areas, including growth and investment in Africa, opportunities for South-South learning, and Bank instruments to better support countries hit by high energy and agricultural prices.”

Justin has been professor and founding director of the China Center for Economic Research at Peking University since 1993; vice chairman, Committee for Economic Affairs of Chinese People’s Political Consultation Conference; and vice chairman of the All-China Federation of Industry and Commerce. In 1993 and 2001, he was awarded the Sun Yefang Prize, the highest honor for an economist in China.

Development Knowledge Center inaugurated at Renmin University of China

A new Development Knowledge Center (DKC) was officially inaugurated at the Renmin University of China on June 20 2008. A DKC is like a small library focused on

development knowledge and information. As part of the World Bank’s Public Information Network, it provides access to major publications, research reports and databases on development issues at the global, regional and country levels by the World Bank Group.

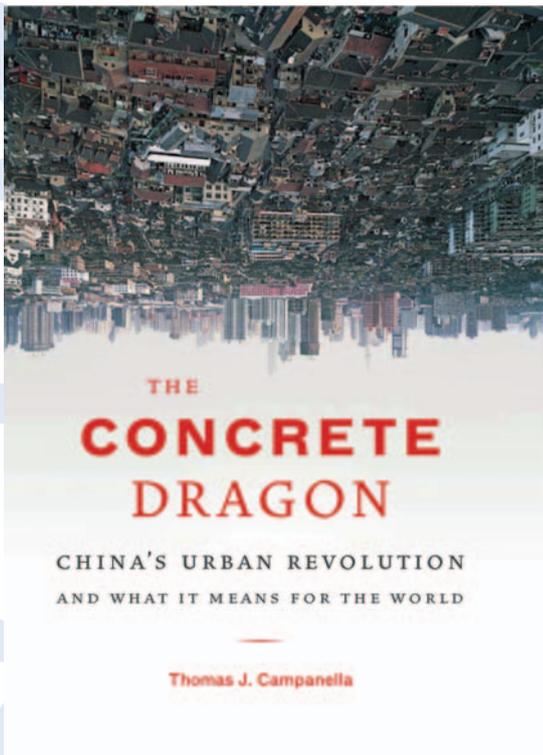
Prof. Lin Gang, Vice President of Renmin University and Mr. David Dollar, World Bank Country Director for China unveiled the DKC, witnessed by Prof. Ni Ning, head of the Renmin University Library, Prof. Wen Tianjun, Dean of the School of Agriculture and Rural Development, Ms. Elaine Sun, Operations Manager of the World Bank China Office, as well as representatives of the faculty and students. In his remarks at the inauguration, Mr. David Dollar stressed the importance of knowledge. “Initially the World Bank provided loans to the developing countries. But now the World Bank is a knowledge bank,” he said. “We provide knowledge to the developing countries through analysis and research. Personally I think that knowledge is more important than money. So we are very pleased to set up this Development Knowledge Center at the Renmin University which is one of the great universities in China.”

Global City Indicator Initiative: helping cities measure, report and improve performance

A website was set up recently for the Global City Indicator Program initially sponsored by the World Bank with funding provided by the Government of Japan Consultant Trust Fund. Focusing on cities of over 100,000 population, this program is structured around 22 “themes” into two categories that measure a range of city services and quality of life factors. It is a decentralized, city-driven initiative that enables cities to measure, report, and improve their own performance and to facilitate capacity building and sharing of best practices among cities through the use of indicators and a web-based relational database.

(For more information, please visit
<http://www.cityindicators.org/>)

The Concrete Dragon: China's Urban Revolution and What it Means for the World, by Thomas J. Campanella, Princeton Architectural Press, 2008



Cover of The Concrete Dragon
Photo: Thomas J. Campanella

China is the most rapidly urbanizing nation in the world, with an urban population that may well reach one billion within a generation. Over the past 25 years, surging economic growth has propelled a construction boom unlike anything the world has ever seen, radically transforming both city and countryside in its wake. The speed and scale of China's urban revolution challenges nearly all our expectations about cities and how to plan and build and preserve them. China's ambition to be a major player on the global stage is etched on the skylines of every major city. This is a nation on the rise, and it is building for the record books.

The Concrete Dragon: China's Urban Revolution and What it Means for the World explores this extraordinary chapter in world urban history, surveying the driving forces behind the great Chinese building boom, tracing the historical precedents and globalized ideas about architecture and urbanism that are shaping the new Chinese cityscape; and weighing the immense social and environmental impacts of rapid urbanization on the future of both China and the world. Jonathan Spence of Yale University has called The Concrete Dragon "a fascinating and timely book that sets the scene for any further discussion of China's explosive urban growth across the last twenty years." British urbanist Sir Peter Hall writes: "Anyone interested in contemporary cities, anyone interested in contemporary China, has to read it."

Chongqing Urban Environment Project (2000-2008)

Challenge

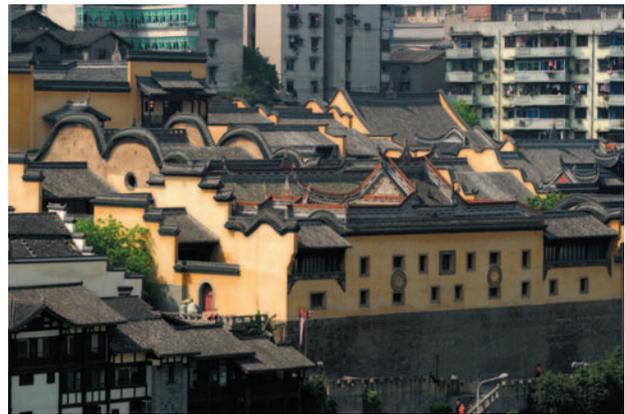
Chongqing is a booming megalopolis at the confluence of two major rivers in southwest China. Together with rural areas and smaller towns, Chongqing municipality includes about 32 million people. When the project was prepared in the late 1990s, water supply was adequate but the urban center's wastewater system lagged far behind. Raw domestic and industrial sewage was discharged through over 600 outlets directly into the Yangtze and Jialing rivers, threatening the quality of water supply. Solid waste was disposed in unsanitary open sites or dumped illegally and randomly. Just when pollution loads were expected to rise because of rapid population and industrial growth, the opening of the Three Gorges dam some 600 km downstream was set to diminish the flushing and assimilative capacity of the Yangtze river.

Approach

- Initially, the municipality planned to build 21 wastewater treatment plants scattered along the rivers - a scheme that would have been very costly, occupied precious real estate in a booming city and degraded the quality of life for nearby residents by emitting malodorous gas.
- The World Bank project proposed to modify the master plan by intercepting wastewater discharges all along the city's river banks and channeling sewage to two large-scale waste water treatment plants 15 km downstream from the city center.
- The project's definition of urban environment was expanded to include the restoration of a unique historical site, the Huguang Huiguan merchants' guild complex, thereby enhancing the city's livability at a time of rapid change.

Results

Modern sewerage and garbage disposal for a rapidly



The restored Huguang Huiguan
Photo: Ji You, World Bank Beijing Office

growing city.

- Water quality has been improving steadily since 2003. In 2006, data collected by the city's Environmental Protection Bureau indicated that 90% of the river water in Chongqing city met class II drinking water source standards and 100 % of the water met class III standards (on a scale of I to V, where III is still safe for drinking after treatment).
- Organic waste matter measured in terms of Chemical Oxygen Demand and Biochemical Oxygen Demand at various monitoring sites along the Jialing and Yangtze rivers has declined slightly or at least stabilized despite huge increases in pollution loads and the slowing-down of the Yangtze river.
- A modern, sanitary landfill meeting international standards has replaced district dump sites and haphazard and hazardous garbage dumps, helping improve the urban environment in many neighborhoods and the cleanliness of the city's rivers. The new landfill absorbs between 1,500 and 2,000 tons of waste per day.
- Four wastewater interceptors and two large-scale waste water treatment plants now capture and treat most of the wastewater generated by residents and industries in Chongqing city. Daily, the new plants treat 900,000 m³ of wastewater' sewage which would otherwise have been discharged directly into the river. The Bank-

financed plants are expected to treat 90% of the city's sewage when they reach full capacity by the project's end in 2008.

- The appearance of the rivers has improved, with less floating debris.
- The beautifully restored merchant's guild complex has become a cultural and touristic asset, acting as a focal point for urban renewal and development in a poor area of Chongqing city.

World Bank Contribution

- Modified master plan generated important savings and quality of life enhancements for Chongqing.
- \$200 million loan from the World Bank. Financing was significant at the time the project was approved in 2000 since China lacked resources for large-scale infrastructure investments. Lower-than-expected construction costs and financing from the central government saved \$70 million.
- In 2002, these loan savings were redirected to address disparities between rural and urban areas in the sprawling municipality—an issue that is now at the forefront of the Chinese government's priorities. Improving living conditions (water, roads, flood control) in eight small counties served as a pilot for the follow-up Chongqing Small Cities Infrastructure Improvement project, which is benefiting from a \$180 million IBRD loan approved in 2007.
- Helped transform public water and wastewater utilities into corporations and reform tariff strategy. Tariff increases are putting utilities on a sustainable path and generating resources for operations, maintenance and investments.
- Training and upgrading of management standards including technical training for the operation of modern landfill facility and wastewater treatment plants.
- Created awareness of Chongqing's unique heritage and helped raise the profile of Chongqing as a city of culture.
- A grant from the Japanese government (Policy and Human Resources Development grant) helped with project implementation, providing for example technical advice on the construction of a challenging interceptor pipeline tunneled under the Yangtze river.
- The Italian government provided a grant for technical assistance and design of the renovated merchant's guild complex.

Next Steps

- Chongqing has become China's largest inland city and continues to grow at a dizzying rate as the country urbanizes to escape poverty. Additional wastewater plants and landfills will be required to meet the city's increasing garbage and sewage outputs.



Chongqing Tangjiatuo wastewater treatment plant
Photo: Ji You, World Bank Beijing Office

- In 2007, China's central government selected Chongqing municipality to pilot approaches towards reducing rural and urban disparities in Western China. The World Bank is helping to expand the reach of public utilities and services to poorer secondary cities and towns through its follow-up Small Cities Infrastructure Improvement project.

(To learn more about the project through a slideshow, please visit the Quarterly's website www.ChinaUrbanQuarterly.org.cn For more information about World Bank projects, please visit <http://www.worldbank.org/projects>)

China Urbanizes: Consequences, Strategies, and Policies

Shahid Yusuf

Global trends are pointing towards rapid urbanization in Asia and Africa. As populations concentrate in urban areas, and most of the national product is generated by the urban sector, the focus of development activities will be mainly urban. In this urbanizing world, China will be playing an important role by virtue of its size, and the speed at which it is undergoing structural change.

Urbanization Facts

The sheer scale of the urbanization process in China has no historical precedent. China's urban population was 77 million in 1953 - approximately 16 percent of the total - and 191 million in 1980. It reached 594 million or 45 percent of the aggregate population in 2007 however, if the migrant population is included, then the numbers are probably closer to 650 million or higher which would be past the halfway mark.

At the end of the 1940s, China counted 69 cities. This number had climbed to 670 in 2007. The growth of cities is mainly the result of migration however, natural increase has also contributed as has in situ urbanization, when small towns grew so large that they were reclassified as cities.

China now has 89 cities with a population of 1 million or more. This dwarfs the numbers from other large countries such as the U.S. with 37 of this size and India with 32 cities.

Between now and 2025, probably another 200 to 250 million people will migrate to the cities (adding to the floating population of 155 million), which will account for a large share of all the migration in Asia.

Assessing Urbanization in China

The urbanization process in China so far has been successful. First, China is one of the developing countries which have managed to moderate urbanization. And partly for this reason, the growth of slums has been avoided except on the fringes of some of the largest cities. Living conditions, especially for migrant workers, are crowded but slum conditions are not common.

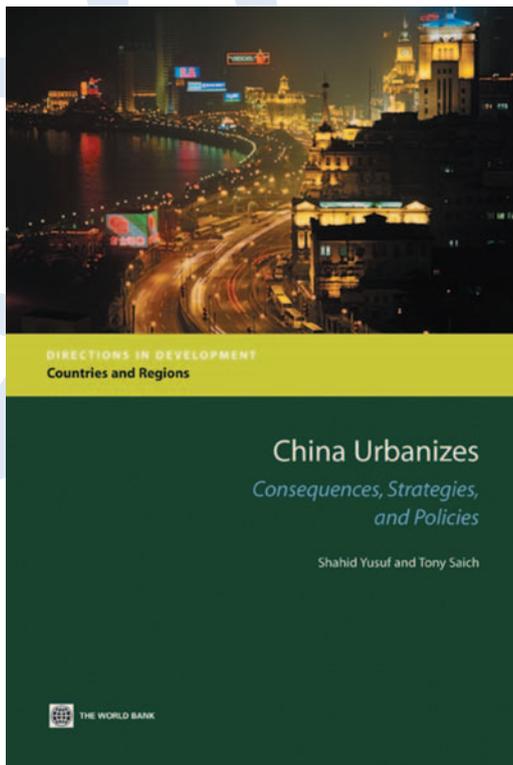
Second, with the rapid growth of the economy, urban poverty has been contained. According to various estimates it ranges from 4 percent to 6 percent. And urban unemployment is also low - in the 3-4 percent range.

Third, public services have been decentralized to the municipal governments along with many administrative functions (sub-national spending is 69 percent of the total, a high figure by international standards). This devolution of responsibilities is advantageous for tailoring services to local requirements, monitoring of quality, receiving feedback and also to an extent, mobilizing resources. But an assignment of fiscal responsibilities is not always accompanied with funding so that local governments in China are forced to raise resources from a variety of sources. As a consequence the off budget revenue component accounts for 20 percent of GDP (derived from fees and charges of all kinds). Citizens' views regarding the competence of local authorities rose between 2003 and 2005 to 72 percent, which would suggest that on balance, decentralization is working as the approval rating is appreciably higher than in the United States, for example. However, the degree of satisfaction was lower than the satisfaction with the central authorities, which was 80 percent. In particular as can be expected in the light of financing gaps, satisfaction was even lower with the efforts made

by the local authorities to punish corruption and to provide medical services, unemployment insurance and aid for those who were in hardship.

Fourth, China has been quite frugal in the use of land space for urban purposes - it is now about 4.4 percent of the total land area. Despite this, urban living space per capita has grown from 8 sq m in the early 1980s to 28 sq m currently because of intensive and vertical development, of housing accommodation. Green areas per capita also increased from 1.7 sq m in 1989 to 7.4 sq m in 2004.

On the negative side of the ledger, the urban-rural income gap remains wide - variously estimated at between 2.2 and 3.6 - which is one of the highest in the world. Urban pollution - air and water - is serious because of the rapidity of motorization, expanding industry (especially heavy industry) and the reliance on coal. Moreover, the provision of adequate health and



Cover of China Urbanizes
Photo: Shahid Yusuf

education services to migrants and a safety net for the poor and the aged, have yet to be adequately tackled.

Major characteristics of China's urbanization strategy

A cornerstone of China's urbanization strategy has been the use of the household registration (hukou) system to control migration flow and in recent years trying to channel it to the smaller and medium sized cities. Increasingly, only the largest cities are enforcing hukou requirements strictly and there is an ongoing debate as to its future role and the implications for migrants' access to urban services.

A corollary of the strategy to limit migration was the development of rural industry to provide employment. Town and Village Enterprises provided jobs for 143 million people in 2005, and still account for a large share of exports. Non agricultural income generate 54 per cent of total household incomes, of which some part may be comprised of remittances from migrants - variously estimated as providing more than 20 percent of household income on average, and much higher levels in some counties.

Very heavy investment in housing and urban infrastructure - between 9- 10 percent of GDP - the privatization of much of the urban housing stock (which accelerated in 1998) and the creation of a housing mortgage market, has changed the dynamics of the housing market. By one estimate close to 82 percent of urban residents owned their homes at the end of 2005. Mortgage finance comprised 10 percent of the local currency portfolio of the banking system and real estate finance for another 5 percent.

Urban Challenges

Compared to most developing countries, China has coped more effectively with the demands and strains of the urbanization process. Looking ahead, a number of issues will need to be addressed. The huge anticipated transfer of population from the rural areas will require jobs in cities with adequate provision of infrastructure so as to avoid slums and unemployment. Rapid economic growth is essential to achieve these objectives simultaneously. Deepening of the capital markets especially for structured bond markets to finance

urbanization will be important.

As urbanization proceeds in China while the share of manufacturing activities remains large, energy usage is bound to increase. Urban residents use 3.6 times more energy than their rural counterparts (motorization and space heating and cooling being important contributors to the difference). This suggests that energy demand in China is far from its peak even though China's energy intensity (consumption of energy per unit of GDP) is 7 times that of Japan and 3.5 times that of the United States. In 2005, China accounted for 14.2 percent of global energy consumption, second only to the United States. However, at the per capita level, China's energy consumption is only one third of Japan's and one fifth of the United States.

The motor vehicle industry has been one of the priority subsector identified by the government for development. However, China needs to weigh the positive and the negative sides of further motorization (especially the private use of autos). Motorization can lead to urban sprawl, higher energy consumption, and hence a larger impact on the environment. At the same time, this industry can promote development of other industrial subsectors such as renewable energy related ones and green technologies. The lessons that China can learn may come not from the United States where the urbanization process was proceeding when the oil was cheap but from Germany, Japan, and Korea, where the automotive industry thrives but cities remain relatively compact.

The desirability of controlling urban sprawl also arises from the need to safeguard arable land for agricultural production in view of the anticipated upward trend in raw material prices. If land use continues to grow at current rates, cities will encompass 7 percent of the land area by about 2025.

Water scarcities will affect the location and growth of urban areas. China is a water scarce country with only 2,114 cubic meters available per person. This is one third of the world average and one quarter of the average for the United States. This national figure masks large regional differences. In the northern China, the water availability is much lower - 405 cubic meters. The situation is more tolerable in the South with 2,406 cubic meters of available water per capita. However, the population is evenly distributed between the north and the south. With climate change, water availability will be

significantly affected with the North becoming more arid. While plans are in place to move water from the South to the North, eventually the population must also move towards more water-abundant areas.

Climate change will affect low lying areas which are among the most populous in China. Worldwide, 600 million people live in coastal areas which are less than 10 meters above sea levels. Central and municipal authorities in China will need to consider the implications of climate change for coastal cities and for the infrastructure in these cities.

With rapid productivity growth in manufacturing industry in China, employment in the manufacturing sector has been rising very slowly in recent years. If cities are to accommodate the continuous influx of migrants, services industries must flourish. A parallel approach would be to accommodate industrial urban agriculture so as to generate employment and also to address food security concerns.

Trends in the industrial composition of urban areas, in the availability of water, in the relative prices of energy and agricultural products, and rising sea levels will together have significant consequences for the design and geographical distribution and compactness of cities. All of these will pose serious challenges for urban planning, land use, pricing and technology policies to name just a few, in order to create urban centers which meet the conditions likely to prevail in the latter part of the 21st century. Cities are expensive to modify and to retrofit once they are built. A wiser and more cost effective strategy would be to begin factoring in the resource scarcities and exploiting the technological possibilities as early as possible.

(This article is a summary of China Urbanizes: Consequences, Strategies, and Policies, a recent World Bank publication edited by Shahid Yusuf and Tony Saich. To purchase the full report, please visit publications.worldbank.org. A Chinese version is forthcoming, please contact VKalk@worldbank.org. For more information, please contact Shahid Yusuf at syusuf@worldbank.org)

China and the Urbanism of Ambition

Thomas J. Campanella

It is no secret that China is the most rapidly urbanizing nation in the world, with an urban population that may well reach one billion within a generation. Over the past 25 years, surging economic growth has propelled a construction boom unlike anything the world has ever seen, radically transforming both city and countryside in its wake. China's ambition to be a major player on the global stage is written on the skylines of every major city. This is a nation on the rise, and it is building for the record books. China's construction industry, with a workforce equal to the population of California, has been erecting billions of square feet of housing and office space every year. In Shanghai alone more than 900 million square feet of commercial office space was added to the city between 1990 and 2004 -- the equivalent in floor area of 138 Pentagons or 334 Empire State Buildings. There was not a single skyscraper in Shanghai in the late 1970s; today the city has more high-rise office towers than New York. By some estimates, another 430 billion square feet of new construction, including some 50,000 skyscrapers, will go up across the People's Republic by 2025 -- and that does not include the massive rebuilding necessary in Sichuan Province as a result of the May, 2008 earthquake.

Building on such an epic scale has also meant unprecedented destruction, for as the old Stalinist maxim puts it, "You can't make an omelet without breaking eggs." In its headlong rush toward an affluent, modern future, China has broken countless eggs -- obliterating a priceless built heritage, leveling more old neighborhoods and displacing more people than any nation in the peacetime history of the world. Nearly all of Beijing's centuries-old cityscape has been bulldozed in recent years, despite legal protections and the brave resistance of residents and the nascent Chinese preservation movement.

Redevelopment in Shanghai has been equally catastrophic, forcing to relocation of tens of thousands of families. China's cities are also rapidly sprawling across the landscape, churning precious farmland into highway-laced landscapes of superblock housing estates and gated single-family subdivisions. As early as 1995, the built-up area of Shanghai (including the city proper and its inner suburbs) covered nine times the



An elderly woman awaits removal from her demolished hutong neighborhood, Chongwen District, Beijing, 2004
Photo: Thomas J. Campanella



Luxury housing on the same spot as above
image two years later
Photo: Thomas J. Campanella

land area it did just a decade earlier -- jumping from 90 to 790 square miles. There is a Chinese expression for this - - tan da bing -- which literally means "to bake a big pancake." Pancaking in the Pearl River Delta has been even more extensive, and LANDSAT images of Chongqing taken over the last two decades reveal a process of urban expansion more reminiscent of a supernova than anything from the kitchen.

In terms of form and settlement density, Chinese suburbs are very different from those in the United States. While single-family "villa" subdivisions much like the typical American gated community have become popular in recent years among the most affluent, more common are mid- to high-rise superblock suburban housing estates, the most exclusive of which are gated and offer a great range of lifestyle services and amenities. Because these suburban estates are so dense, they are much more land efficient than the typical large-lot American suburban development. But China's relatively small land area and immense population demands greater efficien-

cies still. Suburban housing estates are being built at a rate of 10 to 15 a day across China, which has resulted in a staggering loss of arable land in recent years -- especially in the booming coastal provinces. Between about 1980 and 2004 urban sprawl in China consumed some 44,000 square miles of agricultural land -- equal in area to most of New England. Due to such losses, the People's Republic is no longer self-sufficient in agricultural production; for the first time in its history, China has become a net importer of food, and is even now scouting for leaseable farmland in Africa and Latin America.

Sprawl is also resulting in a population increasingly reliant on motor vehicles for getting about. During the Mao years, most housing was provided in situ by one's danwei or work-unit; few people needed to commute to work, and streets and roads were typically empty. But with the economic reforms of the 1980s the old live-work model was largely abandoned; workers were encouraged to find their own housing, and the economics of the housing market often meant settling for accommodations well out on the urban fringe (others, displaced by redevelopment of old neighborhoods, were more or less forced out). The new separation of workplace and residence has meant an exponential increase in traffic, straining public transit systems and encouraging those who can afford it to buy a car. This helps explain why China has become the fastest growing automobile market in the world, with a domestic motor vehicle market that has surpassed Japan's and is second in size only to that of the United States. With all these cars on the suburban fringe have also come a range of artifacts -- shopping malls, big-box retail stores, drive-thru fast-food restaurants, even drive-in cinemas -- long associated with the suburban, motorist landscape of the United States.

Clearly, the unprecedented speed and scale of urbanization in China challenges many of our ideals and expectations about cities and what makes them work. American urbanists, especially, often find that the benchmarks used to measure and make sense of cities suddenly seem obsolete. The story of the West End in Boston is a case in point. An aging and congested but vibrant urban neighborhood, the West End was condemned a slum and bulldozed in the late 1950s as a model urban renewal project. The community's destruction became the subject of several landmark studies, and is still regarded the sine qua non example of the kind of authoritarian

“big planning” that Jane Jacobs would soon rail against in *Death and Life of Great American Cities*. There is not an urban planning student in America who hasn't heard of the West End and its demise. The West End was one of a hundreds of urban renewal projects that, by 1970, had displaced an estimated one million people in cities across the United States. A staggering legacy, but one that pales quickly in comparison to urban-redevelopment losses in China. In Shanghai in the 1990s alone, more families were displaced by urban redevelopment projects than by 30 years of urban renewal in the entire United States. And similar displacements have occurred in Beijing, Guangzhou, Nanjing and Tianjin. How useful, in other words, is the West End as a tool in assessing the impacts of urban renewal in China?

The scale of building in China also humbles our perennial American preoccupation with bigness. Americans have long taken it for granted that the United States would always have the largest, fastest, greatest, tallest, broadest and most expensive of all things. And indeed, America was long the land of bigness and ambition. We were a nation bred on Daniel Burnham's mythic exhortation to “make no little plans.” We invented the skyscraper and built the tallest buildings in the world; we erected the biggest dams and laid out the most extensive highway system in the world. We even put a man on the Moon. But China is fast removing us from this mighty perch. China is now home to some of the world's tallest skyscrapers and biggest shopping malls; the longest bridges and largest airport; the most expansive theme parks and gated communities and even the world's largest skateboard park. Three Gorges Dam is 16 times the volume of beloved Hoover Dam. And by 2020 China's national network of expressways will overtake the American interstate system to become the most extensive human construction on earth. Even Robert Moses, long the arch-demon of American urban ambition, would scarcely budge the needle of a Chinese urban Richter scale. Moses, for all his ruthlessness, constructed 415 miles of highway in the metropolitan New York region in his entire master-builder career. Shanghai built well over three times that in just the 1990s.

There is, nonetheless, a bewitching consonance between the American urban experience and the transfiguration of China's cities today. China's drive, energy and ambition -- its hunger to be powerful and prosperous, a player on the global stage -- is more than a little reminis-

cent of America in its youth. Henry James' descriptions of lower Manhattan in 1904 -- of the “multitudinous skyscrapers standing up to the view, from the water, like extravagant pins in a cushion already overplanted” -- could well describe Shanghai's Pudong district today. Americans gazed in wonder once at miniature metropolises like Norman Bel Geddes' “Futurama” exhibit at the 1939 New York World's Fair, just as Chinese today pore over spectacular models of the Shanghai- or Beijing-to-be. We wrote poems once to our bridges and roads. But today we are older and wiser, more responsible, more aware of the problems of planning for cars rather than human beings. A new emphasis on sustainability impels us to rethink the way we build. In short, our values have changed. But with wisdom has also come timidity. We are a suburban nation in tweedy middle age, cautious and conservative, no longer smitten with audacity. Our architecture is retrospective, measured and sane; our new towns are modeled on the old. We envy China because we see in its spectacular rise traces of what we once were -- brash, reckless, hungry to make a new world.

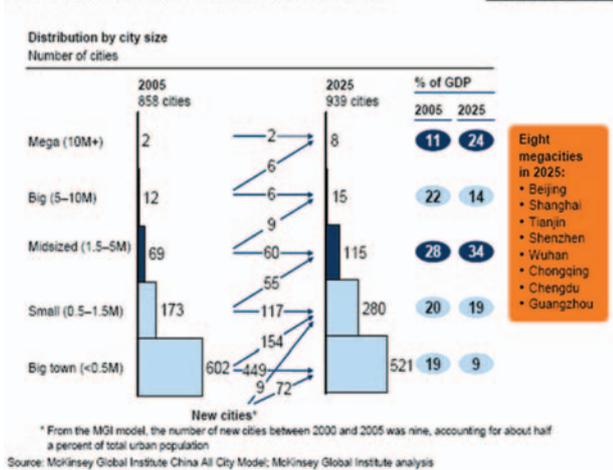
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Preparing for China's Urban Billion

McKinsey Global Institute

China's burgeoning economic success and the rapidly rising standard of living of its people have resulted in a historically unprecedented surge of urbanization that is set to continue. If current trends hold, nearly one billion people will live in urban centers by 2025. China will have 221 cities with more than one million inhabitants -- compared with 35 in Europe today -- of which 23 cities will have more than five million people. The urban economy will generate over 90 percent of China's GDP by 2025.

SIX NEW MEGACITIES WILL EMERGE BY 2025



As the nation's urban economy grows, China seems destined to continue to enjoy an impressive pace of increasing national prosperity. In all likelihood the nation's continuing urbanization will ensure that China will fulfill the ambitious economic growth target set out at the 17th Party Congress in 2007 of quadrupling per

capita GDP by 2020. For companies -- in China and around the world -- the scale of China's urbanization promises substantial new markets.

At the same time the expansion of China's cities will represent a huge challenge for local and national leaders. Of the slightly over 350 million people that China will add to its urban population by 2025, more than 240 million will be migrants. Urbanization along current trends will imply major pressure points for many cities including the challenges of securing sufficient public funding for the provision of social services, and dealing with demand and supply pressures on land, energy, water, and the environment. All of these pressures will intensify in time, as China's leaders acknowledge. Although China will likely achieve its GDP growth target in the timeframe it has set for itself, a focus solely on GDP growth will not achieve the harmonious development that the Chinese leadership desires.

As China seeks to mitigate these pressures, there are in fact several paths open to China's national government but most particularly to China's city governments, which can, to a great extent, influence how urbanization plays out. In a bid to understand these paths, the McKinsey Global Institute (MGI), the economics research arm of McKinsey & Company, conducted a study of China's urbanization to a unique level of detail. We employed rigorous macro- and microeconomic approaches through a granular city-level econometric model. From this model, we derived data-driven projections of urbanization's future challenges. We visited and researched 14 Chinese cities and interviewed hundreds of officials, business leaders, city managers, and academics about the policy levers that were used to influence the scale and shape of development of their cities. We developed and examined

four urbanization scenarios, each plausible outcomes of urbanization over the next 20 years.

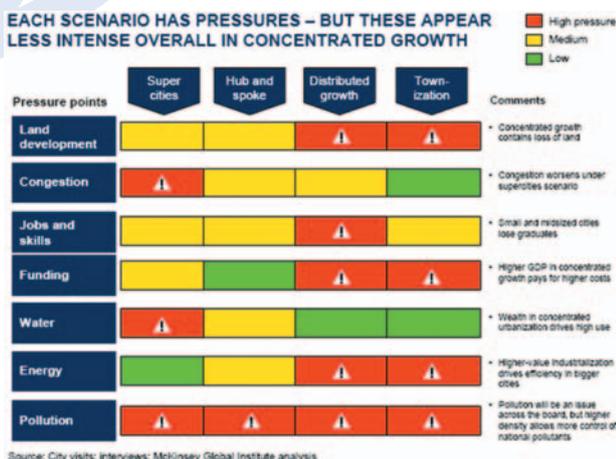
At the national level, broadly speaking there are four approaches to urbanization that China might choose to pursue. Two of these foresee patterns of concentrated growth. Under a “supercities” scenario, a small number of very large cities -- with populations of 20 million or more -- could emerge. Under a “hub and spoke” scenario, clusters of medium-sized and small cities could develop around larger ones. Two other quite different approaches would involve patterns of dispersed growth. Under a “distributed growth” scenario, we could see a large number of cities with populations of 1.5 million to 5 million spread throughout China. Under a “townization” scenario, many smaller cities -- with populations of 500, 000 to 1.5 million -- could be the model. Other nations around the world have applied all these options. All four are open to China; all four are subject to current public and political debate.

Although each scenario presents a largely distinct set of opportunities and challenges, our analysis finds that a more concentrated pattern of urbanization is most likely to mitigate pressures and increase the overall productivity of the urban system. Concentrated urban growth scenarios could increase per capita GDP by up to 20 percent over dispersed urban growth scenarios. As a percentage of GDP, public spending will also be lower (16 percent of GDP in concentrated compared with 17 percent in dispersed urban growth scenarios). For China to move in this direction, policy shifts at the national level would be required including, for example, continuing to enforce stricter regulations against city land

acquisition, supporting the economic development of larger cities, and adjusting the incentives of China’s city officials. By 2025, these policies could boost the growth of 15 supercities with average populations of 25 million people, or spur the further development of 11 urban “networks” of cities, linked by strong economic ties, with combined populations of 60-plus million on average.

We also find that encouraging “urban productivity” initiatives at the city level -- for example, the implementation of transit-oriented development or the creation of incentives for energy-efficient industrial equipment -- could generate substantial positive outcomes in all scenarios. Through the adoption and effective implementation of such policies, China could reduce its annual public spending in 2025 by more than 1.5 trillion renminbi (equivalent to 2.5 percent of 2025 GDP), going some way toward reducing its funding needs and releasing capital for other uses. Such initiatives could also generate additional savings for the private sector, in particular its resource bill. Potential savings here will total up to an amount equivalent to an additional 1.7 percent of China’s 2025 GDP.

In all scenarios, businesses have not only an opportunity to leverage China’s impending urban billion as a new consumer market, but also to become major investors -- in road and rail, public-transit systems, buildings, the energy supply infrastructure, and energy-efficient technologies -- as China manages its urbanization phenomenon. These opportunities will require a new generation of public-private partnerships to enable additional capital and knowledge infusion from the private sector, at the same time as guaranteeing greater efficiency and productivity from major public projects.



(This article is a summary of Preparing for China’s Urban Billion by McKinsey Global Institute. The full report and additional perspectives will be published in the coming months. For more information on the institute and to download the report, watch a video, and test your knowledge on China’s urbanization through an interactive quiz and graphic, please visit MGI’s website www.mckinsey.com/mgi)

Liveable Cities: The Benefits of Urban Environmental Planning

Cities Alliance

The report, *Liveable Cities: The Benefits of Urban Environmental Planning*, published by the Cities Alliance, United Nations Environment Programme (UNEP), and ICLEI - Local Governments for Sustainability, showcases 12 examples of cities around the world. It explores various options for sustainable urban development ranging from practical tools and comprehensive policies to innovative market mechanisms.

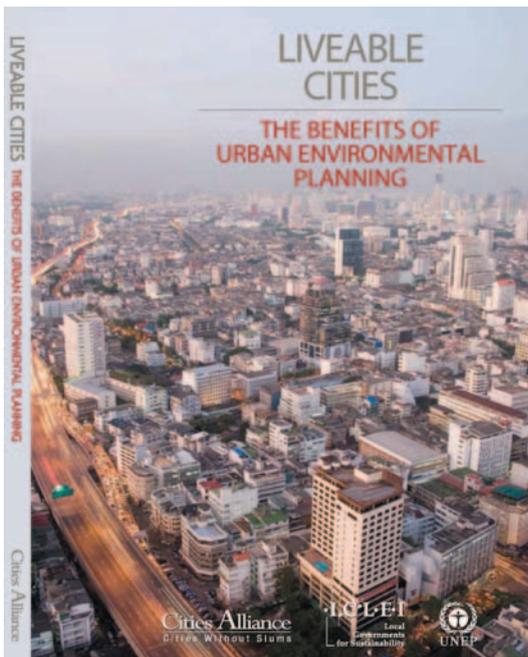
“The report contains many ‘take home’ messages - environmental management can boost city budgets,

prove a strong marketing tool for attracting investors and contribute to public health and poverty eradication.” said UN Under-Secretary-General and UNEP Executive Director, Achim Steiner at the launch of the report at the UN Climate Conference in Bali, Indonesia. “A modern city can only be truly successful if it can convincingly demonstrate its green credentials by recognizing its natural assets, creating efficient water, energy and transport infrastructure, and protecting its citizens in the face of present and future impacts of climate change,” he added.

For example, the city of Yangzhou in China, faced with many environmental problems, including damage to wetlands, water shortages and deteriorating water quality, took a deliberate decision in 1999 to create an eco-city. For its efforts, Yangzhou received the UN-HABITAT Scroll of Honour in 2006 for its work in conserving the old city and improving the residential environment.

Although eco-city plans are not statutory in China, the Mayor of Yangzhou required all other plans prepared by the municipal administration, including the statutory spatial plan to conform to the eco-city plan (ECP). By doing so, the ECP in Yangzhou allows staff to pursue goals of economic advancement through industrial development and tourism while at the same time ensuring social stability and improvement in the quality of life of residents and environmental conservation.

Other cities featured in the report include the Municipality of Bohol in the Philippines, which has been using the ecoBUDGET tool, an environmental management system that incorporates natural resources and environmental goods into budgeting cycles, to achieve the twin



Cover of *Liveable Cities*
Photo: Cities Alliance



A community action planning workshop in Yangzhou, China
Photo: Cities Alliance

objectives of environmental sustainability and poverty alleviation.

The City of Bayamo in Cuba, faced with a situation where motorized transport was available to just 15 percent of local commuters, has in 2004 reverted to horse-drawn carriages. Horse-drawn services now take care of around 40 percent of local transport needs, demonstrating that motorised transport is not the only solution to a public transport problem.

The report makes a strong case for the environment as the key asset for cities. A 2006 survey of professionals working in Hong Kong revealed that almost four out of five professionals were thinking of leaving or knew others who have already left because of the quality of the natural environment, while 94 percent ranked it as the top factor in selecting a place to live.

“Cities today have to be competitive. They operate in a global marketplace, competing with other cities and urban settlements around the world for investment. A city cannot compete, however, if it cannot offer investors security, infrastructure and efficiency. Hardly any city can offer these elements without incorporating environmental issues into its planning and management strategies,” said Cities Alliance Manager, William Cobbett.

The report is divided into four main sections. Section One, which sets out the general context for the report argues that a well-managed urban environment is key to

economic development and poverty alleviation. Today, there is almost universal recognition in governments at all levels that it is essential to incorporate environmental considerations into urban planning and management. This provides significant benefits in every area of urban life, cutting across issues such as health, poverty, security and economic development.

Section Two outlines the basic framework to urban environmental planning. It defines entry levels, barriers to integration and provides an overview of instruments for environmental integration. It then documents some of the policy, process, planning and management instruments that can be deployed in the process of integrating the environment into urban planning.

Section Three examines a number of approaches to the application of some of these instruments: Integrated Development Planning (IDP); City Development Strategies (CDS); Eco City Planning; ecoBUDGET, a copyrighted management tool developed by ICLEI; and a Strategic Environmental Assessment.

Section Four concludes the discussions and proffers some recommendations for urban environmental planning targeting city leaders, urban decision-makers and their partners. This is followed by Annexes of twelve case studies illustrating different city approaches to urban environmental planning, Instrument Toolkit examples, a bibliography and a list of useful websites.

(To download this publication, please visit the website of Cities Alliance <http://www.citiesalliance.org> For more information, please contact the Cities Alliance at info@citiesalliance.org)

Workshop on Legislative Reform of China's Transport Sector

The transport infrastructure development in China is the largest program that has occurred anywhere in the world since the nineteenth century. The administration of the transport sector in China has in the past been very fragmented. Until recently, it involved at least four central ministries, each managing infrastructure development programs of awesome scale and ambition. Moreover, much of the infrastructure delivery and regulatory functions are held at provincial and city government levels. The most challenging issue is how to coordinate among different modes of transport and integrate them into a sustainable and efficient network.



Since 1990, China has built more than 44,000 km of tolled expressway
Source: An Overview of China's Transport Sector 2007, World Bank

To try to address this challenge, the World Bank and China's National Development and Reform Commission (NDRC) co-hosted a workshop on legislative reform of China's transport sector in Beijing in April 2008, and scrutinized the possible structure of a proposed new Integrated Transport Promotion Law.

Under the joint-chair of Wang Qingyun, director-general of Transport at China's National Development and Reform Commission, and Paul Amos, former transport

adviser to the World Bank, Chinese professors, researchers, transport experts, and government officials came together with international transport experts to share experiences. The result was a fusion of both theoretical and practical knowledge, and Chinese and international know-how.

Workshop task team leader John Scales summed up the challenge when he said, "To me, integrated transport means four main things. First, getting each mode of transport doing what it does best, taking account of its economic and environmental features. Second, making sure that the connections and interchanges between the modes are in place and working well. Third, getting the right balance between coordination and competition. And fourth, deciding what can be left to the market and what requires government intervention and regulation."

Key take-away messages included:

- the importance of making sure the objectives of any new legislation are clearly defined;
- consulting with stakeholders to get buy-in;
- ensuring supportive institutional behaviour through



China has built 120 new berths in seaports in 2006 alone
Source: An Overview of China's Transport Sector 2007, World Bank

positive incentives for integrated solutions; and

- making sure legislation contains the basis for effective funding of authorized programs.

Liu Banglian and his colleagues from the Institute of Transport Economics at the University of Nankai (in Tianjin) helped organize and deliver the program. The

institute is charged with bringing the law to a stage where it can be properly evaluated by China's legislative review process. The drafting team will now take the thoughts of the workshop into their next phase of drafting, while Wang Qingyun said he hoped that World Bank would be available to continue supporting this most important initiative.

Experience Sharing Program on Development Between China and Africa

Sino-African trade has exploded from \$2 billion in 1999 to \$55.5 billion in 2006 and \$73 billion in 2007, growing faster than Chinese trade with the rest of the world, and making a significant contribution to China's success. Building on the expanding relationship, the World Bank Institute and the Bank's Africa and East Asia and Pacific Regions supported the Chinese Government in organizing a unique South-South 'experience sharing' program last month. The importance attached by the Chinese government to the program was reflected by the presence of two vice-ministers and the head of the state council's poverty reduction office at the opening session.

The first three days were devoted to a seminar in Beijing where Chinese and African participants discussed economic growth, foreign direct investment, trade, infrastructure, and agriculture. China's economic growth over the past three decades has enabled over 400 million people to climb out of extreme poverty -- a dramatic success story built around China's own development strategy.

"China's remarkable success in reducing poverty while sustaining growth is unparalleled in the world," said the Bank's Africa Vice President, Obiageli Ezekwesili. "Through this exchange, policy makers will learn from relevant aspects of the Chinese experience as they

shape their own strategies, keeping in mind that the difference in contexts will necessarily call for differentiated solutions. The Bank must increasingly support



Opening Session of the program
Photo: World Bank Institute

such south-south experience sharing programs." "Our Chinese Government partners are very happy about the program and have expressed their appreciation to the Bank for its role in making it a success," said David Dollar, the Bank's country director for China and Mongolia, "They have encouraged the Bank to organize these types of activities on a regular basis. For my own part, I see these types of knowledge exchange as an

important complement to other initiatives the Bank is undertaking to support China's engagement in Africa, including joint project financing and research.” Governor Li Ruogu of China's EX-IM Bank, Augustin Fosu of the UN's World Institute for Development Economics Research, Justin Lin, the World Bank's chief economist, Jim Adams, East Asia vice president also spoke.

Participants then split up into two groups for field visits to the provinces of Guangdong, Guangxi, Jiangxi, and Zhejiang. In the inland provinces of Guangxi and Jiangxi,



Participants visit Hangzhou Economic and Technological Development Area (HEDA) in Hangzhou, Zhejiang Province
Photo: World Bank Institute

the field visits focused on poverty reduction and rural development, while in the coastal provinces of Guangdong and Zhejiang, the visitors explored investments in infrastructure, township and village enterprises, foreign investment promotion, and establishing special economic zones, among others.

Over eight days, 32 decision-makers from 18 East- and Southern- African countries compared their own approaches to overcoming challenges to growth and human development with what they saw in China. The program -- designed by China's Ministry of Finance with suggestions from Bank staff -- focused on areas where China's experience was most relevant for Africa. Qimiao Fan, task team leader for the China-Africa Experience-Sharing initiative, quoted some key takeaways by the participants:

- Development with significant impact on poverty reduction can be achieved in one's lifetime
- There is a way out of poverty if we harness the necessary will power and ambition
- Political commitment at the highest level is an important ingredient to translate ideas into reality
- Each country must lead its own development programs
- Infrastructure development, especially road construction, is critical for growth and poverty alleviation
- The rural poor must have access to land and tenure

Disclaimer

The findings, interpretations, and conclusions expressed herein are those of the author(s), and do not necessarily reflect the views of the International Bank for Reconstruction and Development / The World Bank and its affiliated organizations, or those of the Executive Directors of The World Bank or the governments they represent.

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