

CHINA'S CHALLENGE

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Walking along Shanghai's waterfront late on a misty June evening, it's easy to be intoxicated by China. The newly rebuilt promenade -- the Bund -- on the bank of the Huangpu River is crowded with well-dressed young Chinese out for a stroll. Facing the river is an arc of financial buildings and hotels constructed by Europeans in the early part of the century, each splendidly floodlit. And rising out of the Pudong Special Economic Zone across the river is a symbol of the new Shanghai. Looking more like something created by the fevered imagination of a science-fiction writer, the Oriental Pearl TV Tower thrusts hundreds of meters into the sky, its two huge spheres sparkling with coloured lights.

Shanghai is exploding with energy. It vibrates, gleams, and seethes with entrepreneurial exuberance. The city is an end-to-end construction zone, a non-stop medley of cranes, jack-hammers, and bulldozers creating skyscrapers, elevated expressways, subway tunnels, and luxury apartment buildings. Shanghai boasts some of the most impressive architecture in Asia, with glass-faced hotels and office buildings, swathed in scaffolding, shooting skyward. Billboards and banners plaster the shopping streets, advertising everything from blue jeans and diapers to hot-water heaters and American whisky.

Much of urban China, especially in the coastal zones, looks the same. From the top of the fourteenth-century city gate in the provincial capital of Nanjing, one can see thirty-three heavy construction cranes within a radius of five kilometers. Looking down from the gate, roads are being widened, trees felled, and sewer and water pipelines installed. The streets of Nanjing, Zhengzhou, and Beijing are lined with new private stalls and stores. Brightly lit shopping malls and arcades are full of every imaginable consumer good. Roads seem choked with Audis, Jeep Cherokees, Volkswagens, Volvos, and Mercedes.

But this is only one facet of the Chinese reality, an urban facet experienced and emphasized by foreign tourists, businessmen, and financial commentators. What foreigners rarely see is rural China, where seventy percent of the Chinese population -- over 800 million people -- still live, and where over fifty percent still

rely on agriculture for their livelihood. A visitor can glimpse rural China by taking the train overland and by travelling "hard seat" -- third class -- with the peasants who are moving from village, to town, to coastal city. Rural China is a radically different world.

It is true that recent market reforms have penetrated deep into the Chinese countryside. Agriculture has been largely privatized, with small farmers now controlling their land and better able to decide what to plant and where and when to sell. Towns and villages are bustling with new private and semi-private enterprises that make bricks, build houses, repair machines, and transport goods. Some analysts argue that the fastest economic growth in China is taking place in these rural centers. The effect of economic liberalization on peasant and rural incomes has been striking: between 1980 and 1990 farmers' average real wages increased 75 percent.

Yet as the train grinds its way uphill from China's great northern plain into the Taihang Shan Mountains in Shanxi province, a visitor sees just how far China has to go before it can even begin to resemble a developed country. Villages become poorer as the rail-line winds upwards along the river gorge. Their dirt streets are strewn with garbage and rubble; the houses are ramshackle, made of mud or rough-cut stone, with slate, thatch or corrugated iron roofs; motorized vehicles, even scooters, almost disappear from the scene. The ochre and tan hillsides have been stripped bare of trees for fuelwood, and grazed down to dirt by sheep and goats. Only patches of scrub and brush survive.

The population densities are too high for subsistence farming in this region. In an endless struggle for land to grow their corn and wheat, farmers have carved thousands of terraces into the steep slopes. Some terraces are tiny -- no more than a couple of meters wide, winding along the edge of a steep hill or beside a creek -- and the dirt is often rocky and dry. This is the Loess plateau, a deep soil formation that stretches across much of north-central China. Water erosion during summer storms is worsened by the loss of trees. Erosion has carved gullies tens of meters deep, creating eerie mesas and canyons reminiscent of the American badlands. The streams and rivers are thick with silt.

Crossing rural China by train, a visitor is overwhelmed by the effort and ingenuity needed to feed 1.2 billion

people. The entire Chinese landscape seems to have been domesticated -- turned into wheat farms, rice paddies, orchards, woodlots, and grazing land. Although summer harvesting of wheat on the plains is now largely mechanized, much farming is still done by human and animal muscle power. In Anhui province near the coast, water buffaloes still turn the soil, and each of hundreds of millions of rice seedlings is still pushed into the mud by hand. At dusk in June, as the train streaks by, the landscape is dotted with thousands of farmers stooped in their fields, hoeing, weeding, and planting.

For someone trying to make sense of today's China, actually travelling in the country can be bewildering: there is abundant evidence to support practically any perspective one wants to adopt. Optimists point to the unleashed consumerism and the construction boom in Beijing, Shanghai, and Guangzhou. Pessimists point to the near total absence of meaningful discussion of political liberalization and human rights and to the rigidity of the gerontocracy running the country. But one thing missing from most commentary, whether optimistic or pessimistic, is a thoughtful appraisal of the ecological stress China faces.

The optimistic position is well-represented by William Overholt's recent book, *China: The Next Economic Superpower*. A consultant and senior financial manager in Hong Kong with immense experience in China, Overholt presents a splendidly persuasive case that little can derail China's boom. The central and provincial regimes in China are, for the most part, astutely managing the complex transition from socialism to capitalism, carefully sequencing price liberalization, privatization, and the creation of strong financial institutions and markets. The economic crisis produced by Mao's Great Leap Forward in the 1950s and 1960s, and the chaos of the Cultural Revolution in the 1960s and 1970s, utterly discredited radical leftism for most Chinese society. As a result, the coalition supporting economic reform is deep and broad, encompassing farmers, urban workers, factory managers, bureaucrats, the army, and most of the political elite. No one wants to return to the misery of the old days.

Overholt believes that this economic liberalization must precede political democratization. During the stress of rapid economic transition, when tough decisions have to be made that cut against the interests of powerful social groups, unbridled democracy can be fatal. "Democracy maximizes the power of those interest groups, particularly elite groups, who have the money and education to resist reforms," he writes. "The confrontation of powerful interest groups and weak

government results in inflation, mismanagement, and disorder."

Rather than worry about democracy, what must be done first is to drive forward economic reform. Since this reform will tread on many powerful toes, it demands a relatively authoritarian central government. But economic success will eventually build a large middle class; it will also strengthen the consensus among diverse groups that further reform and social and political stability are essential. Overholt concedes that the current Chinese leadership is not interested in any form of real democracy, but he argues it will come with time, as it has in South Korea and Taiwan. Economic liberalization loosens the regime's hold on society, it increases contact with foreign ideas, and it raises the education level of the population. "Democracy has a chance," Overholt concludes, "when economic growth has given the citizenry the confidence to demand accountability, the resources to impose these demands, and the education to make appropriate choices."

Much of what Overholt says rings true, but it is striking that he makes only passing mention of China's enormous and still-growing population, and nowhere does he discuss the critical environmental problems affecting the country. Despite harsh population control measures, in the next ten years China will add the equivalent of six Canadas to its population. The combination of rapid population and economic growth is producing an array of environmental crises. Air pollution is extreme in much of the country: large cities seem to sit under a permanent bubble of smog, with visibility often dropping to less than a kilometer in Beijing and Shanghai, two cities that rank among the five most polluted in the world.

Water shortages in much of northern and western China hinder economic growth. In 1992, the great Yellow River, still referred to as the "sorrow of China" because of its catastrophic floods in years passed, was dry at its mouth for almost one hundred days due to upstream withdrawals. The aquifers under Beijing supply 50 percent of the city's water, but their water levels are falling by a meter a year, causing the ground to sink throughout the region as groundwater is extracted. The central government has responded by announcing plans to build a giant canal to move 15 billion tons of water annually from a tributary of the Yangtze River in the south to Beijing, a distance of almost 1,400 kilometers. If built, this canal will be one of the great engineering feats of human history, cutting across hundreds of geological formations, streams, and rivers; the current plan is to construct an eight-kilo-

meter siphon to suck the water under and past the Yellow River.

The industrial city of Taiyan, the capital of the central province of Shanxi, is a microcosm of the challenges faced by China's resource managers. Situated in a valley surrounded by mountains that are rich with coal, Taiyan is an important and rapidly growing producer of steel and chemicals. Long ago the city's demand for water for its industries, homes, and agriculture outstripped the supply of the local Fen River, requiring ever-higher extractions of groundwater from wells. As in Beijing, the water table is dropping rapidly. A large spring in the valley used for irrigation, a site marked by one of China's best-known Buddhist temples, has gone almost dry. To make matters worse, the city and its industries produce hundreds of thousands of tons of heavily polluted waste water each day, much of which is dumped into the Fen untreated or only minimally treated.

Because agricultural land is so scarce in the region, as throughout China, Taiyan cannot afford to stop irrigating the rice, wheat, and vegetable fields in the valley. But Fen River water is increasingly laden with dangerous chemicals and salts, most seriously cancer-causing benzene. Local water managers acknowledge that the use of Fen water is slowly ruining the valley's soil, poisoning its crops, and lowering agricultural yields. The only solution is to dilute the river water with groundwater, but this resource is already over-taxed. The managers must therefore make a dreadful tradeoff between further damaging the valley's soils and food production and maintaining water supplies to the city's industries and homes.

Senior officials in Taiyan readily admit that the water problems, if not solved, will eventually cap economic growth in the region; already they must sometimes shut down factories in summer because of shortages. But all the potential solutions -- more conservation and recycling, and pumping water 150 kilometers from the already depleted Yellow River -- demand new technologies and large amounts of capital. The officials say they don't have the know-how or funds to adequately solve their water problems.

Water scarcity is only one of a host of evermore tangled resource problems in China. At about a tenth of a hectare per capita, cropland availability is among the lowest in the developing world. Several hundred thousand hectares of farmland are lost ever year to erosion, salinization, and urban expansion. The rich rice fields around Beijing are being gobbled up by new developments of Spanish-style villas that look like they

belong in La Jolla, California. Near many towns and cities one sees new Special Economic Zones -- industrial parks that offer tax and service advantages to foreign investors -- sprawling across good farmland. Each new auto-assembly plant, poultry-processing site, or paint factory takes a chunk of desperately needed farmland. When these losses are combined with population growth, the amount of cropland per person is falling steadily by 1.5 percent a year.

Unlike most foreign commentators, Chinese officials are very aware of these environmental and resource issues. The semi-official English language China Daily includes one or more articles every day about cropland shortages, water scarcity, reforestation programs, or air pollution. Of critical concern is whether China can continue its policy of food self-sufficiency. On one hand, diminishing reserves of cropland and rapidly rising demand for grain-intensive meat encourage China to start buying large quantities of grain on the foreign market. And the country's new wealth should allow it to buy this grain without significant economic disruption. Indeed, in 1994 foreign purchases shot up when grain output fell by 2.5 percent.

On the other hand, if China becomes too dependent on foreign supplies, it risks political and economic coercion by foreigners; the Chinese often raise the example of the American grain embargo against the Soviets after the Afghan invasion. And there are doubts whether international markets will be able to sustain repeated major purchases by the Chinese. The country consumes a whopping 350 million tons of grain a year; a shortfall of just 15 percent -- 50 million tons -- is about a quarter of the world's current annual grain exports.

For the traveller across China, two factors that are clear impediments to further development are overloaded infrastructure and inadequate energy supply. It is not uncommon to see traffic jams on rural highways that last for days, and rail workers fret about pressure to maintain dangerously high densities of traffic on rail lines. In north-central China the main energy source is coal, with the provinces of Shanxi and Henan alone sitting on reserves estimated at 300 billion tons. Literally hundreds of coal mines punctuate the landscape, mountains of coal sit in storage depots, and the gushing smokestacks of coal-burning factories and power-plants often march as far as one can see into the smokey haze.

Getting the coal to where it can be burnt is now a formidable task. Two rail lines descend from the mountains of Shanxi province to the northern plain of

China. These lines carry a steady stream of coal trains, but they are still not enough. In addition, the mountain highway from Shouyang down to the plain is plugged by a crawling line of large dumptrucks brimming with coal; day and night, the line extends bumper to bumper for almost one hundred kilometers.

After sifting through all this evidence, is it possible to make any clear predictions about the China's future? No. The society and its economy are simply too complex and too ill-understood, and there are too many key political issues that remain unresolved, to know exactly what trajectory the country will follow. While some of Overholt's optimism about the future is justified, there are reasons for caution too.

China has embarked on an economic and social transition that is an almost unimaginably complicated. Literally millions of urgent problems, some small and some very large, must be addressed immediately as China develops at breakneck speed. Given the country's vast population, this transition will be far more difficult than that of South Korea or Taiwan, two countries optimists often point to as exemplars. The management demands on the central, provincial, and local Chinese governments are breathtaking.

Resource scarcities, environmental problems and continued population growth make this transition harder in many ways. They increase wealth gaps between the cosmopolitan coast that is linked to the booming Pacific economy and the more conservative interior regions that are often severely affected by water and cropland scarcity. While economic growth in interior regions has been fast, it has tended to lag behind growth in regions closer to the coast. This widening gap has spurred a migration of people -- often estimated at 100 million -- from interior rural areas to the coastal cities in search of economic opportunity. One of history's great migrations, this movement has gone largely unremarked in the West, yet a visitor sees its evidence everywhere.

The Zhengzhou train station is an important rail junction in north-central China. Its halls, corridors, and stairwells teem with weathered and dishevelled peasants from the countryside on their way to the city. Thousands of them sit in clusters in the station's sweltering plaza, sometimes waiting for days for their connecting trains. In big cities, construction sites are lined with the tents and shacks of workers from rural areas; in Shanghai alone, over a million newcomers live on construction sites, moving from one to another as work demands. This flood of rural migrants has produced a jump in crime and a widely remarked

drop in cleanliness and hygiene in the big cities.

Resource shortages increase wealth gaps not only between regions, but also between rich and poor people within regions. Shortages of land and water increase opportunities for powerful members of China's elite -- often well-connected members of the Communist party or their family members -- to gain windfall profits through speculation.

Environmental problems and population growth boost the already huge capital demands faced by the state and the economy. New dams and canals have to be built to store scarce water and move it around, cheap housing is needed for rural-urban migrants, and agricultural stations and research laboratories need funding to increase food output. Yet between 1978 and 1994 central and local government revenues as a percentage of GDP fell by almost two thirds; the figure for central government revenue alone -- at a mere 3.9 percent in 1994 -- was among the lowest in the world. As a result, one sees rooms full of advanced equipment sitting idle in leading research laboratories while scientists read books for lack of research funds. Meanwhile, in the private sector, too much capital is being channeled into high-margin luxury shopping centres, condominiums and villas in cities like Shanghai.

Finally, resource and environmental stresses increase the susceptibility of the Chinese economy and society to sudden shocks like droughts, floods, and sharp changes in the international economy. A visitor gets the overriding impression that the country has a razor-thin margin for error when it comes to basics such as energy, food, and water. For instance, the leadership, media, and general public are acutely aware of national food production. The slight shortfall in grain production in 1994 pushed up inflation; in June of this year, the country seemed to breath a sigh of relief when a bumper wheat harvest was announced. Serious resource scarcities and population pressures mean there is little slack in the system to keep the effects of sudden, unanticipated shocks from propagating through the economy and society.

These three problems -- rising wealth differentials, capital shortfalls, and susceptibility to shocks -- are not necessarily unmanageable. But they demand consistently strong, competent, and resilient government at all levels of society. Unfortunately, the Chinese national government today lacks robust moral authority among the Chinese public. A high degree of moral authority -- or "legitimacy" as political scientists like to call it -- is key to the country's long-term stability.

It is true that the Communist Part has a deep reservoir of support among the Chinese, because it unified China, made the country respected around the world, and guaranteed the basics of life to its people. Yet Communist ideology no longer serves as a moral glue; in the wake of the Cultural Revolution it attracts virtually no support. Moreover, the crackdown following the Tiananmen massacre halted the evolution of alternative political ideas and institutions that might have formed the foundation for a newly legitimized Chinese state. Debate over central political questions -- the rate of democratization, the nature of political representation, and the like -- has been suspended at least until Deng Xiaoping dies, and probably for much longer.

In this vacuum, the legitimacy of China's national government now largely rests on two pillars: continual economic growth and nationalism. The nationalism, in turn, centers on a cluster of issues, including Chinese dominion over Hong Kong, Taiwan, and the tiny Spratly Islands in the South China Sea. Chinese officialdom's obsession with these issues is often astonishing: in Tiananmen Square, a five-story digital clock counts the seconds till Hong Kong is liberated from British rule.

Even a brief slackening of economic growth would accentuate the underlying stresses posed by increasing wealth differentials and capital shortfalls. During the delicate transition period, marginal groups -- such as poor farmers, rural-urban migrants, and workers in state industries that are being streamlined -- are especially vulnerable. The Chinese state is losing the ability to guarantee an "iron rice bowl," or bottom-line social security, for the weakest members of its population. Yet the Chinese labour force grows relentlessly by 20 million people [check] a year. If the economy falters, the potential for urban and rural unrest could encourage a regime struggling for legitimacy to retreat to evermore aggressive nationalism.

We all have a stake in the success of the grand Chinese experiment with liberalization. If the experiment should fail, the economic and political consequences for China's neighbours, and for the world, could be horrendous. But despite the detailed and often excellent analysis of Chinese prospects that can be found in Western media, little attention is given to the deep ecological dilemmas the country faces. In a land of scarce environmental resources and a still-expanding population, rapid economic growth is essential to provide capital, jobs, and know-how. But this rapid growth itself often worsens the country's underlying resource scarcities and environmental

problems, and these problems, in turn, threaten growth. Whether and how China breaks out of this vicious cycle will shape human history for decades, if not centuries, to come.