

CHINA: HYPER-DEVELOPMENT AND ENVIRONMENTAL CRISIS

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China's spectacular economic growth has been one of the most dramatic developments in the global economy over the past quarter century. Between 1978 and 2004 the Chinese economy expanded at an annual rate of 9.4 per cent. No other large economy has ever grown so rapidly for so long in the economic history of the world. As a result, measured by purchasing power parity, China now accounts for about 15 per cent of the world output, and about one-third of the world economic growth that has taken place since 2000.

However, China's economic growth has taken place at an enormous social and environmental price. A rapid increase in social and economic inequality, environmental degradation, mounting rural crisis, growing urban unemployment and poverty, pervasive government corruption, deteriorating public services (especially in basic education and health care), as well as escalating social unrest, have grown to dangerous levels and could potentially lead to an explosive situation.¹

We focus in this essay on the environmental impact of accumulation and profit-oriented development in China. Given its enormous population and its growing importance in the global economy, the implications of China's environmental crisis go far beyond China itself. It has become an important and growing element in the developing global environmental crisis.

It is unlikely that either the Chinese environmental crisis, or the global crisis, can be effectively addressed within the existing institutional framework. To build an environmentally sustainable society the economic system has to be fundamentally transformed so that production and consumption activities are oriented towards meeting the basic needs of the general population rather than the pursuit of profit and wealth accumulation.

1. FROM STATE SOCIALISM TO CAPITALIST DEVELOPMENT

Between the 1950s and the 1970s, China developed on a state socialist or Maoist model. Maoist China was by no means an ideal society. Even apart from the errors and excesses of Mao's rule, economic inequalities and bureaucratic privileges continued to exist. The economy suffered from inefficiencies and imbalances. The issues of environmental sustainability were poorly understood. The focus on heavy industrial development led to a number of environmental blunders. However, these problems need to be set in their historical context. Pre-revolutionary China was an oppressed, peripheral state with a tiny industrial platform. The new state was confronted with the hostility of powerful foreign states and forced to respond to the pressures of capital accumulation and military competition imposed by the world system. These circumstances greatly limited the choices available to the state. Yet despite these historical limitations, the experience of Maoist China demonstrated that the quality of life of the working masses could be greatly improved in a socio-economic system based on egalitarian principles.

In the cities and industrial enterprises, the means of production were mostly owned by 'all the people', i.e. the state. The phrase 'iron rice bowl' was used to describe the industrial employment system and its associated benefits. Wages were quite low. But workers enjoyed lifetime employment, guaranteed pension benefits, health care, housing and education for dependants, paid maternity leave, and other benefits that created a high level of social equity and security. In the rural areas, land and other means of production were owned by collectives or communes. Despite various economic problems and low levels of material consumption, the commune system provided a wide range of social benefits, including basic public health care and education – the 'five guarantees' (food, clothes, fuel, education for the young, and decent burial upon death) for villagers who were unable to work and had no family support. So the majority of the rural population could live with security and dignity.

Possibly the greatest achievement of Maoist China was its success in meeting the basic needs of the great majority of the population at very low levels of per capita income and consumption. Between 1960 and 1980, the average life expectancy at birth of the Chinese population rose from 36 to 67 years, an increase of 31 over twenty years. By comparison, over the same period, the average life expectancy of all low-income countries increased from 44 to 53 years, an increase of only 9. Between 1970 and 1980, the rate of illiteracy in China fell from 47 per cent to 33 per cent, a 29 per cent decline. Over the same period, the average illiteracy rate of all low-income countries fell

from 61 per cent to 53 per cent, down only 13 per cent. Towards the end of the Maoist period, China's performance in basic health and education indicators generally matched or were better than the average performance of middle-income countries, despite China's very low levels of per capita income. By comparison, in the period of market-oriented reform, China has fallen behind other low and middle income countries in the improvement of basic health and education indicators, despite China's spectacular economic growth.²

China's market-oriented reform started officially in 1979. During its first ten to fifteen years salient features of the reform included: breaking up rural communes, designating Special Economic Zones for foreign investment and free market experiments, and introducing 'market mechanisms' into state owned enterprises. As a result, worker benefits were reduced and the social safety net was steadily eroded.

In the 1990s, the Chinese leadership further embraced economic globalization and liberalization. Towards the end of the 1990s, most of the small and medium-sized state owned enterprises and nearly all of the collectively owned enterprises were privatized. Foreign and domestic capital is now encouraged to take a stake in the remaining large state-owned enterprises. The number of Special Economic Zones has exploded and foreign enterprises have further flourished, taking advantage of China's huge cheap labour force, regulatory loopholes and generous tax breaks. Hundreds of millions of Chinese workers now work under sweatshop conditions.

In 2001, China joined the World Trade Organization. Under the WTO accession terms China is obligated to eliminate all import quotas and significantly scale down its tariff protection on industrial imports. Foreign firms and investors have their rights greatly expanded.

While the Chinese leadership continues to claim that the goal of the reform is to build a 'socialist market economy', as far as the actual economic and social conditions are concerned, China has become a global corporate haven of low social and environmental standards. China is now capitalist in all but name.³

2. CAPITAL ACCUMULATION, PROFIT SEEKING AND THE ENVIRONMENT

The current economic globalization system rests upon production for profit. The pursuit of profit and constant, intense pressure from market competition force individual entrepreneurs and corporations as well as states to pursue capital accumulation on an ever larger scale. The endless pursuit of growth is not only a necessary outcome of economic globalization, but is indispensable

for the survival of the Chinese model. Despite the promise of 'trickle down' income effects, neoliberal globalization has caused ever-rising inequality in income and wealth distribution within and between states in the last thirty years. If not alleviated by some economic growth, the tendency towards rising inequality could soon translate into absolute declines in living standards for the great majority of the world's population, producing a socially unsustainable situation. In the case of China, despite a 9.4% annual growth in the last twenty-plus years, relative poverty and even absolute poverty is growing – for example more and more people cannot afford basic services like primary health care and education, causing growing social unrest. More and more people are disillusioned by the empty promise that 'the rising tide will lift all boats'.

Economic growth means a growing consumption of material resources. Moreover, production and consumption processes generate material wastes that pollute the environment. Unlimited economic growth therefore tends to deplete natural resources and cause environmental degradation. Potentially, the consequences could be so extreme that the very survival of human civilization could be at stake. Theoretically, if technological progress can bring about an ever-lower environmental impact per dollar, in principle population and affluence can grow indefinitely. In practice, unless certain basic laws of physics and ecology can be violated, no production or consumption activities can take place without using some resources and having some impact on the environment. There are physical limits to the reduction of the environmental impact of human activities. To the extent that environmental technological progress suffers from diminishing returns to scale (that is, more and more dollars of expenditure may be required to accomplish a given reduction of environmental impact), there are economic limits as well.⁴

Admittedly, in the Maoist era industrial development was mainly focused on creating a system of social equity. The links between natural resources and social well-being were poorly understood in many aspects. As bad as some industrial practices were then, at the aggregate level, the extent of resource depletion and environmental degradation were limited by the very low levels of material consumption that prevailed.

As China shifts towards a market system and tries to integrate with the global economy and culture, and as the Chinese economy expands at breathtaking pace, resource depletion and environmental degradation are all now occurring on a gigantic and growing scale. As China becomes the global centre of manufacturing exports it has simultaneously become the centre of resource depletion and the generation of industrial wastes. China has become

not only the world's workshop but also the world's dumping ground. Its natural environment is rapidly being pushed to the brink of collapse.

In a candid interview with the German magazine *Der Spiegel*, Pan Yue, China's deputy minister of Environmental Protection Administration, addressed the environmental crises: 'Our raw materials are scarce, we don't have enough land, and our population is constantly growing. ... Cities are growing, but desert areas are expanding at the same time; habitable and usable land has been halved over the past 50 years. ... [China's GDP miracle] will end soon because the environment can no longer keep pace'.⁵

The situation is dire, and not only for China. Climate change, water pollution and shortages, acid rain, wildlife extinction, and many other environmental factors affect the sustainability of the entire planet.

3. AGRICULTURAL PRIVATIZATION AND ENVIRONMENTAL DEGRADATION

Agriculture is the economic sector that arguably has the most intimate relations with the environment. Before 1979, most Chinese farmers were organized into collective communes. China's market-oriented reform began with *de facto* privatization of agricultural production. The first step was the implementation of the family contract system. This system broke up the communes and gave contracts of land to individual families. Initially, agricultural output and rural incomes increased significantly. But economic growth in the rural areas slowed down considerably in the mid 1980s. By the late 1980s and early 1990s, most rural areas entered a state of stagnation or even degeneration. Today, China's rural areas face an unprecedented social and environmental crisis.

Since 1979, Chinese agriculture has been transformed through the massive use of chemical fertilizers, pesticides, and hybrid seeds, made possible by the industrial and technological build-up in the pre-reform era. Initially, chemical-based agriculture worked wonders, helped by the water works and irrigation systems built in the commune era. Fertilizer usage more than doubled between 1978 and 1984, helping farmers to achieve record harvests.

Another factor that contributed to the short-term increase in household income was the exploitation of communal assets. For example, immediately following the implementation of the family contract system, there was no control over the rampant cutting of trees, which had been planted by the communes over the previous 30 years as roadside windbreaks to prevent erosion. Between 1985 and 1989, there was a 48 per cent decline in the area covered by windbreaks nationwide.⁶

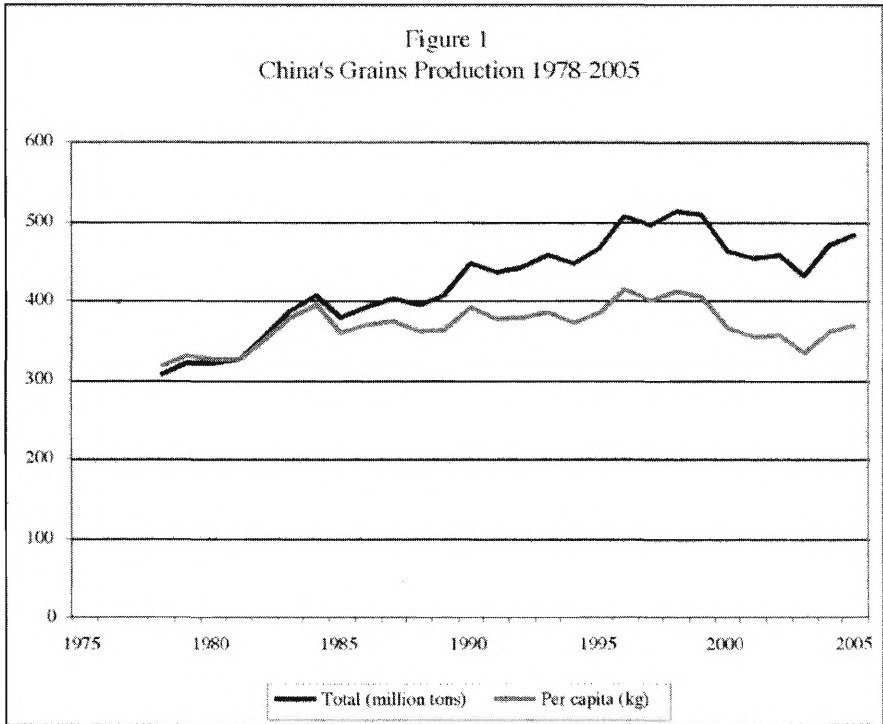
The official media attribute the rural boom in the early reform years (1978–1984) to the de-collectivization process. In fact, more than two-thirds of the gains in that period were achieved before 1982, when the large-scale de-collectivization started. Other factors, such as rising grain prices and the use of chemical fertilizers, contributed much more to the short-lived success. The same technical factors contributed to the stagnation which followed. After the state price control on agricultural inputs was lifted in the mid-1980s, prices skyrocketed. Within two years, fertilizer prices rose 43 per cent and pesticide prices rose 82.3 per cent, and these prices continued to rise by more than 10 per cent annually throughout the 1990s. But by now, farmers were trapped in a vicious circle, compelled to pump more chemicals onto the fields to keep up yields as the organic matter in the soil declined.

The *de facto* privatization of agriculture has had profound long-term environmental and economic effects. Given the high population density, Chinese family farms are often less than one hectare, or even half a hectare. This rules out any possibility of economies of scale. Many technological inputs like tractors or grain-thrashing machines are too expensive for individual families. As a result many villages experienced de-mechanization in the initial years of privatization. As farmers put more labour into tasks previously done by machines, they have to cut back on other types of work, including good environmental practices like the application of organic and green manure.

Compared to the communes, family farms are much more vulnerable to natural disasters and market fluctuations, which put pressure on farmers to overtax the environment. The small size of the farms makes integrated environmental management difficult. As one farmer observed: 'When I apply pesticide, the pests simply migrate to my neighbour's field; the next day when he applies pesticide, all the pests come back to my plot. We end up wasting lots of chemicals while achieving very little'. In many villages, even the tiny family farms are spatially fragmented. The villagers demanded that land distribution should be fair and equal. Consequently, one family might end up with some high-grade plots on one end of the village, some low-grade plots on the other end, and some medium-grade plots somewhere else, posing further difficulties for integrated management. Some villages attempt a different scheme: each family is allocated one chunk of land, and the plots are rotated over the years. But this creates another problem: farmers lose incentives to invest in land and soil for long-term gain.⁷

Figure 1 presents China's total grain production and per capita grains production between 1978 and 2003. Total production rose steadily throughout the 1980s and much of the 1990s. However, between 1998 and 2003 grain production fell sharply. Although the total production has recovered

somewhat over the last two years, per capita production has now fallen back to the levels of the early 1980s. Declining grain production poses a serious challenge to the country's long-run food security.⁸



4. CHINA'S ENVIRONMENTAL CRISIS: AIR, WATER AND LAND

Due to its huge population of about 1.3 billion, China's natural resources endowment per capita is small. Currently, China's per capita arable land is only one-third of the global average, its water resources one-fourth, and oil deposits one-eighth. According to the World Wide Fund for Nature's *Living Planet Report* (2002), China's biological capacity is only 1.04 global hectares per person, or 55 per cent of the global average.⁹ Yet even this limited natural endowment is not under good stewardship. China is paying a heavy environmental price for its economic boom.

Air pollution

According to a World Health Organization report, seven of the ten most polluted cities in the world are located in China. Air pollution claims 300,000 lives prematurely per year. China accounts for over 40 per cent of the total

deaths caused by air pollution in developing countries, at more than twice the rate of South Asia, which has a comparable population. Acid rain impacts about one-third of the country.¹⁰

While a transition from coal to oil or natural gas has reduced urban air pollution, a large-scale transition from bicycles and mass transit toward private automobiles in recent years has offset all the benefits and further exacerbated the problem. While many multinational car companies have taken this as an opportunity to sell 'clean vehicle technology' to China, the whole premise of automobile-oriented growth and urban planning needs to be called into question. The majority of urban residents still rely on bicycles and public transport and have to suffer from the filthy air and increasing traffic jams brought about by the explosion of vehicles. For example, the average bus speed in Beijing was 10 miles per hour in the 1980s. It decreased to 5 miles per hour in the 1990s, and today has fallen to a crawling 2.5 miles per hour. In 2004, China became the world's fourth largest producer and third largest consumer of automobiles. The number of automobiles in China is growing at 19 per cent per year. Cleaner technology cannot deliver cleaner air if this trend is not abated.

Water scarcity and water pollution

China is facing one of the world's worst water shortages. The country is divided into two regions: the 'dry North', referring to all areas north of the Yangtze basin, and the 'humid South', which includes the Yangtze River basin and everything south of it. The north has a population of 550 million, two-thirds of the country's cropland, and one-fifth of the water. The South has a population of 700 million, one-third of the cropland, and four-fifths of the water.

The water shortage is most serious in the Yellow River basin in Northern China, which is generally considered the birthplace of Chinese culture. The river flows through the Loess Plateau, where the planet's most extensive soil erosion is to be found. After several thousand years of continuous cultivation much of the natural vegetation has been stripped away. This is compounded by the fact that the soil on the Loess Plateau is noted as being among the most erosion-prone on the planet. The river is laden with yellow sediments, which give it its name.

In the last several decades the deteriorating ability of local vegetation to conserve water, and the over-pumping of ground water, have shrunk the river's water supply. In 1972, for the first time, the river failed to reach the sea. In 1997, a year of severe drought, the river failed to reach its last 700 kilometres for 226 days; for its last 136-kilometer stretch the dry period was 330 days.

The dry runs have severely affected the normal life and production of people along the river's middle and lower reaches and led to a further deterioration in the local ecology. There is fierce and bitter competition for water between the mainly agricultural upstream provinces and more industrialized coastal provinces.

Due to water shortages and the widespread pollution of surface water, more cities and villages are increasingly tapping into underground aquifers. Under the North China Plain, a region that produces 40 per cent of China's grain, the water table is dropping by an average of 1.5 metres per year. In 1999, the water table under the capital city Beijing dropped by 2.5 metres. Since 1965, the water table under the city has fallen by some 59 metres. What will people do when the aquifers are depleted?¹¹

About 60 per cent of the water in seven major river systems – the Yangtze, Yellow, Huai, Songhua, Hai, Liao, and Pearl Rivers – are classified as grade IV or worse – meaning, not suitable for human contact. 75 per cent of the lakes suffer from various degrees of eutrophication. The culprits are often agricultural runoff and untreated wastewater from both municipalities and industry. Chinese farmers use 2.3 times as much chemicals (fertilizers and pesticides) as US farmers. About one-third of industrial wastewater and two-thirds of municipal wastewater is released into waterways without any treatment.¹²

In 1994 the government began a massive clean-up campaign for the Huai River, one of the most polluted in China. After billions of dollars have been poured into the clean-up effort, improvement of the water quality remains an illusion. China's State Environmental Protection Administration has so little authority that the fines they levy are often less than the cost of using water treatment equipment where it has been installed, so naturally many manufacturers choose to pay fines instead. According to government estimates, while water treatment facilities have been installed in most major industrial plants under government mandate, one-third of these are not being operated at all and another one-third are being operated only occasionally.¹³

Pollution is exacerbating the water scarcity problem. In the previously water-rich Pearl River Delta and Yangtze River Delta regions water shortages have emerged in recent years, and much water has been rendered unusable due to heavy pollution. Contamination is spreading to underground aquifers as well – it is estimated that 25 per cent of aquifers are being polluted.

Land degradation and soil pollution

According to the monitoring results of China's State Forestry Administration in 1999, China has 2.67 million square kilometres of desert land, accounting for 27.9 per cent of its total territory; and this area is still expanding at

an average rate of 10,400 square kilometres a year. 37 per cent of the total territory (3.56 million square kilometres) suffers from various degrees of soil erosion.¹⁴

Due to soil erosion, salination, pollution and other factors 40 per cent of the country's arable land is degraded. In recent years, rapid industrialization and urbanization have been claiming farmland at an alarming speed. In order to protect the already scarce arable land, the government has passed an 'arable land balance' law: for any farmland converted to industrial, commercial or construction use, the responsible party has the financial obligation to create the same amount of arable land somewhere else. While this act has slowed down the emergence of landless farmers, the net effect is that more and more marginal lands are reclaimed for cultivation while fertile farmlands are converted for other uses.

The remaining farmlands suffer from pollution caused by agricultural chemicals, mining activities, and industrial pollution. Chemical pesticides have polluted some 13-16 million hectares of farmland. 20 million hectares of farmland (about one-fifth of the arable land) are contaminated by heavy metal (cadmium, arsenic, lead, chromium, etc.). It is estimated that about 12 million tons of grain are contaminated (i.e., harmful for human consumption) and that pollution is responsible for more than 10 million tons of reduced grain production.¹⁵

The Yangtze River and Pearl River Deltas, two prosperous regions thanks to recent rapid export-oriented growth, serve as examples. For centuries, the fertile and water rich river deltas were China's rice and fish baskets. They still supply the country with a considerable amount of agricultural products. But probably unknown to most consumers, or even the growers themselves, the farmland in these regions is suffering from extensive contamination from heavy metal and persistent organic pollutants, much of it from polluting industries outsourced from the advanced capitalist countries, or even from electronic wastes imported illegally from the US.

From 1999 to 2002, Guangdong Province carried out a geological survey of 10,000 square kilometres of farmland in the Pearl River Delta region. They found that only 10.6 per cent of the land can be classified as clean, 35.9 per cent is moderately or heavily polluted, and the rest is lightly polluted. 46 per cent of the land is contaminated by cadmium and 12.6 per cent by mercury.¹⁶

The Yangtze River Delta exhibits a similar situation. Scientists have found 16 kinds of PAHs and more than 100 kinds of PCBs, both highly carcinogenic persistent organic pollutants.¹⁷ In a 2002 survey by Nanjing Agriculture University, more than 70 per cent of the soil samples were found to have

above-normal levels of heavy metal. Highly contaminated grains including 'mercury rice', 'lead rice', and 'cadmium rice' have been found in the market.¹⁸

5. CHINA, THE GLOBAL ENERGY CRISIS AND CLIMATE CHANGE

According to the International Energy Agency, China accounted for 7.2 per cent of the world's total primary energy consumption in 1973 and 13.5 per cent in 2003. Between 1973 and 2003, the world energy consumption expanded at an average annual rate of 1.9 per cent and China's energy consumption expanded at an average annual rate of 4.0 per cent.¹⁹ If China's energy consumption keeps growing at this rate it will double in less than twenty years. In recent years, China's energy demand actually accelerated. From 2000 to 2004, China was responsible for 40 per cent of the world's total increase in energy consumption.

Coal accounts for about three-quarters of China's primary energy consumption. Oil and natural gas account for about one-fifth. Nuclear and renewable energies together account for less than 6 per cent and their share has not increased in recent years. The recent explosion of private vehicles (an increase of 19 per cent a year) has led to a rapid increase in oil consumption. China currently imports 32 per cent of its oil and the need for imported oil is expected to double between now and 2010. By 2020, China's dependence on imported oil could exceed 50 per cent; by 2050 it could exceed 80 per cent.²⁰

It might be argued that China uses its energy much more wastefully than OECD countries, and that there is therefore great potential for China to fuel its rapid economic growth by improved energy efficiency rather than rising energy consumption. The argument is, however, based on flawed statistics. China does appear to have much lower energy efficiency if its GDP is measured by the market exchange rate. But measured by purchasing power parity, which better reflects the material flows of goods and services, China's energy consumption per dollar of GDP is higher than the world average by only about 10 per cent, and higher than the OECD countries by about 20 per cent. This suggests that there is only limited scope for China to improve energy efficiency in the future. Table 1 compares China's energy consumption in relation to population, economic output and greenhouse gas emissions with selected regions in the world.

Table 1: Energy Consumption, Population, and Economic Output (2003)*

Region	TPES/ population	TPES / GDP	TPES / GDP (PPP)	CO ₂ / TPES
China	1.10	0.92	0.23	2.64
OECD	4.67	0.20	0.19	2.37
Middle East	2.52	0.66	0.38	2.48
Former USSR	3.36	2.12	0.51	2.38
Non-OECD Europe	1.89	0.76	0.27	2.56
Asia (ex. China)	0.61	0.72	0.19	1.91
Latin America	1.07	0.32	0.16	1.83
Africa	0.66	0.87	0.30	1.36
World	1.69	0.32	0.21	2.36

*TPES stands for total primary energy supplies measured by tons of standard oil, which equal consumption. CO₂ stands for carbon dioxide emissions measured by tons. PPP stands for purchasing power parity, which estimates the long-run equilibrium exchange rates of different currencies.

Source: International Energy Agency, *Key World Energy Statistics*, 2005.

China's growing demand for energy and especially its thirst for oil must be seen in the context of a developing global energy crisis. The world currently depends on oil and gas for 56 per cent, and on all forms of fossil fuels for 80 per cent, of its total primary energy consumption. There is growing evidence that global oil and gas production could reach a peak and start to decline in the coming decade. A growing dependence on coal would accelerate the depletion of coal and greatly worsen the impact on global warming. In the foreseeable future it is highly unlikely that the various forms of renewable energy can replace fossil fuels to sustain current levels of world energy consumption and future economic growth. The current Chinese growth pattern could greatly accelerate the global energy crisis and lead to potentially very dangerous geopolitical situations.²¹

China's per capita emission rate of greenhouse gases is only about one tenth of that of US. But due to its huge population of 1.3 billion people, the total emission is considerable. After the USA, China is already the world's second largest greenhouse gases emitter. With the current GDP growth trend, it is estimated that China may exceed the US as the top emitter in 2020.

Climate models predict that global warming will cause less rainfall in northern China and more in southern China. This is consistent with the pattern of recent years. There has been continuous drought in the North China

Plain since the 1980s, while flooding disasters have happened frequently in southern China. This impact has been especially severe since the 1990s. According to a report published in September 2004 by the Chinese and British governments, climate change could lead to a drop of between 20 and 37 per cent in China's yield of rice, wheat and maize over the next 20 to 80 years. In short, climate change may greatly exacerbate China's water crisis and threaten its food security.²²

6. ENVIRONMENTAL INJUSTICE AND ENVIRONMENTAL UNREST: CLASS ISSUES IN THE ENVIRONMENTAL CRISIS

In recent years there has been growing environmental awareness among China's urban residents. In 1999 the Social Survey Institute of China surveyed households in Beijing, Shanghai, Tianjin, Guangzhou, Chongqing, Wuhan and other cities on the issues that most concern citizens. Environmental protection was the second highest priority, second only to corruption. Thanks in part to increasing public pressure, the capital city Beijing and a handful of other big cities are being cleaned up. For example, Beijing has moved nearly 130 factories out of the city. Cleaner, gas-fuelled power stations are being built while older ones are being retrofitted with scrubbers. Many environmental NGOs in Beijing have been instrumental in this process.²³

One progressive Chinese scholar, however, commented on this as follows: 'It is not clear to me whether these organizations are practicing environmentalism or environmental imperialism'. While the comment may sound harsh, and it is not fair to lay all the blame on environmental NGOs, the criticism is not totally unwarranted. Instead of being retrofitted to reduce pollution, many polluting factories are simply being relocated to poorer areas. Instead of treating wastewater, many cities are digging long ditches to send the water away. While Beijing and Shanghai are increasingly supplied with natural gas from western China, many people and factories in the gas-producing areas have to purchase coal (sometimes from other areas far away) for their own energy needs, because most of the cleaner fuel is reserved for distant big cities. As a consequence of these unfair practices, the rural population suffers disproportionately from environmental degradation.

Heavy metal pollution serves as an example. Farmers play no part in creating it; profit-making capitalist industry does. Yet the farmers bear the consequences, often without any form of compensation. Roughly 20 million hectares of farmland is contaminated by heavy metals. Given the average size of a family farm, that translates into about 130 million farmers who are negatively impacted. In some of the worst hot-spots, pollution has become a life and death issue. In Shaanxi Province, in a small village of only 154

people, there have been 30 deaths due to cancer over the past 27 years.²⁴ In Huangmengying, a village of about 2,400, there have been 114 cancer deaths over the past 14 years. The nearby Shaying River is so polluted by industrial waste that the water is sometimes as black as soy sauce. According to Huo Daishan, an independent environmentalist, there are more than 20 cancer villages along the river in Shenqiu County alone.²⁵ Along some stretches of the Huai River, the death rate is one third higher than and the cancer rate twice the provincial average.

While farmers may initially be ignorant of the environmental impact of the polluting industries, it is obvious to them that something is wrong when the river runs black or when young children die from cancer one after another. Yet local officials are often deaf to the cries and petitions of the rural victims. Their performance is evaluated on the basis of GDP figures, and environmental degradation is not taken into account at all. And local government depends on the taxes and revenues generated by the factories. In some cases, the officials themselves are big shareholders in the polluting factories, and thus have a direct interest in keeping the factories running and keeping costs as low as possible.

When the victims have no legitimate means of addressing their grievances, social unrest is unavoidable. In the eastern province of Zhejiang there have been three big pollution-related protests since April 2005. Each involved thousands or even tens of thousands of protesters. In the April 2005 event in Huaxi village more than 20,000 villagers confronted and drove off 3,000 police who were sent in to break up a protest against an industrial park. In the event of August 2005 protesters set fire to the buildings of a battery manufacturer that was believed to be responsible for lead poisoning in the region. It is noteworthy that Zhejiang is a prosperous coastal region and in recent years it has enjoyed one of the highest economic growth rates of all provinces. Yet the local people are increasingly saying 'no' to this model of development.

7. CONCLUSION

The current model of economic growth in China is not sustainable. If the current growth pattern continues, in the not very distant future China may have to struggle with a major energy crisis, drastic declines in food production, the exhaustion of usable water resources and an uncontrollable public health crisis, as well as catastrophic natural disasters. Not only could the Chinese economy stop growing, and the existing social structure collapse; the potential consequences for the population could be too horrific to imagine.

On the other hand, it is very unlikely that either China's or the world's environmental problems can be effectively addressed within the existing institutional framework, geared towards economic globalization and hyper-growth. The pursuit of profit and accumulation, as well as the operations of the global financial market, are driving China inexorably along a path of environmental self-destruction.

To prevent this from happening it is necessary to fundamentally transform the entire existing social and economic structure. The economy must be oriented towards meeting the population's basic needs rather than the pursuit of profit and capital accumulation. To stabilize and improve China's environmental conditions, China needs first of all to stabilize its overall consumption of energy, water, and land resources, and then gradually reduce the consumption of these resources to sustainable levels.

This raises the question of how to meet the population's basic needs at relatively low levels of consumption of energy and resources. Both historical evidence and theoretical arguments indicate that this can not be accomplished within a market-fundamentalist system. The only hope lies in a more egalitarian economy based on economic democracy, and the recovery and cultivation of the commons. In this respect, despite all the problems with Maoist China we identified at the beginning of this essay, its successes in addressing people's basic needs with limited material resources are likely to be taken by many as providing valuable lessons in the conflicts to come over China's future direction.

NOTES

Disclaimer: this paper is the result of a collaboration. The two authors do not agree totally with each other, or with every idea contained in these pages.

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