Welcome!

The EU-China dialogue on "Industrial pollution and environmental health" is part of the dialogue program "EU-China Civil Society Dialogue on Participatory Public Policy" (2011-2013). This conference will be a new opportunity for both Chinese and European civil society organizations to become more active. This conference will provide opportunities for Chinese and European stakeholders to discuss the issue of environmental health and possible solutions through the creation of sustainable development and jointly look for possible solutions and enhancement through knowledge exchange, discussion and the creation of a common understanding.

Welcome all 50 participants from Europe and China. We hope to provide you with a unique opportunity to share experiences and views, particularly some existing good practices and research findings, enhance mutual understanding through effective inter-cultural communication, identify areas of common interests, reach consensus on priorities and engage in action planning. Our professional workshop facilitators from Leadership Inc will facilitate European and Chinese participants to design and work out realistic and innovative initiatives for civil society participation in public policy. This conference has the goal, to create also follow-up activities after an exchange between the counterparts.

HOW to use this Reader:
Before we come to action through the follow up activities, we will have a theoretic discourse, discussion and talk about the different topics of this conference. You can use this reader for self-preparation for the conference. You find information, provocations and questions, which can lead you in a good way of discussion. To prepare yourself, this reader is an helpful tool to get informed about the different topics. Scroll trough this document and enjoy it.

Dr. Nora Sausmikat

MA Anne-Maria Apelt

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Definition Environmental Health

According to WHO: [http://www.who.int/topics/environmental_health/en/](http://www.who.int/topics/environmental_health/en/)

Environmental health addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviours. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments. This definition excludes behaviour not related to environment, as well as behaviour related to the social and cultural environment, and genetics.


**Environmental Health** is the field of science that studies how the environment influences human health and disease. “Environment,” in this context, means things in the natural environment like air, water and soil, and also all the physical, chemical, biological and social features of our surroundings. The man-made, or “built,” environment includes physical structures where people live and work such as homes, offices, schools, farms and factories, as well as community systems such as roads and transportation systems, land use practices and waste management. Consequences of human alteration to the natural environment, such as air pollution, are also parts of the man-made environment. The social environment encompasses lifestyle factors like diet and exercise, socioeconomic status, and other societal influences that may affect health.

**Aspects of environmental health**

- Water scarcity and pollution
- Sanitation
- Natural disasters
- Climate change (including weather events, variable climates that affect food and water supplies and ecosystem changes)
- Air quality (indoor and outdoor)
- Chemical safety (e.g. chemicals in food)
- Sunlight (e.g. UV exposure)
- Electromagnetic fields (mobile phones)
- Radiation
- Food safety
- Noise pollution
- Waste management
- Transport
- Housing
I. Facts and Questions

I.1a WHO Fact Sheet - Example China

<table>
<thead>
<tr>
<th>Selected indicators (2009)</th>
<th>Country</th>
<th>Regional average</th>
<th>Global average</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>Population living in urban areas (%)</td>
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<tr>
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<td>Female</td>
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<td></td>
<td>Both sexes</td>
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<td>Adult mortality rate (per 1000 adults 15-59 years)</td>
<td>Both sexes</td>
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<tr>
<td>Under-5 mortality rate (per 1000 live births)</td>
<td>Both sexes</td>
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<td>21</td>
</tr>
<tr>
<td>Maternal mortality ratio* (per 100,000 live births)</td>
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<tr>
<td>Prevalence of HIV (per 1000 adults 15-49 years)</td>
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</tr>
<tr>
<td>Prevalence of tuberculosis (per 100,000 population)</td>
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II.1b WHO Fact Sheet – Example Germany

Germany is located in the WHO European Region.

Place of residence
- Urban
- Total
- Rural

* Data refer to latest year available from 2000. For specific years and references, visit the Global Health Observatory at www.who.int/gho.

** For data sources and years, see the World Health Statistics 2011.

Last update: 4 April 2011.
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<th>Selected indicators (2009)</th>
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<td>Population living in urban areas (%)</td>
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<td>Prevalence of tuberculosis (per 100 000 population)</td>
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I.II Environmental Pollution

*China's Environment Is Flailing: Report BY ARIEL SCHWARTZ, June 6, 2011*²

It's not surprising to learn that the local environment isn't doing so well in China, a country famous for its smog. But it is disheartening to find out just how bad it is, courtesy of the "State of the Environment in China," an annual report put out by the Chinese government. We don't have access to an English version of the report yet, but we've gathered information from the *Guardian, Reuters, and Xinhua* to pinpoint some of the highlights.

- Surface water pollution is "relatively grave," with 16.7% of rivers failing to meet any sort of grade standard—meaning the water is completely unfit for use (including in agricultural irrigation). And 42.3% of rivers are affected by eutrophication, a process where phytoplankton deplete oxygen from the water.
- Approximately one in five cities doesn't meet China's urban air quality standards, which are lower than those recommended by the World Health Organization. Acid rain was observed in over 50% of the country's cities.
- 22% of the country's 2,588 nature reserves are damaged in some way, mainly because as "economic development and industrialisation have gained momentum, unreasonable activities have weakened the function and value of those reserves." In other words, the country is just too crowded.
- Heavy metal pollution is a growing (but still small) problem, with 14 reported cases last year and seven this year.

So the country has toxic water, air, rain, and increasingly less pristine nature reserves. It's a bad situation, and one that proves how dominance in the clean energy race isn't necessarily linked to a cleaner local environment. There are signs of improvement: Beijing saw more "blue sky days" in May than in the past 10 years, according to the Chinese government. The city also decreased carbon emissions in 2010, and took 50,000 vehicles that did not meet emission standards off the road. But these are small steps, of course, and the problem spans all of China's hundreds of cities. And if China—and all of its burgeoning wealth—can't slow down pollution, what chance is there for other rapidly growing countries?


Ganjie Governmental 2010 report, 3.6. 2011 Press Conference by Li Ganjie:
Preface on CHINA DIALOG KLAUS FRITSCHE, Managing Director, German Asia Foundation, June 2011

In Europe and the United States in recent months there has been a public debate about environmental pollution and the consequences for public health in China – especially since the string of suicides at the Taiwanese-owned Foxconn plant. Many NGOs are conducting campaigns and advocacy work to raise awareness about such issues, include health effects on industrial workers, and to influence the behaviour of individual and institutional consumers.

However, less attention has been devoted to the impact of the industrialisation process on the wider environment and on living conditions outside the factories. (Study chinadialog_environmental health). China’s rapid industrialisation and the severe environmental contamination that it has created pose serious risks to public health. That much is understood by many people in the fields of academia, medicine and government – not to mention the media and the public – and the issue has been discussed since at least 2004, when the first media reports about “cancer villages” related to industrial pollution caused widespread alarm.

A recent study by the Chinese Academy of Engineering and the country’s Ministry of Environmental Protection said that 320 million people in rural China have no access to safe drinking water that 190 million drink water that contains “excessive levels of hazardous substances.” The report also linked increased cancer rates with pollution, saying: “In rural areas, the continuous increase in prevalence and the death rate from malignant tumors in the digestive system, such as liver and stomach cancer, is closely linked with environmental pollution.”

In November 2007, the government published its first official document on environment and health, the National Environment and Health Action Plan (2007–2015) (See also Annex). The following year, China introduced its first transparency legislation intended to secure the public’s right to access environmental information. However, reporting about these important issues still poses a great number of challenges. Many feel that media reports on these issues still lack detail and accuracy; that information about these topics remains inadequate in China; and that access to data is still difficult to obtain.

China Faces ‘Very Grave’ Environmental Situation, Officials Say By IAN JOHNSON, June 3rd 2011

BEIJING — China’s three decades of rapid economic growth have left it with a “very grave” environmental situation even as it tries to move away from a development-at-all-costs strategy, senior government officials said on Friday..

In a blunt assessment of the problems facing the world’s most populous country, officials from the Ministry of Environmental Protection delivered their 2010 annual report. They pointed to major

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improvements in water and air quality — goals that the ministry had set for itself over a five-year period ending in December.

The targets were met, with pollutants in surface water down 32 percent, and sulfur dioxide emissions in cities down 19 percent. But officials cautioned that many other problems were serious and scarcely under control. "The overall environmental situation is still very grave and is facing many difficulties and challenges," said Li Ganjie, the vice minister. Mr. Li said biodiversity was declining with "a continuous loss and drain of genetic resources." The countryside was becoming more polluted, he added, as dirty industries were moved out of cities and into rural areas.

Mr. Li said reversing the countryside’s deterioration was a major focus for the coming five-year plan. He also pledged to control contamination by heavy metals, which resulted in nine cases of lead poisoning last year and seven more in the first five months of this year. He said China needed a law to regulate heavy metals, and he was confident it would be written and passed soon. Founded as an agency 13 years ago, the environmental protection office was upgraded to a ministry in 2007 but has fought an uphill battle for money and power. The government has made growth a priority, worried that unemployment would lead to unrest. But the signs are growing that environmental neglect is causing instability. Protests in Inner Mongolia last week were partly due to concerns that industries like coal and mining — largely dominated by ethnic Chinese — are destroying the grasslands used for herding by the indigenous Mongolians. Similar conflicts have arisen in other sensitive ethnic areas like Tibet and Xinjiang. "In some of these areas that are very fragile, we will strictly limit development," Mr. Li pledged. He said that more than a fifth of the land that has been set aside as nature reserves had been illegally developed by companies, often with local government collusion. But he said the ministry had deployed a satellite that could detect illegal development and would put pressure on local governments to stop the work. Failing this, Mr. Li said, the ministry has the power to influence officials’ prospects for promotions because environmental compliance is now a part of their performance evaluation.

Independent observers say this is part of a gradual change to give the ministry more power. “They’re now a serious player as to what happens and where and to what standards,” said Deborah Seligsohn, a senior fellow with the World Resources Institute who is based in Beijing. “You’re seeing a steady trajectory where they’re having more and more impact.” Recently, the ministry canceled a high-speed train line that had not obtained its approval. Last year, Mr. Li said, the ministry turned down 59 projects worth $15 billion that had not obtained its approval. Well-connected ministries were once able to bypass the environmental ministry, but now, Mr. Li said, it had set up “an impassable firewall” to block harmful projects.

Polluting mill resumes production, economic interests blamed

A steel mill in Henan province which was closed because of serious pollution problems has reopened with the permission of the local government. The Guanghua steel mill, near to Pingdingshan city, was forced to stop production in December 2008, after locals complained to the environmental protection department that dust emissions from the factory were causing children to develop coughs and other illnesses. But the mill resumed production two years later.

An inspector from the local environmental protection department said that closing down a factory is not a decision the department can make on its own, and needs the agreement of other government departments. Environmental protection officials reported to the local government that the mill had resumed production, but so far no action has been taken, most probably because of the importance of the steel mill to the local economy, which earns the mill the support of other departments.

* Source : People’s Daily : China Environment Brief: May 11-13 2010
**chinadialogue: “China’s Green Revolution” Ebook, and Environmental Press Award Winners, Introduction by ISABEL HILTON, 2011:**

Chinadialogue has released an ebook, “China’s Green Revolution”, of articles and commentary on environmental aspects of the 12th Five Year Plan. From the introduction, by Isabel Hilton:

The transition from one FYP plan to the next is a key moment in China, closely watched by foreign and Chinese analysts. After 30 years of breakneck growth, with all the attendant difficulties and consequences of that model of development, the 12th FYP demonstrates a much more robust ambition to make the difficult transition towards a more sustainable model. If it is successful, the 12th FYP could prove to be a pivotal moment in Chinese development, of international as well as domestic importance.

China’s strategic challenge is to get onto a more sustainable development path, while meeting public expectations of improved living standards and employment. The current development model is exhausted for a number of familiar reasons: it is still too inefficient, too wasteful of energy and natural resources, it generates too many damaging externalities and it depends on an abundant pool of cheap labour, which China no longer has. At a similar stage of development, Japan, Korea and Taiwan all made the transition to higher value, more innovative and more technologically advanced models, much as China is trying to do today. In China’s case, the urgency is the greater because of three decades of damage to water, air, soil and human health, with the attendant social unrest they have brought.

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**In China, Uneven Progress on Health Front, By DAVID LEONHARDT (excerpt) November 23, 2010**

(...) I recently spent some time in China, and despite everything I’d heard in advance about the pollution, I was still taken aback. The tops of skyscrapers in Beijing can be hard to see from the street. Breathing the smog can feel like having a permanent low-grade sinus infection. For the Chinese, cancer has displaced strokes as the leading cause of death, partly because of pollution, notes Yang Lu of the Keck School of Medicine at the University of Southern California. Finally, there is the medical system itself. The dismantling of state-run industrial companies over the last two decades has ended the cradle-to-grave benefits system known as the iron rice bowl. In its place was a market-based medical system many Chinese could not afford. Even in emergencies, people sometimes had to bring cash to the hospital to get treatment.

Early last year, the Chinese government began expanding health insurance coverage, with the goal of making it universal by 2020. The initial signs look pretty good. The World Bank does not have data past 2008, but numbers published by the C.I.A. suggest that life expectancy has risen in the last two years. In my travels, I visited a simple, clean clinic in rural northern China that seemed to be providing the kind of basic care that could make a huge difference. Of course, whatever the problems with China’s boom, it still has significantly improved the lives of its citizens. Many fewer of them live in grinding poverty, and the population is living longer, even if the gains have not been as large as in many other countries.

Over any extended period, economic growth is probably necessary for higher living standards. It’s just not enough. As Tsung-Mei Cheng, a health policy expert at Princeton, argues, “Economists and the media tend to pay too much attention to the growth of G.D.P. over all, and not enough to its

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distribution.” There is, after all, another large country with unimpressive recent gains in life expectancy, even smaller than China’s. That’s right: the United States. Since 1990, we have been passed by Chile, Denmark, Slovenia and South Korea, among others. China is still five years behind us, but it’s gaining.

I.III Water pollution

Challenges in environmental protection still serious, by WANG QIAN
June, 4th 2011

BEIJING - China admitted that it is facing serious challenges in environmental protection, including pollution from toxic metals aggravating the public and a severely unsafe underground water supply. "We have entered a period when sudden incidents impacting the environment or pollution accidents are occurring frequently and when environmental pollution is daily causing social contradictions," Li Ganjie, vice-minister of environmental protection, said in a press conference in Beijing on Friday.

During the 12th Five-Year Plan (2011 - 2015), the country will give priority to environment issues involving drinking water, air pollution, heavy metal pollution and soil pollution, Li said.

Unsafe underground water, frequent lead poisoning incidents and escalating damage to the environment protection zones are all testing the country’s fragile environment.

According to the country’s latest environmental assessment report in 2010, more than half of China’s cities are affected by acid rain. About 40 percent of major rivers are so polluted that the water can only be used for industrial purposes or landscaping. About 16 percent of the total is unfit for agricultural irrigation.

The current drought affecting the middle and lower reaches of the Yangtze River has exacerbated pollution in the lakes and tributaries in the river basin, many of which were already badly polluted, Li said.

The report said an investigation of the underground water of 182 cities across the country showed more than 57 percent of the tested underground water samples are classified as "bad" or "extremely bad" in quality.

The waters off the booming cities of Shanghai, Tianjin and Guangzhou were rated as severely polluted, with only stretches around the resort island of Hainan and parts of the northern coast given a totally clean bill of health, Li said.

Just 3.6 percent of the 471 cities monitored got top ratings for air cleanliness, and there was a continuous loss of biodiversity around the country, Li added.

Besides the air and water pollution in cities, heavy metal pollution was also a big concern, threatening people’s health and causing social instability.

Last year, China witnessed 14 major heavy metal pollution incidents, including nine involving lead poisoning. From January to May this year, seven others occurred, Li said.

He added that the State Council, or China’s cabinet, recently approved a plan for the treatment and destruction of heavy metal pollution for the 2011-2015 period.

Governmental 2010 report, 3.6. 2011 Press Conference by Li Ganjie
The fast economic development is not only harming quality of water, air and soil, but also damaging the country's last "clean" zone, environment protection zones with about 22 percent of them affected, Li said, adding coal industry is the main polluting source.

The government has begun a monthlong crackdown on the coal industry and vowed to punish them in cases which damage the environment or seriously affect residents.

As the world eyes the ongoing crisis at the Fukushima Daiichi nuclear plant following Japan's disastrous earthquake and tsunami in March, China also learned a "hard lesson from it", Li said.

He said China needs an independent regulator for nuclear safety, supported by strong technology and sufficient money, and called on nuclear supervision agencies around the world to share timely information on the subject.

Safety standards for the nuclear industry need to be raised, especially to prepare for potential extreme weather and geological disasters, according to Li.

China Daily

Water Pollution and Human Health in China, By CHANGHUA WU and others, in March 1999

World Resources Institute, Washington, DC 20006 USA; National Conditions Analysis Group, Chinese Academy of Sciences, Beijing, China; School of Public Health, Shanghai Medical University, Shanghai, China

Abstract:
China's extraordinary economic growth, industrialisation, and urbanization, coupled with inadequate investment in basic water supply and treatment infrastructure, have resulted in widespread water pollution. In China today approximately 700 million people-over half the population-consume drinking water contaminated with levels of animal and human excreta that exceed maximum permissible levels by as much as 86% in rural areas and 28% in urban areas. By the year 2000, the volume of wastewater produced could double from 1990 levels to almost 78 billion tons. These are alarming trends with potentially serious consequences for human health. This paper reviews and analyzes recent Chinese reports on public health and water resources to shed light on what recent trends imply for China's environmental risk transition. This paper has two major conclusions. First, the critical deficits in basic water supply and sewage treatment infrastructure have inched the risk of exposure to infectious and parasitic disease and to a growing volume of industrial chemicals, heavy metals, and algal toxins. Second, the lack of coordination between environmental and public health objectives a complete and systematic approach to managing water resources, and the general treatment of water as a common resource mean that the water quality and quantity problems observed as well as the health threats identified are likely to become more acute.

More article to get more information


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I.IV Air Pollution

**Health Damages from Air Pollution in China9, by MATUS, K. et all in 2011**

In China, elevated levels of urban air pollution result in substantial adverse health impacts for its large and rapidly growing urban population. An expanded version of the Emissions Prediction and Policy Analysis (EPPA), EPPA Health Effects, was used to evaluate air pollution-related health impacts on the Chinese economy. The effects of particulate matter and ozone were evaluated for 1975 to 2005, based on a set of epidemiological estimates of the effects of exposure to these pollutants. The estimated marginal welfare impact to the Chinese economy of air pollution levels above background levels increased from $22 billion in 1975 to $112 billion in 2005 (1997 US$), despite improvements in overall air quality. This increase is a result of the growing urban population and rising wages that thus increased the value of lost labor and leisure. Welfare losses from air pollution-related economic damage decreased from 14% of the historical welfare level in 1975 to 5% in 2005 because the total size of the economy grew much more rapidly than the absolute air pollution damages.

**A CHINA ENVIRONMENTAL HEALTH PROJECT FACT SHEET Transboundary Air Pollution—Will China Choke On Its Success? By Juli S. KIM. February 02, 2007**

This research brief was produced as part of the China Environment Forum’s partnership with Western Kentucky University on the U.S. AID-supported China Environmental Health Project (CEHP).

It is difficult to underestimate the influence of China’s atmospheric pollution on the Asia Pacific region and beyond. Prevailing winds carry pollutants such as ozone, fine particulate matter, and mercury from continent to continent, and in this case, from Asia to North America. Although statistics on China’s dismal air quality are dated, anecdotal, or limited in scope (e.g., China has not publicly

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disclosed CO2 or mercury emissions data since 2001), when examined as a whole, overall air pollution trends indicate a growing economic and health threat both within and outside China. Although the regional impact of China’s air pollution has encouraged some cooperation, new data on the economic, environmental, and human health implications of China’s pollution on Northeast Asia and the western seaboard of the United States and Canada call for more serious efforts by global stakeholders to engage China on these issues.

**Coal, Cars, and Desertification**

The majority of China’s domestic and transboundary air pollution originates from the country’s heavy dependence on coal, which makes up about 70 percent of its energy mix. Despite efforts to diversify energy sources, China will remain dependent upon coal for the foreseeable future. This dependence—along with the low quality of the coal, the lack of widespread coal washing infrastructure and scrubbers at industrial facilities and power plants, and plans for building nearly 100 new coal-fired power stations each year until 2012—translate into increasing health and environmental problems for the East Asia/Pacific region and beyond. China is second only to the United States in energy consumption and greenhouse gas (GHG) emissions, and is expected to surpass the United States in GHG emissions by 2009. The expansion of China’s power plants alone could nullify the cuts required under the Kyoto Protocol from industrialized countries. Beyond coal, in urban centers where the majority of the wealth and record breaking GDP rates are generated, car emissions have replaced coal as the major source of air pollution. Currently, sixteen of the world’s twenty most polluted cities are in China and auto emissions will worsen urban air quality in China. Although current data show that China only has 22 cars per 1,000 people as opposed to 764 per 1,000 in the United States—China is well on its way to becoming the dominant market for automobiles. As vehicles become more affordable, due especially to WTO tariff reductions, the number of automobiles in China is expected to rise from the current 24 million to 100 million by 2020. There is already a car culture developing, similar to that witnessed in the United States during the 1940s, with car driving clubs as a prime example. Policies for cleaner cars have been made, but face many obstacles (See CEF meeting summaries from 2 October 2006 and 30 November 2006 for more details). Box 1 provides more examples of the economic and health costs of China’s growing air pollution.

**Box 1. Negative Economic and Human Health Trends from China’s Air Pollution**

- The average decrease in China’s crop yield attributable to the combined effects of acid rain from SO2 emissions and black carbon soot was 4.3 percent in the mid-1990s.
- Climate experts link greenhouse gas emissions and deforestation to the rising incidences of natural disasters witnessed between January and September of 2006, which forced the evacuation and relocation of 13.2 million people and killed more than 2,300, causing direct economic losses of $24 billion.
- According to recent estimates by Qin Dahe, director of the China Meteorological Administration, air pollution is driving some extreme weather events, which hamper China’s economic growth by between 3 to 6 percent of GDP, or $70-130 billion, annually.
- Coal burning in China emits 25 percent of global mercury and 12 percent of global CO2.
- A 2006 SEPA survey found that 41 percent of fish species in water bodies in eastern Jiangsu Province, where there is a high concentration of manufacturers, contained various heavy metals transmitted through polluted air fall-out.

Exacerbating the coal and car emission pollutants are large plumes of dust the size of small countries blowing eastward from the encroaching deserts of Mongolia and Western China. Desertification in China is advancing at an annual rate of 1,300 square miles, destroying farmlands and driving more rural migrants into cities. The expanding deserts are increasing the severity of the spring sandstorms—100 are expected between 2000 and 2009, a significant increase over the 23 in the previous decade. Regionally, sulfur dioxide (SO2) and mercury emissions from coal burning are some of the main pollutants spreading from China. Acid rain resulting from coal and fossil fuel combustion has been damaging nearly one-third of China’s limited cropland. The Korean Peninsula and Japan have felt the brunt of China’s “export” through acid rain, mercury, and other airborne contaminants.
as Siberian winds and dust storms flush out China’s pollution every spring, severely damaging forests and watersheds. More recently, studies have examined the problems associated with black carbon (BC) soot in China. BC—the active ingredient in haze produced by burning crop residues, household coal stoves, and vehicles—is potentially the second most potent global warming gas after CO2. China is the largest BC emitting country in the world, responsible for 17 percent of these emissions. The BC particles are less than one micron in diameter and cause hundreds of thousands of premature deaths from respiratory illnesses each year in China. Moreover, BC blocks sunlight and may be lowering crop yields for both wheat and rice in China by 30 percent. Regionally, scientists consider China’s BC emissions as responsible for some of the warming and destabilizing weather throughout the Pacific Rim.

The Health Effect
According to a recent World Bank report, some 300,000 to 400,000 people die in China every year due to respiratory illnesses triggered by air pollution. Globally, scientific research is illuminating the clear linkages between not only air pollution and respiratory complications, but also to heart disease. For example, a study in Heart, the journal of the British Cardiac Society, found a corollary relationship between increases in particulate air pollution and deaths from heart diseases. A study funded in part by the U.S. Environmental Protection Agency (due out February 2007) in The New England Journal of Medicine features one of the largest studies ever conducted on the linkages between heart diseases, stroke, and air pollution. This particular study, which focused on women, found air quality to be a strong predictor of heart and stroke risks. However, experts claim that although it is indisputable that fine particle air pollutants pose a risk to health, the reasons are not quite as clear. Researchers state they are still investigating whether it is the chemical composition, size, or ability to transport other pollutants deep into the lungs that is responsible for the effect. These particles often measure less than one-tenth of a micron, in essence being small enough to pass through the walls of a human lung, into the body’s red blood cells. In one study in the Journal of Toxicology and Environmental Health, researchers found that in the developing nations of Asia two-thirds of their health problems are due to urban air pollution. The growing level of mercury in the air and water in China also raises major health concerns. Mercury accumulates in living tissue, such as fish grown in China’s numerous aquaculture pools. When this fish is eaten it can cause birth defects, child development problems, and potentially cancer.

The Disappearing GDP Effect
In 2006, China’s environmental watchdog echoed the 1997 World Bank’s Clear Air Blue Water report that domestic health problems and economic losses stemming from pollution cost China nearly 8 percent of the GDP—statistically eating up almost all of the country’s economic growth. The Chinese government’s Green National Accounting Study Report claims that pollution in general is cutting into 3.1 percent of GDP—although other economists place the number as high as 10 percent. In China an estimated 19 percent of the agricultural land in seven southern provinces (Jiangsu, Zhejiang, Anhui, Fujian, Hunan, Hubei, and Jiangxi) has been damaged by SO2 and acid rain. Additionally, China’s dirty production is also very detrimental to Hong Kong’s economy. A group of nine public health researchers, economists, and environmental scientists released a report in June 2006 estimating that air pollution—much of it blowing from the north—could cost Hong Kong as much as HK$21 billion a year. Investors also are coming to view this pollution a concern. Independently, both the chairman of the Hong Kong Stock Exchange and Merrill Lynch issued media-grabbing statements that the worsening air quality in southern China is a threat to Hong Kong’s economic competitiveness. The problems lie directly upwind in the Pearl River Delta, where one-third of China’s exports are produced, as well as 80 percent of Hong Kong’s air pollution. As the number of days with reduced visibility has tripled in the past three years, a recent survey discovered that 40 percent of businesses were finding it harder to recruit overseas nationals to Hong Kong and southern China due to this factor. In response, Merrill Lynch’s Asia Pacific division recently suggested that investors should sell properties in Hong Kong and invest in Singapore instead. Additionally, Merrill Lynch criticized the Hong Kong government’s lack of willpower to deal with the pollution problems, especially as most feel that waiting for Beijing to enact tougher laws and enforcement will be a long wait indeed.
**China’s Invisible Export**

The byproducts of China’s development are now being felt as far as the east coast of the United States. Besides the aforementioned statistics on China’s contribution to global warming and regional mercury fallout—research by the UN now indicates that some 53 percent of the world’s natural and human caused mercury emissions come from Asia, while Africa is a distant second with only 18 percent. The most commonly cited numbers attribute between 25 and 40 percent of global mercury emissions (from coal burning) to China. Within China’s borders, air pollution from coal, cars, and dust storms is responsible for between 300,000 and 400,000 premature deaths and 75 million asthma attacks annually. Additionally, China’s cement kilns, which account for around 40 percent of global cement production, are a major source of dioxin and furan—pollutants that can be transported airborne across long distances.

High levels of mercury deposition in the United States from China and India had been detected on both coasts of the United States. Research conducted in Oregon has shown that one-fifth of the mercury entering the Willamette River in Oregon comes from abroad, mostly from China. Mercury is especially suited for long distance travel because at the smokestack in China it is in elemental form and insoluble. However, by the time it reaches the U.S. west coast, it has transformed into a reactive gaseous material that dissolves in Oregon’s wet climate—falling onto the Willamette River’s watershed and slowly building up toxic levels of mercury in the local wildlife. Mercury is just one transboundary pollutant that U.S. scientists are tracking. Bruce Hope, a senior environmental toxicologist at the Oregon Department of Environmental Quality, estimates that global sources contribute 18 percent—more than four times the local share—to Oregon’s air pollution. Increasingly, the ozone on the west coast will be determined by China. In California, for example, some researchers believe at least one-third of California’s fine particulate pollution—known as aerosol—originates from Asia. These pollutants could potentially nullify California’s progress on meeting stricter Clean Air Act requirements. In May 2006, University of California-Davis researchers claimed that almost all the particulate matter over Lake Tahoe was from China. The great irony is that these pollutants are mainly due to the burgeoning demand of U.S. and EU consumers for cheap Chinese goods—which is driving the Chinese economic development. Some estimates cite that 7 percent of China’s CO2 emissions are due to production of U.S. imports.

**Cooperative Collaboration**

The Chinese government has welcomed considerable international assistance to help the country address its severe air pollution problems that are tied to coal mining, cars, and desertification. The international community—in the form of multilateral organizations, bilateral aid, and nongovernmental organizations—has been very active in addressing a broad range of air pollution issues through energy efficiency, demand-side management, clean coal, and renewable energy projects. Many of these projects have been driven by international concern regarding China’s growing GHG emissions, but nearly all of them focus on local benefits of controlling such emissions. While U.S. NGOs are particularly active in energy and air pollution collaboration in China, the U.S. government could have more sustained projects in these areas. The growing the regional impacts of China’s air pollution and related energy hunger should be viewed as incentives for the Bush administration and Congress to pursue active environmental collaboration with China—before China’s energy hunger and pollution—which is in large part due to U.S. and EU consumerism—are used as political tools to vilify China. There is a definite need to develop a coherent approach to energy and environmental relations with China. As the April 2000 spy-plane incident and recent satellite shoot-down illustrated, there remains considerable mistrust between the United States and China—cooperation on energy and environmental issues could help build up needed trust between the two countries. The Chinese government has shown initiative through recent enactments of stricter air pollution control laws and major new incentives and investments into renewable energy, however, the need for the conveyance of a clear and cohesive strategy, along with coordination and organization throughout all the ministries and environmental protection bureaus is necessary for China to begin to balance the benefits of economic growth against the negative costs of air pollution to public health.

*Portions of this paper were drawn from an upcoming online article by Jennifer L. Turner and Juli S. Kim (February 2007). “China’s Dirtiest Export.” Foreign Policy in Focus: China Focus. www.fpif.org.*
Air Pollution in China, with Junfeng (Jim) Zhang and Ashley Ahearn The Researcher's Perspective (National Institute of Environmental Health and EHP)

Air pollution in China, one of the world’s oldest civilizations, reflects a combination of traditional and modern-day factors. Severe air pollution in Chinese cities is the result of rapid industrialization, urbanization, and growth in vehicle use. At the same time, traditional indoor burning of solid fuels such as coal and dung presents acute, severe exposures to pollutants including particulate matter, carbon monoxide, arsenic, and mercury. In this podcast, Junfeng (Jim) Zhang tells host Ashley Ahearn about some of the factors that make air pollution a significant problem in China.

AHEARN: It’s The Researcher’s Perspective. I’m Ashley Ahearn. This year marks the 10th anniversary of EHP’s Chinese-language edition. In honor of the occasion we’re taking a look at air pollution and human health in that country. In China an estimated 470,000 people died from exposure to outdoor air pollution in 2000, i and each year an estimated 400,000 premature deaths result from indoor air pollution—exposures like coal smoke from heating and cooking. i With increasing fossil fuel consumption and urban populations on the rise in that country, scientists and citizens alike are calling for more stringent environmental standards to protect human health. Dr. Jim Zhang is a professor of environmental and global health at the Keck School of Medicine at the University of Southern California. He joins me via Skype to talk about air pollution and human health in China. Hi, Dr. Zhang.

ZHANG: Hi, Ashley.

AHEARN: Let’s start from a global perspective. How does the air quality in China compare to other countries, and what makes up the air pollution in China?

ZHANG: Historically China now is at a developmental stage that two types of air pollution coexist. One is the traditional air pollution, which is the simple combustion in uncontrolled devices like cook stoves, and those devices are very polluting because they using poor-quality fuels like wood, crop residue, or coal. And [the other is] you have power plants. You have industrial facilities, oil refineries, and then very importantly you have motor vehicles using fossil fuels. So China has the combination of those both very old traditional air quality problems plus the modern industrialization-associated air pollution. So if you look at the other developing countries like India, so the situations are similar, but if you compare to Western countries the air quality is much better than today’s air quality in Chinese cities.

AHEARN: Dr. Zhang, you did some interesting research around the time of the Beijing Olympics in 2008 when the Chinese adopted some very stringent regulations to improve the air quality. Tell me about your findings.

ZHANG: Yes, we measured air quality two months before the Olympics and during the Olympics and two months after the Olympics, and at the same time we recruited a group of Beijing residents. And then we measured their cardiovascular and respiratory health end points, and we compared those health end points before the Chinese government started that very aggressive air pollution control actions for the Olympics. And what we found was really very interesting and pretty much supports our hypothesis, which is that during those six weeks of air quality improvement, cardiovascular and respiratory health conditions of those Beijing residents improved, and after the Games, when the air quality control regulations were relaxed, we saw the increase of the air pollution levels again, and same time we saw that those improved parameters of cardiovascular health and respiratory health also got worse again. So it’s very clear that when you’ve got an air quality improvement you’ve got a health improvement, and when that improvement of air quality is ended your health improvement is also ended. So that’s clearly meaning that we need sustained long-term policy control actions, but same time I think one of the legacies of the Beijing Olympics is that the public actually saw this improved air quality. You know, I have friends who live in Beijing. They’re not environmental professionals but they saw how blue, how nice the skies were during that period, and they said they’d really like to have that kind of thing continue, because many people haven’t seen that kind of air quality for years. Some kids who were born in China, if they’re younger than 20 years, they’ve never seen air that was that better in their entire life.

AHEARN: Dr. Zhang, let's talk a little bit about environmental policy in China. You coauthored a commentary where you critiqued the way the Chinese government has dealt with environmental issues, and you also said that some things are going right in terms of Chinese environmental policy. Let’s talk about those.
ZHANG: Sure. First of all the environmental protection, I think, just got to the government’s agenda very recently because for years the focus of the government is on the economic growth, and [air] quality has probably always been put at the bottom of their list. But that situation is gradually changing, I think largely driven by the public’s awareness of environmental damage. And with a very rapid GDP increasing, China has ability to address some very urgent environmental quality issues. In that commentary the two things that Chinese government has done worth mentioning and maybe actually set a good example: one is on the motor vehicle emissions of air pollutants. The national average of fuel efficiency as measured by miles per gallon—that number is way below the U.S. numbers. And also they have adopted the current European Union standards for emissions of carbon dioxide, NOx, all those pollutants that come out of the tailpipe of the vehicles. So that’s one thing I think China’s environmental policy really did a good job on. That and [the] second thing was Chinese government really invested in non–fossil fuel energy—renewables and nuclear—way bigger than the U.S. invested in the same non–fossil fuel energy options.

AHEARN: From your perspective, where is Chinese environmental policy falling short?

ZHANG: I think one of the most important things is the regulations, the laws, and the other one is the implementation of those laws. And the Chinese MEP—Ministry of Environmental Protection—set up lots of regulations, but at the local government level sometimes you have those competing interests: the economic, industrial interest or the environmental interest. And so I think there is lots of room to improve in that area.

AHEARN: What needs to happen, from your perspective, to ensure good environmental health and environmental quality in the future?

ZHANG: I think it’s really the education, and one thing I think that’s promising is the NGOs, nongovernmental organizations. Probably a majority of those NGOs in China has an environmental focus, so I think they have been very instrumental in terms of engaging the local people who may see some industry want to come in to have a facility in the middle of their community. And there is, in the last couple of years, there’s lots of media reports on those kinds of conflicts, and some caught national attention on some of those protests. And that means the public’s awareness of how environmental quality can affect quality of life is just tremendous. So when everybody realizes how important air quality is, then I think they will push through the government policymaking mechanism, and that’s where I think we’ll see the major improvements of air quality and other environmental situations in China.

AHEARN: Dr. Zhang, thanks so much for joining me.

ZHANG: My pleasure.

AHEARN: Dr. Jim Zhang is a professor of environmental and global health at the Keck School of Medicine at the University of Southern California. And that’s The Researcher’s Perspective. I’m Ashley Ahearn. Thanks for downloading!

Ahearn, host of The Researcher’s Perspective, has been a producer and reporter for National Public Radio and an Annenberg Fellow at the University of Southern California specializing in science journalism.
I.V Food safety

**NPC proposal regarding food safety as part of national security and encouraging the media involvement for exposing infractions, by Xinhuonet Beijing on June 29 (reporter Zhou Tingyu, Hu Hao)**

A Sub-committee of National Standing Committee members on 6/29 directed law enforcement to consider enforcing food safety in their inspection report, in full recognition of this law, also directed that the Food Security Act to be implemented unremittingly. Standing Committee members pointed out that food safety has always been an issue for the NPC deputies, and an issue of concern for the public. Since the Food Safety Act 2009 went into effect less than two years ago, the NPC Standing Committee twice carried out investigations to check the implementation of this law, which fully reflects the views of the NPC and its Standing Committee and its respect for the interests of the people concerned. During this particular investigation, the team sent inspection teams to seven provinces, conducting site investigations of 57 relevant units such as field trips, food producers, agricultural planting and breeding bases, supermarkets, hotels, restaurants, food fairs, food inspection agencies, and additionally held 28 seminars, check the depth, solid, effectiveness.

Standing Committee members that the law-enforcement inspection reports more comprehensive and objective reflection of the implementation of food safety laws over the case, in-depth analysis of the current food safety supervision in the main problems, it puts forward a further implement the Food Safety Act comments and suggestions, content, realistic, fully in place.

In addition, the Standing Committee members also carry out the implementation of food safety law, continuing to strengthen food safety recommendations as to further enhance the awareness of the importance of food safety. Food security is a part of "national security"; its importance is not subordinate to financial security, food security, energy security, ecological security. Increase the punishment for violations of food safety behavior, utilizing the rule of law as a means to maintain the citizens' "right to food security ". Promote food products, especially large-scale agricultural, industrial production experience, returning to a fundamental guarantee of food quality. Refer to scientific evidence, combined with China’s national conditions, to develop a unified national standard for food safety inspection and identification; make full use of the role of social organizations, strengthening the role of food production and industry associations to strengthen self-discipline; strengthen propaganda, food safety will involve a compilation of laws and regulations for practitioners and strong liquidity characteristics, intensify and increase the publicity and strict assessment of the law; give full credit to the supervisory role of the community, encouraging the whole society to participate in food safety supervision and so on.

**China has already begun to establish a national food safety risk monitoring network**

Xinhua net Beijing on June 29 (Reporter Hu Hao, Zhou Tingyu) Vice Chairman of NPC Standing Committee Lu Yongxiang, on 6/29, representing the NPC Standing Committee enforcement inspection team for the implementation of food safety law, said in the inspection report that China has already begun to establish a national food safety risk monitoring network. Lu said that China’s current capability for food safety risk monitoring and early warning has been strengthened, a national

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food safety risk assessment expert committee had been formed, and evaluation mechanisms have been established. The first steps initially established surveillance points of the national food safety risk monitoring network in 31 provincial-level, 244 city-level and 377 county-level areas for food contaminants, foodborne pathogens and foodborne disease. Lu Yongxiang at the same time pointed out that "At present, China’s food safety risk monitoring and evaluation base is weak, insufficient capacity, food safety standard system does not meet the requirements of supervision."

He suggested that to further strengthen the food safety risk monitoring and evaluation capabilities and standard system, as well as the establishment of monitoring resources and data sharing mechanism, they should resolve as soon as possible some of the problems where the food standards are subpar and where the standards are not uniform, thus further improving China's food safety risk monitoring, and enhance the scientific quality and accuracy of the standards system.

China is preparing a food safety regulatory system plan for next five years
Xinhua net Beijing on June 29 (Reporter Hu Hao, Zhou Ting Yu) of the NPC Standing Committee Vice Lu on 6/29, on behalf of the NPC Standing Committee law enforcement inspection team for the implementation of food safety law inspection report recommended that the whole society must strengthen food safety supervision. Lu said that all sectors of society should be encouraged to actively participate in the supervision of food safety issues, and streamline the social channels of supervision. To protect and encourage the people informed about food safety, participation, expression and supervision, supervision of food safety, and provide a safe place for the people to report complaints and violations to facilitate smooth and effective channels.

The report recommends that governments at all levels to establish uniform reporting of complaints telephone, establish reward mechanism to facilitate and encourage public participation in food safety supervision. At the same time, encourage the news media monitoring, timely disclosure of food safety incidents. News media should also increase awareness of social responsibility, objective, accurate coverage of food safety issues. In order to strengthen the monitoring of food safety, Lu said, at all levels, steps should be taken at NPC to solicit reports, investigations, inspections and other means, to understand the realities of implementing the food safety law, and continue to urge the Government to create good food safety law, and to report legal issues with implementation problems in a timely manner to the Government and relevant departments, so that they can make recommendations. Governments at all levels should strengthen the regulatory responsibilities of monitoring, coordinate and solve problems in a timely manner, and direct and urge all regulatory authorities to perform their duties conscientiously and enforce the law strictly.

Lu Yongxiang: To resolve the supervisory aspect of the food safety issue
NPC Standing Committee Vice Lu Yongxiang on 6/29 in Beijing, said, that the existing food safety control systems and mechanisms must be reformed and improved. Objectives are to resolve the problem of conflicting sub-regulations and to reduce regulatory variances, to prevent regulatory gaps. While at the same time, further increase efforts to control the pollution of food sources and processing sectors. Today, the National People’s Congress Lu Yongxiang for food safety law on the inspection report on the implementation. He pointed out that China has initially established a level of 31 provinces, 244 cities and 377 county-level food contaminants, foodborne pathogens and foodborne disease surveillance points of the national food safety risk monitoring network.

Turning to the current outstanding issues of food security, Lu said that some food manufacturers legal sense of apathy, moral integrity is low, leading to food safety incidents continue to occur in important causes. Few local governments and departments for the mistake of maintaining stability, as well as one-sided pursuit of economic growth indicators and other reasons, a serious food safety incidents can not be promptly punished for criminal acts can not be effective against individual officers or regulators, and dereliction of duty, resulting in some enterprises can take advantage of food production and desperate, wanton and selling unsafe food and to the market. He pointed out that in the actual supervision of cross-regulation and regulatory gaps exist, some places even after the problem occurs in the buck-passing phenomenon, comprehensive and coordinated system of food safety mechanism has been strengthened out, such as local food security office settings vary, rights vary, it is not effectively integrated and coordinated role. He said the proposal to strengthen
the local government food safety examination and evaluation, and gradually establish and improve food safety responsibility system. Lu said that, Currently, the issue of contamination of food sources and pollution in the early processing has become more prominent, examples in behavior such as abuse or even prohibited use of pesticides, veterinary drugs, feed additives, and hormones, resulting in contamination of raw food materials. He proposed State-developed standards, treating the following: the abuse of food additives, the abuse of pesticides and fertilizers; with a uniform and consistent consequence, and vigorously promote the change and improved development, to promote consumption of agricultural products, livestock, aquatic products production base of the scale, and increase organization. (Reporter Zhang Ran Guo Chao)

Law enforcement committee: The problem of food source safety regulation must be resolved as soon as possible
Xinhua net Beijing on June 29 (Reporter Hu Hao, Zhou Tingyu) The NPC Standing Committee's food safety law enforcement inspection group, in the report presented to the Standing Committee on 6/29, the current head of China's food security reported that control of food safety sources is weak, this is a very conspicuous problem that requires all levels of governments to attach great importance to it, and that it needs to be addressed as soon as possible. NPC Standing Committee Vice-long Lu on behalf of his report to law enforcement group, said recent food safety cases, mostly in the source of food production and primary processing sectors. Such as abuse of process in animal feed additives, feeding, illegal use of "lean" and so on; in the food production process, with non-food raw materials, processed foods, abuse brighteners, preservatives, food coloring, etc. "The first source of law to strengthen supervision and eliminate hidden dangers, is the need to attach great importance to all levels of government and the major issues to be resolved as soon as possible," he said.

The report recommended that the State Council and relevant departments to (a) further increase management and governance of food production and operations at the food source, (b) to further strengthen the investment in basic research of food safety, (c) promote the management of modernization and standardization in the food market, (d) enhance food production and processing technology, new methods, new technology which can study the hidden dangers in problems with food safety, (e) to strengthen effective scientific inspection, (f) to further improve the detection, assessment, prevention and control capabilities of food safety hazards. NPC Standing Committee law enforcement inspection team in March 2011 to May launched a food safety law enforcement inspection, which is from June 2009 since the implementation of food safety law organized by the NPC Standing Committee law enforcement inspection of a second. Check the group was divided into four small groups, Jiangsu, Hubei, Sichuan, Inner Mongolia, Jilin, Shanghai, Shaanxi 7 provinces (autonomous regions and municipalities) were examined.

An important reason behind frequent incidents of food safety: the legal and moral sense of apathy of the operator of
Xinhua net Beijing on June 29 (Reporter Hu Hao, Zhou Tingyu) The NPC Standing Committee food safety law enforcement inspection group, reported to the Standing Committee on 6/29: Important reasons behind why food safety incidents continue to occur are: a sense of apathy in corporate food production and operation law, and low moral integrity. NPC Standing Committee Vice-long Lu Yongxiang in his report on behalf of law enforcement group, said that at present, some of the food production and processing enterprises and employees in making profits, set the legal, moral and expense of people's lives and health, production and processing with impunity toxic and hazardous food, and the means of ever-changing. Some more food production enterprises lack of social responsibility, rules and regulations, saying the very poor sanitary conditions, food quality can not be guaranteed. He said law enforcement inspection team also found that some local governments, departments and enterprises has yet to seriously carry out a comprehensive food safety law, effective advocacy, in particular the lack of food production and management personnel targeted training and education, causing some of the food production enterprises practitioners of the law do not understand, are not familiar with the situation is still relatively common.

The report recommends that the State Council and local government regulatory authorities for food safety, food production enterprises the main responsibility and social responsibility are a problem, take effective measures to strengthen the education and supervision, incentives and regulation of
production and operation enterprises according to law. Lu said, should (a) strengthen the education and training of workers in the food production and management industry, (b) to guide enterprises to improve and comprehensively guarantee the safety and code of conduct in regards to food production and operation of the system, (c) accelerate research and development for credible evaluation criteria and to guide incentive mechanisms, and (d) take full advantage of industry organizations, farmer cooperative organizations, and improve the overall self-discipline of the food industry. At the same time, cooperation between the following should be coordinated: the monitoring by regulatory authorities, the market and choices of the masses, supervision and reporting of the masses, in order to promote strict self-discipline, honesty, and ethics.

**Law enforcement group recommends increasing food safety assessments in local governments**

Xinhua net Beijing on June 29 (reporter Zhou Tingyu, Hu Hao) In order to empower local governments to effectively take on food safety, and to assume the "overall responsibility" of food safety responsibility, the NPC Standing Committee law enforcement inspection team suggested that the State Department to strengthen the local government food safety examination and evaluation, and gradually establish and improve the system of food safety responsibility. NPC Standing Committee Vice-long Lu 29, on behalf of the NPC Standing Committee law enforcement inspection team for the food safety law on the inspection report on the implementation. Enforcement inspection team suggested that the State roads should be further study and solve regulatory and horizontal regulatory coordination, strengthening of local government responsibility.

Lu said that food safety regulation, is an important part of the government's social management and responsibilities. Suggested the State Council and relevant departments for China's large population, different eating habits, food types complex, low production and management intensive, so bring a huge food market regulation problems, and food safety of long-term, regular and repeated features, enhance and innovate the public administration from the height of careful study measures, focusing on daily monitoring, supervision and consolidated supervision of full and gradually establish a scientific and effective long-term management mechanism. He also noted that the vast majority of food safety problems happen at the ground level, which means the control and resolution must also happen at the ground level. We much attach great importance to strengthening primary regulatory capacity building, and improve the grass-roots level of supervision and coverage. In accordance with food safety law, he proposed the complete reform on the basis of provincial institutions to speed up city and county food safety, institutional reform, the functions of the pace, and give adequate guarantees according to the actual needs of regulators, the primary regulatory authority in personnel, equipment, funds, etc. Especially important is the improvement in the quality of law enforcement personnel, while increasing funding for the local level for the required inspections and testing equipments.

**China to Offer Rewards for Food Safety Informers, Posted by SAMUEL WADE, July 29th, 2011**

China is to offer bounties in exchange for food safety tip-offs, according to Reuters: “Government departments at all levels must set up dedicated funds for a reward system for reporting on food safety,” the official Xinhua news agency cited a government directive as saying. Rewards will be paid out if investigations prove the veracity of the tip-offs, it added. Those who work for people or companies which adulterate food products are especially encouraged to participate, the report said. Governments must also make sure they protect the identities of the tipsters to prevent “revenge attacks,” and will punish those who slander others with false reports or provide false information to get the rewards, Xinhua added. Authorities have shown less enthusiasm for crowd sourced corruption accusations, banning sites such as iBribery.com earlier this year. Concerned citizens pointing out the location of new McDonald’s restaurants will not be eligible for rewards. This week saw one suspended death sentence and several long prison terms passed by a Henan court on a group illegally selling clenbuterol to pig farmers.
A joke circulating on the internet says the mainland's food safety problems have taught people a lot about chemistry. "We learned of paraffin from toxic rice, learned of dichlorvos [an insecticide] from hams, learned of Sudan Red [dye] from salted duck eggs and chilli sauce, learned of formaldehyde from hotpot, learned of sulphur from tremella [jelly fungus], and finally learned of melamine from Sanlu brand milk."

Recent events call for the joke to be extended: "we learned of clenbuterol from the pork processed by meat giant Shuanghui and learned of lemon yellow [a colouring agent] and the sweetener sodium cyclamate from dyed buns in Shanghai." That one of the mainland's latest food safety scandals occurred in one of its most developed cities - Shanghai - is cause for added concern. Mayor Han Zheng promised a thorough investigation after workers at a Shanghai factory were caught recycling out-of-date buns. Five managers at the Shanghai Shenglu Food company have been detained. The director of the city's food safety office, Wang Longxing, said he felt "very sorry" for Shanghai residents because steamed buns were a convenience food that many bought almost daily.

Last month, Vice-Premier Wang Qishan told National People's Congress deputies that he and other leaders were "very much embarrassed" by the country's food safety record. But the promises and apologies won't fix the flawed food safety system. Unless the authorities enforce the law strictly, step up punishment and hold officials accountable, more food safety violations will occur.

The Shenglu scandal came to light when a China Central Television programme this month showed the factory recycling out-of-date buns into "new" dough - mashing them and mixing them with unmeasured amounts of artificial colouring, sweeteners and preservatives. About 30,000 such buns, produced in filthy conditions, were sold to hundreds of Shanghai supermarkets every day. Shenglu has been granted a food manufacturing business licence every year for the past decade. It also stuck a QS (quality safety) mark on each of its bags of buns, with the approval of the local quality supervision authorities. Some managers told CCTV that quality inspectors dropped by for a visit each month, but they stayed in the manager's office and never set foot on the factory floor. That malpractice triggered an online outcry, with calls for punishment.

Food safety expert Wang Shiping, from China Agricultural University, says the authorities need to be resolute in tackling the food safety issue and should charge any officials associated with misconduct. However, very few officials have taken the blame for recent food scandals, including several cadres in Shijiazhuang, Hebei, who were sacked over the melamine-tainted milk scandal three years ago that saw six children die and 300,000 fall ill with kidney problems after drinking adulterated baby formula.

"At present, officials generally exhibit a lacklustre response to food safety matters," Wang says. "I think they will only take it seriously if it's linked to their positions or performance." To clamp down on unscrupulous and illegal food manufacturers, the State Council established a food safety committee in February, headed by Vice-Premier Li Keqiang. Its responsibilities include: analysing the food safety situation, working out a blueprint and guidelines, proposing supervisory policies and leading their implementation. The Ministry of Health was appointed to co-ordinate government departments. Wang says the committee's formation reflects the central government's determination to fight food safety violations, but the scandal-prone industry will prove difficult to rein in.

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11 Earlier article recapitulating the facts, source here: http://www.scmp.com/portal/site/SCMP/menuitem.2af62ecb329d3d7733492d9253a0a0a07vgnextoid=c8487f6b779f210VgnVCM100000360a0a0aRCRD&ss=China&s=News
And don't bother looking to the local food safety offices that have been set up in some cities in recent years, he says. When illegal operations have been exposed, they've distinguished themselves by trying to dodge responsibility and kicking the ball to other departments. "This is in sharp contrast to their enthusiasm when issuing licences, which can bring in income," Wang says. Penalties for food safety violations are anything but formidable. The National Food Safety Law, implemented in June 2009, capped fines at 10 times the value of products seized, with serious cases leading to the loss of business licences. A regulation issued in September last year raised the punishment to the death sentence, but even that hasn't deterred black-hearted producers. In March, a subsidiary of Shuanghui, the mainland’s biggest meat processor, was found to have bought pigs fed clenbuterol hydrochloride - known to farmers as "lean meat powder". It produces leaner meat but people who eat it can suffer dizziness, heart palpitations and profuse sweating.

At least six officials and employees at lower-level animal inspection stations have been fired or suspended, while 22 others - pig farm managers, traders and slaughterhouse staff - have been detained. That's why more and more disappointed people have become city farmers and grow their own vegetables. Others try their best to only eat at home, using raw food bought from farmers they trust. Beijing nutritionist Fan Zihong suggests steering clear of food that has gone through many manufacturing processes, because "for each additional process, there's the risk of irregularities". Fan also says it's best to eat a wide range of food rather than focusing on several favourites. "You have to diversify, since it’s not clear which type or brand of food will be exposed as toxic next," she says.

**Officials failing to halt food scandals. Despite safety push, toxic fare still turn up. By ALICE YAN on Apr 28, 2011**

Despite repeated calls for a crackdown on toxic additives in food, the mainland has been hit by scandals almost every day in the past week, from rotten meat and fertiliser pork sausages to soy sauce made with unpurified industrial salt.

Samples from various sauces produced in places including Beijing, Shanghai and Shandong recently found 11 had traces of arsenic and high levels of bacteria, the General Administration of Quality Supervision, Inspection and Quarantine said on its website yesterday.

The State Council launched an intensified campaign last week, triggered by high-profile reports of steamed buns made from recycled out-of-date buns and clenbuterol-tainted pork. In Guangzhou on Tuesday, inspectors found that a small workshop made pork sausages by mixing rotten meat and fertilisers, the Southern Daily reported yesterday. About three tonnes of the pork were found. The people behind the scheme said customers included major mainland food markets and supermarkets. Another manufacturer in Guangzhou was caught making soy sauce using unpurified salt meant for industrial use and pigments. Workers at the filthy workshop, which was operating without business or hygiene licences, put fake logos of famous brands on their packaging, the newspaper reported. Two food poisoning cases in Hunan and Shaanxi provinces over the weekend saw more than 500 people treated in hospitals. In Shaanxi, 250 primary school pupils in Yulin became ill after drinking Mengniu brand milk on Friday morning, the Sanqin Metropolis News reported. The city government later said the milk met national standards, but did not say what caused the pupils to be sick. In Hunan, 286 people are suspected to have eaten clenbuterol-tainted pork, the China Daily reported on Tuesday. Prosecutors in Foshan, Guangdong, said on Tuesday that a man had been arrested for soaking pork in a liquid mix of borax and soy powder to make it resemble more expensive beef, the Guangzhou Daily said yesterday. He admitted selling 16 tonnes of fake beef for 240,000 yuan. In Zhongshan, Guangdong, last week, the authorities raided a former pigsty and found tonnes of fake sweet potato noodle being made with corn, ink and paraffin and sold as a delicacy. Provincial leaders vowed on Tuesday to punish those responsible "seriously" and said they would apply lessons learned from the incident to the ongoing crackdown, the Southern Metropolis News said. In Chongqing, police discovered on Tuesday that an ice-cream firm bought 26 tonnes of melamine-tainted milk powder. In
Beijing, paper boxes for popcorn sold in cinemas were found to contain a high level of fluorescent bleach. Professor Li Du, a food safety and nutrition specialist at Zhejiang University, said the latest incidents demonstrated the official inertia in supervising the food industry. "Officials have always been announcing plans to clamp down on illegal food production activities," he said. "But why have they failed to control it and why are the scandals appearing so frequently? The main reason is that the punishment is too light for businessmen who break the law and officials guilty of dereliction of duty." The National Food Safety Law, implemented in June 2009, capped financial penalties at 10 times the value of products seized, with serious cases leading to the loss of licences.

In September last year the punishment was increased to the death sentence. But Li said clauses in the new rule were still vague and did not specify the punishment for officials. "China should learn from developed countries and impose harsh punishment, including forcing people with serious wrongdoing into bankruptcy and banning them forever from this industry," Li said. On Sunday, the State Council issued a blacklist of chemical materials that should not be added to food.

Food Safety in the Asia-Pacific Region: Current status, policy perspectives, and a way forward, by S.V.R.K.Prabhakar, Daisuke Sano, and Nalin Srivastava

1. Introduction
Food safety is a global problem threatening the food security of millions of people. The food safety problem is more prevalent in the least industrialised world than in the industrialised world (McIntyre et al. 2009). In the less developed world, unsafe food and water borne diseases are responsible for the deaths of approximately 2.2 million people annually, 1.9 million children amongst them (WHO 2008). Food safety-related health problems, like acute diarrheal illness, affect up to 1.8 million children worldwide in developing countries. Nearly 700,000 people die of food and water safety-related causes every year in the Asia-Pacific region alone (WHO 2004).

Much of these food safety problems can be traced to how we achieved gains in food production over the past few decades. Up until now the major strategy to achieve food security has been the enhancement of food production through the use of chemical inputs, often in excessive quantities, such as pesticides, food additives, hormones, and antibiotics. While this strategy has ensured sufficient quantity of food in the early years of the Green Revolution, eventually it has also resulted in degradation of the natural resource base and food safety related issues. In addition, the poorly managed post-harvest food supply chains, most notably in developing countries, have only added to food safety issues through contamination and food spoilage. Despite this, larger policy actions have still focused on food quantity issues rather than food quality issues, including food safety. Hence, food safety deserves much greater attention in the ongoing food security discourse and actions than it currently receives. The issue of food safety has arisen largely due to the way various resources (or inputs) have been employed in production and distribution of food over the years (Rattan et al. 2002; Waltner-Toews and Lang 2000) and hence is deeply related to sustainable consumption and production (SCP). Although organic agriculture in general and certified organic agriculture in particular have, to a certain extent, sought to provide freedom from using chemical inputs and food free from harmful levels of chemicals, they suffer from being limited to niche markets (e.g., among the affluent and health conscious) due to issues related to scaling up and prices. Hence, there is a

12 Source : Sustainable Consumption and Production in the Asia-Pacific Region Effective Responses in a Resource Constrained World, IGES White Paper III 2010, Chapter 10
need to look at other means of achieving food safety, while simultaneously addressing the issue of organic agriculture, so that all people can have access to safe food at affordable prices. Promoting SCP practices and policies in agriculture (that would enable a balance between quantity and quality aspects of food) may provide such an opportunity. Keeping the above in mind, this chapter looks at the current food safety issues in the Asia-Pacific region and aims to identify associated causal factors. The chapter also discusses existing food safety policies and practices, with a view to identifying ways to address current food safety issues. While food safety is relevant to food from both plant and animal sources, this chapter deals with only plants, as plant food still forms the largest source of calories in the world, especially in the developing world (FAO 2008). Further, since organic agriculture has long been considered as one of the means of achieving increased food safety, an attempt has been made to analyse its potential and identify some challenges, and to suggest a way forward towards greater food safety in the Asia-Pacific region.

Chapter Highlights: Food safety is an important issue requiring equal attention to food quantity and access to ensure holistic food security in the Asia-Pacific region. This chapter explores key issues in food safety in terms of sustainable consumption and production.

- Food safety is an issue of sustainable production and consumption in agriculture since both are linked through a web of feedback connections.
- Organic agriculture provides an important opportunity to promote food safety, although it is not the only answer.
- A combination of policies and actions including integrating food safety standards, policy coordination with relevant stakeholders through a lifecycle approach, producer and consumer capacity building, and better storage infrastructure are necessary to bring needed safe food security to the Asia-Pacific region.
- The research on food safety is at a nascent stage in the Asia-Pacific region and needs encouragement to contribute to polic.

If you want to read more, link: http://enviroscope.iges.or.jp/modules/envirolib/upload/2801/attach/fulltext_whitepaper3_e.pdf

**Why China Struggles with Food Safety**

Ink, dye, bleach, wax and toxic chemicals: These are just a few of the substances that have been found recently in food products in China, reigniting fears over food safety despite repeated government pledges to crack down on tainted eats. Why is China having such trouble making its food safe? While China is no stranger to food scandals, a spate of food contamination brought to light over the past month has been shocking even to the most jaded of observers here. Over the past few days, health authorities in the southern province of Guangdong shut down 17 noodle makers after they were discovered mixing ink and wax to their dough. Meanwhile, over the weekend, nearly 300 people in the city of Changsha were reportedly sickened after eating meat contaminated with the banned “skinny meat” additive clenbuterol, the subject of a meat industry in March.

In perhaps the most bizarre case, also in Changsha, a number of consumers earlier this month walked into their kitchens at night to discover their store-bought pork was glowing in the dark. Beijing has struggled with food safety for years. The problem appeared to come to a head in 2008, when milk tainted with the industrial chemical killed at least six children, sicken tens of thousands of others in 2008 and appeared to shock the government into taking decisive action. But the melamine eventually

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in the Chinese food supply, along with a host of other chemicals and illegal additives, leading many observers to wonder why China can’t seem to solve such a fundamental problem.

One of the biggest issues is the drive to make a buck at any cost, says Lester Ross, a Beijing-based attorney with U.S. law firm Wilmer Hale. Some companies see that by using additives, they can cut overhead costs or boost profit margins, and they merely aren’t thinking about the affects the additives will have on consumers, Mr. Ross says. The answer to that, according to Mr. Ross, is an education blitz. China has the ability to plaster its subways, bus stations and even television screens with messages and advertising that lets all people know the dangers involved using chemical additives in food. Local media reports of illnesses related to chemical consumption have helped, Mr. Ross says. A flood of news stories in recent days have informed Chinese consumers that meat containing clenbuterol may be leaner, but it may also cause headaches, nausea, and heart palpitations, while vegetables with sodium nitrate may grow faster, but they can also cause cancer.

In a push for greater clarity, China’s Ministry of Health is planning to revise and make public its list of legal food additives by the end of the year, while also publishing a black list of illegal additives, the state run China Daily But education is only part of the problem. Another issue, according to Mr. Ross, is that there are too many cooks in the kitchen — or rather too many bureaucracies handling food safety. The Ministry of Health is the lead agency on food safety issues, he explains, but the State Administration for Industry and Commerce is also involved, as are the State Food and Drug Administration and the Ministry of Agriculture. Struggles with food safety are not a specifically Chinese problem. Many countries, including the U.S. and Japan, have gone through similar growing pains in the food industry, says Wu Ming, a professor at Beijing University’s school of public health.

**Agriculture risks ‘being ignored and weakened’ by By JIN ZHU**

**December 08th, 2010 | China Daily**

China’s agriculture risks “being ignored and weakened” in the next five years in the face of the country’s quick industrialization and urbanization, Minister of Agriculture Han Changfu said in a recent interview.

Modernization in agriculture has been lagging far behind development of many other sectors, he said. Also, increasing shortages of farmland and water resources, as well as serious environmental pollution and heated competition in the global market, are expected to pose great challenges to China’s agriculture over the next five years, he said. “The country’s agriculture has witnessed great achievements in the past five years, thanks to huge government investment,” said Lu Bu, a researcher at the Chinese Academy of Agricultural Sciences. “But as agriculture is usually regarded as an industry that cannot generate great economic returns, it is easy to treat it lightly,” he said. Since 2007, the country’s annual grain output has remained above 500 million tons.

On Friday, the National Bureau of Statistics said the country’s grain output rose 2.9 percent year-on-year to 546.4 million tons in 2010, the seventh consecutive year of growth for China’s grain output. “China has never had such great harvests before,” Han said. Han highly praised agricultural achievements in the past five years, especially as the country was frequently hit by natural disasters, such as drought, rainstorms and low temperatures. The minister believed government support policies are primary reasons for the achievements. Ministry statistics showed subsidies for farmers on agricultural production reached 134.5 billion yuan ($20.23 billion) this year, a sharp increase from 14.5 billion yuan in 2004. Also, the country’s minimum purchasing price for wheat and rice has risen continuously in the past five years to protect farmers when grain prices were too low on the market.

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Farmers’ annual net income per capita was more than 5,000 yuan in 2009 and had an 8.3 percent increase on average from 2006 to 2009.

The central government plans to boost China’s annual grain output to more than 550 million tons by 2020, which means more high-yield fields and more advanced agricultural technologies will be adopted. At present, the average grain yield of the country’s 4,380 high-yield fields is 9.8 tons per hectare, compared to a national average of 5 tons. “More high-yield fields resistant to drought and flood will be built in next five years to ensure the country’s grain supply,” Han said. “The country will also strengthen its effort on infrastructure construction and provide more training opportunities to farmers, helping them increase their incomes,” he said.

Ministry of Agriculture under attack over apparent double standard, by
By Yang Ruoyu and Ge Lili December, 10th, 2010 | Global Times

The Ministry of Agriculture was criticized for promoting genetically modified (GM) food as safe for human consumption while calling for one of its affiliated kindergartens not to use transgenic edible oil. Mei Xinyu, an official from the Ministry of Commerce, wrote on his microblog Tuesday that the kindergarten run by the Ministry of Agriculture in Beijing recently issued a notice saying transgenic edible oil should be banned in the school’s kitchen.

GM food was first introduced in the early 1990s. Some experts said GM food has many advantages such as boosting production, but some question whether modified products are safe. Chen Mengsheng, a Ministry of Agriculture spokesman, said they will introduce measures to oversee GM food and will support use of new technologies to improve them. Earlier, the ministry said GM food was safe to eat. People became furious after learning that the kindergarten issued the notice and questioned the intentions of the ministry. “I think the ministry is ridiculous,” said Fang Lifeng of Greenpeace and a GM food expert. “The banning of GM oil in the kindergarten will no doubt make people suspicious about the safety of GM food.” The kindergarten deleted a clause in the notice about GM oil after criticism surfaced against the ministry and circulated on the Internet. Many Internet users displayed anger on Mei’s microblog. A microblogger named Tianxia said the ministry is using people as guinea pigs to test whether GM food is safe.

“Fat China, by PAUL FRENCH and MATTHEW CRABBE

Important concepts it mentions are:
-the ability of most urban Chinese to afford previously expensive foods on a regular basis (ie. meat, fish)
-the ability of most urban Chinese to afford eating out on a regular basis (and whether in the West or in China, restaurant meals tend to have much higher amounts of sodium, fat, and sugar) –the introduction of dairy into the Chinese diet -the rise in consumption of processed foods
-the rise in the consumption of soft drinks, sugar water (inappropriate labeled as "juice"), and alcoholic beverages like beer

Source: [http://www.scmp.com/portal/site/SCMP/menuitem.2af62ecb329d3d7733492d9253a0a0a0/?vgnextoid=8fbfbed7be1af210VgnVCM100000360a0a0aRCRD&ss=China&s=News](http://www.scmp.com/portal/site/SCMP/menuitem.2af62ecb329d3d7733492d9253a0a0a0/?vgnextoid=8fbfbed7be1af210VgnVCM100000360a0a0aRCRD&ss=China&s=News)

16 Source: Excerpt from the book: Fat China: How Expanding Waistlines are Changing a Nation (China in the 21st Century) Paul French, Matthew Crabbe
the decline of wet markets in most cities, which is significant because wet markets tended to sell fresh fruits and vegetables. Also, China's has seen a meteoric rise in the number of supermarkets, hypermarkets, and convenience stores. The intense competition in these industries forces these stores to carry products with longer shelf lives in prominent places, and other processed foods, many of which contain deadly trans fats. Carrying fruits and vegetables are simply a "loss leader" for many supermarkets, and they are mainly carried simply to bring people in the store.

-the rise in fast food (not only Western-style fast food, but also Chinese fast food, which is often equally unhealthy)

-the decline of the bicycle and rise in the automobile as a form of transportation, leading to much less exercise

-the way in which many urban Chinese now live in massive apartment blocks (*xiao qu*) in which there are almost no places for exercise (except for perhaps a few strange devices that are often only used by the elderly)

-the relative dearth of public parks, football pitches, and public sporting venues. And even in most parks, people are not allow on the grass to play.

-the "corporatization" of public spaces. Often developers re-make public spaces so that there are no public green areas, no public benches, and one has to purchase a beverage or a meal to sit in the public space (ie...like Shanghai's Xintiandi)

This is by no means a complete or exhaustive list of all the ideas the book discusses. But I'd strongly recommend the book as a way of understanding not only China's emerging health care crisis, but also for understanding the aspirations, beliefs, and consuming habits of many urban Chinese.

TWN Agriculture Info: Organic Farming Benefits Outweigh Agrochemical-based Agriculture, by LIM LI CHING, Third World Network 01 October 2010

Organic Farming Benefits Outweigh Agrochemical-based Agriculture

A comprehensive study of the sustainability benefits of organic farming systems could have far-reaching implications on global agricultural practices. The study by the Washington State University (WSU) found that organic fields and fruits were equal to or better than their conventional counterparts on almost every major indicator used. Led by WSU professor of soil science John Reganold, the multidisciplinary team analyzed 31 chemical and biological soil properties, soil DNA and the taste, nutrition and quality of three strawberry varieties on 13 each of conventional and organic commercial fields in California. The researchers found that the organic soils excelled in a variety of key chemical and biological properties, including carbon sequestration, nitrogen, microbial biomass, enzyme activities, and micronutrients. Organically managed soils also had much more total and unique genes and greater genetic diversity, important measures of the soil's resilience to stress and ability to carry out essential processes.

More article to get more information

- ENVIRONMENT, SOCIAL AND ECONOMIC ASPECTS OF SUSTAINABLE FOOD SUPPLY, WITH SPECIAL REFERENCE TO PEST MANAGEMENT. By Dr Charlie Clutterbuck, Director of Environmental Practice @ Work Lt http://www.sustainablefood.com/outlooks.pdf

II. Links and Literature


To further develop scientific proceeding of works concerning environment and people’s health, guarantee the goals set by the 11th Five-Year Plan to come true and promote the sustainable development of economy and society, 18 ministries, committee, and other authorities jointly worked out China’s Action Plan on Environment and Health (2007-2015), which was released on the website of the Ministry of Public Health on Nov. 12. Local authorities are required to implement the action plan based on regional circumstances.

1. Foreword

China is currently undergoing an important strategic period of economic and social development. To build an energy saving and environmentally friendly society, solve pressing environmental problems that harm human health and promote the sustainable economic and social development, are important tasks. They are also basic requirements needed to carry out China’s scientific outlook on development and build a harmonious society.

China has always paid great attention to environment and health problems. Right after the founding of New China, the government set ‘Prevention First’ as a guideline for national sanitation work. Patriotic public health campaigns were enacted all over the country to improve environment and sanitation. The campaign was successful in preventing epidemic outbreaks and lowering the prevalence of disease, thus protecting people’s health. The campaign played an irreplaceable role in national construction and paved the way for smooth economic development. In the early 1980’s, China made 'environmental protection' one of the country’s basic national policies. The government advocates the rational development and utilization of natural resources, controls on environmental pollution and ecological destruction, and prevention work to minimize environmental degradation.

For years China has constantly strengthened both management and research on environment and health and the country has achieved great progress in this field. As the economy grew after the reform and opening-up, the general public expected better living conditions and the state of public health has consistently risen. Environmental degradation, ecological destruction and potential risks to
public health have all become key restraining factors toward sustainable economic growth and harmonious societal development. To improve positive work strategies for environment and health, and to solve the pressing contradictions between development, environment and health are the major problems that China faces today. In recent years, the World Health Organization, the United Nations Environment Program (UNEP) and its partners and member states, have worked together to promote the formulation of a comprehensive strategy and policy for environment and health. A long-term institutional cooperation mechanism between environmental and public health departments was proposed. National action plans on environment and health were also suggested.

In order to promote environment and health work in China and respond positively to the call from international society, China published this National Action Plan on Environment and Health (2007-2015). The Plan is the first of its kind in this field, and it is expected to guide environmental and health work in a scientific way. Positive public health is mandatory for sustainable social and economic development.

2. Guidelines and basic principles

2.1 Guidelines
The government should improve the management and research regarding environment and health, try to reduce environmental related diseases to safeguard the public health, improve their ability to response to and offer quality service and promote harmonious development between the two.

2.2 Basic Principles
The government at all levels should play a leading role in mobilizing social forces and advocating the general public to participate. Try to improve cooperation and increase interaction between government departments, and make effective use of present resources. Prevention should be put first and supervision is crucial. Bear in the mind the policy of “prevention first,” while attempting to improve the ability to guard against risks and to control pollution from every source. Implement related policies in a scientific way. Try to promote equalization of public services.

3. Targets

3.1 Overall Targets
The government will enact and improve rules and regulations regarding environment and health; control environmental hazards and reduce environmental related disease to safeguard the public health. Authorities will try to reach emission control targets set in the 11th Five-year Plan and help achieve the Millennium Development Goals, while promoting the continuous and coordinated growth of the economy and society.

3.2 Staged Targets
2007-2010: Establish all-round cooperative mechanism between environment and health departments and improve the assessment system designed for environmental hazards. Make a comprehensive assessment of current rules and regulations on the environment and public health and find out which ones need to be improved and which are still out of range. Complete the survey on the current situation of China’s environment and health. Finish the research study for measures on the environment and health supervision network. Strengthen and improve the scientific study on the environment and health safety assessment.
2010-2015: Start the work of researching, enacting and amending environment and health related rules and regulations. Establish a standard system for environment and health work. Build an effective management team and improve technical ability. A supervision network on environment and health and a platform for sharing information should be basically completed. Try to perfect an assessment of environmental hazards and risk prevention and early-warning system. Ensure that several departments can cope with public emergencies and mobilize all sections of society to participate in the work of environment and health.

4. Action Plans
4.1 Setting up a standard system for environment and health related laws and regulations
The environment and health work should be in line with the Party's people-oriented governing
conception and aim to protect public health rights and improve the people's quality of life. Improved
laws, regulations and a standardized system will provide a sound legal backing for government
supervision and standardization of social activities.
Enacting and improving environment and health laws and regulations.
Assess the effectiveness of current law enforcement, identify problems and design an overall plan to
improve the system. Conduct research work on environmental damages compensation law, to hold
polluters accountable for their environmental pollution. Research and work out measures to appraise
the degree of the environmental damages, compensation items, procedures and legal aid for victims.
Improve the laws on environmental impact assessment and make the impact on health a necessary
part of the assessment. Strengthen the prevention and control work of health risks. Begin drafting
regulations on drinking water safety and formulate assessment rules covering the environmental
impact on health, indoor air quality management, and emergency response on public environmental
pollution incidents.
Enacting and improving environment and health related standards.
Based on environment and health work needs and in line with China's national conditions, we should
improve the standard system and work out the basic standards on environment and health and solve
the problem of linking with current standards. Following are standards need to be worked out soon:

---Standard on appraisal and determining of environmental damages on health
---Standard on supervision of environmental pollution impact on health
---Standard on appraisal and risk assessment of environmental impact on health
---Standard on hygienic appraisal of drinking water, indoor air and Electromagnetic radiation
---Standard on biological pollution on earth
---Standard on detection of pollutant and health impact index
---Standard on emergency response on public environmental pollution incidents.

4.2 Build a supervision network on environment and health
Build a real-time and systematic supervision network on environmental pollution impact on health,
and analyze the reasons and results, to provide scientific foundation for the government to work out
effective coping measures and policies.

Formulate a unified national supervision plans and standards, improve the supervision equipment
and build a qualified supervision team. A national environment and health supervision network
should consist of environment quality supervision and supervision of the impact of pollution on
health. Improve research on supervision and ascertain China's major pollutant levels, the status of
pollution's impact on health and the developmental trends. Provide technical support to protect the
environment and human health in a scientific way.

Establish a monitoring network of drinking water safety and health: consider the tasks and
monitoring contents of the national drinking water safety scheme, set up a pollution index in water
sources that can be monitored, create an irrigation water quality index & drinking water quality
index, monitor sphere of water-caused diseases and other information related with health; draw up a
state monitoring scheme, and reasonably distribute monitoring stations.

Establish a monitor network for air pollution and human health: recognize major pollutants in the air
that harm people's health and those that indirectly harm people's health via agricultural, husbandry,
fishery products, set up a human health monitor index, and set up a state scheme of air pollution and
health monitoring; set up monitoring stations in communities to collect information about residents'
health; increase the frequency of air quality monitoring and increase their numbers to improve the
monitoring of major pollutants.

Establish a monitor network for soil and human health: set up monitoring stations in areas having
typical soil environment, draw up state and regional monitoring schemes, combine and strengthen
the current resources and forces concerned with monitoring soil and human health.
Establish monitor networks for extreme weather and human health: under provincial levels of supervision, set up monitoring stations in cities and counties to conduct real-time monitoring, analysis and evaluation of physical harm happening to people due to extreme weather, enhance their ability during extreme weather to make forecasts and enlarge monitoring regions.

Establish monitor networks for hygiene and biological safety in public places and special places: targeting the risk of biological pollution and health damage pre-existing in public places, hospitals, biological labs, and breeding farms, draw up relevant monitoring programs and set up monitoring stations in those places.

4.3 Strengthen the risk warning systems concerning environment and health and the emergency disposal work systems
Effectively carry out risk evaluation, risk warning and emergency disposal, raise the ability of risk prediction and emergency disposal to get rid of or minimize environment and health damages.

Carry out environment and health risk evaluation: set up health and environment risk administrative mechanisms, improve the risk evaluation methods and procedures, improve the prediction and administrative forces of controllable damages on environment and health, and gradually control the cost of environment and health risks.

Enforce environment and health risk warning systems: based on environment and health risk evaluations, predict serious environmental pollution and health threats they may impose, put forward administrative and technical measures to deal with these issues. Set up environment and health risk warning, reporting and publishing mechanisms.

Strengthen the capability to cope with emergencies concerning environment and health: in the light of related laws and regulations, set up relevant accidents reporting mechanisms. Clarify the controlling status of environmental and public health departments when dealing with public emergencies caused by environmental pollution, and other departments that would participate in the efforts if needed.

Carry out monitoring and evaluation of dangerous factors so as to raise the ability to predict an emergency; improve on-the-spot controlling abilities; carry out after-the-fact environmental investigations, trace healthful impacts and conduct treatment evaluations.

4.4 Set up state environment and health information share and service system.
Information is a fundamental factor for work regarding environment and health. Completely playing the role of information to offer support for decision making, management and research is guaranteed by sound information sharing and administration mechanisms.

Set up information share service systems: utilize the Internet and governmental network resources, and the state monitoring database for environment and health; rely on the e-government platform; consult the standards of the World Health Organization and the United Nations Environment Program. Learn from domestic and overseas advanced experience to set up a state environment and health index system, reflecting the circumstances, trends and requirements of the country’s environment and people’s health.

Set up an environment and health monitor database: respectively set up state and local monitor database for environmental pollution and a database for impact on health; set up a statistics management and operation mechanism; standardize the environment and health statistics codes and follow relevant international practices; make clear the source of statistics and guarantee their quality and strengthen their audit.

Improve information sharing and reporting systems: guarantee all-round and immediate provisions of relevant statistics and guarantee that they are available within certain limits; clarify the authority for
releasing certain categories of information from related departments and guarantee the information's authoritativeness, timelessness and accurateness.

4.5 Improve technological support construction for environment and health

According to country’s current circumstances, carry out research in key areas, strengthen technological innovations and resulting transformations in order to provide effective technological support for work concerning environment and health. Investigate the current circumstances regarding environment and health: carry out a nationwide investigation on health damage caused by environmental problems to get to know the damage's variety, degree and distribution, thus providing scientific grounds for an environment and health action plan.

---National pollution source investigation: carry out investigations on pollution sources, pollutants and degrees of pollution in severely-polluted areas; combine the investigation results on health impacts from environmental pollution to set national and local lists of pollutants which then are given a priority to be controlled, providing references for the control and monitoring of key pollutants.

---Investigate the health impact caused by environmental pollution: investigate the content of major environmental pollutants in human bodies and carry out investigations in epidemiology of diseases caused by environmental pollution to provide technological grounds for drawing standards when evaluating health damage caused by pollution, carrying out related preventive research and monitoring and improving related laws and regulations.

Efforts should be made to conduct research on how to assess environment and health safety and how to conduct research on corresponding reaction plans. In view of national and international progress in environment and health work, the following fundamental and applied research should be started promptly.

— Research on the impact of climate change on human health: We should conduct the research on the impact of climate change on health state for rural and urban residents, especially the impact of extreme climate conditions and unexpected climate accidents, such as high temperatures, storms, floods, high winds, sandstorms, drought and mist, on the occurrence of diseases caused by climate change. We should also establish an early warning system, draw up emergency reaction plans and develop technologies to deal with climate change and ensuing health problems. We should keep assessing the early warning systems and all the other intervention measures.

— Fundamental research on environment and health, and research on how to use traditional Chinese medicine to prevent public health from being further affected by environmental pollution: Efforts should be made to strengthen fundamental research in environment and health fields; develop criteria for early signs of diseases caused by heavy metals, persistent organic pollutants and other major pollutants; work out how these major pollutants harm human health; conduct epidemic disease investigations and animal experiments so as to record early health damages caused by particular pollutants; and, based on the results of the investigations and experiments, identify pollutants to be controlled in the first place. Efforts should also be made to learn from traditional Chinese medical theory on health maintenance, rehabilitation and dialectic treatment; exploit traditional Chinese medicine’s advantages in simple diagnosis, easy therapy, great curative effect, and cheap treatment cost; conduct research on traditional Chinese medicine's curative effects on diseases and sub-healthy. states caused by pollution; and ascertain therapy methods in accordance with research results. Traditional Chinese medical theory on health maintenance should be spread to the public, thus building up people’s resistance to pollution, and to cure and prevent diseases caused by pollution.

— Research on the methods to assess environmental pollution's damage to human health: This includes research on methods to assess physical endurance to major chemical pollutions and electromagnetic radiation. It also includes the research on methods to assess the special impact of such pollutions on human health. Efforts should be made to specify physical endurance to major pollutions and to identify early physical reactions to such pollutions, thus to find out the relation
between physical endurance and disease occurrence in a polluted environment. Efforts should also be made to work out methods to identify pollution’s early impact on human health, and to solidify the theoretical foundation for further developing research on environment protection and health maintenance.

— Research on how to assess the financial burden aroused by treating diseases caused by environmental pollution, and analysis of the capital requirement of launching environmental protection and health maintenance drive: It includes the research on how to use various indexes, such as patient’s willingness to pay, disease treatment costs and human capital, to assess the financial costs incurred directly and indirectly by curing health damages caused by pollution. It also includes an analysis of the financial burden aroused by treating diseases caused by pollution, and the accurate calculation of the financial cost incurred by curing major diseases caused by pollution. We should conduct a preliminary analysis on the capital requirement of launching environment protection and health maintenance drive, thus achieving a diversified capital investment. We should also work out methods to assess and calculate the financial costs incurred by curing health damages caused by pollution, and to incorporate the assessment into green GDP accounting system.

Measures should be taken to promote technological development and reinforce construction of professional work teams. In view of the functions of the network to monitor environment and health conditions, the localities to be monitored, and the investigations and researches to be conducted, we should further improve laboratory facilities, better on-site monitoring methods, enhance abilities to monitor pollutants under key control, enhance abilities to monitor major indexes of health states, ensure smooth development of major investigations and researches; adjust and replenish professional work teams, stimulate development of relevant sciences and technologies, improve higher education, promote personnel training, prepare more qualified personnel and advanced technologies for environment and health works, and comprehensively enhance abilities to provide technological supports to environmental and health work.

4.6 Strengthening publicity and the exchange of environment and health knowledge

We should make every attempt to utilize public publicity, promote wider exchanges, and raise public awareness of our environment and health work. We should also work hard to seek support from all social circles and ensure the effective implementation of environment and health policies.

Strengthening public publicity and education: Taking advantage of television, radio, newspaper, network and other medias, we should widely publicize laws and regulations on environment and health work; make the public understand the current situation and challenges of our environment and health work; raise public awareness toward environmental protection and health maintenance; urge social organizations, non-government organizations, scientific research institutions, academic institutions, enterprises and mass medias to fulfill their responsibilities of environment protection and health maintenance on a voluntary basis, and urge them to enthusiastically contribute to our environment and health work. We should make every effort to provide public publicity and education of environment and health knowledge, raise public awareness of environmental protection and health maintenance, cultivate good habits in individuals and the whole society, and foster a social environment favorable to environmental protection and health maintenance drive.

Actively promoting national and international exchange: We should make full play of national environment and health forums, identify major scopes for national environment and health work, study necessary measures and actions, develop solutions to current problems, foster cooperation between different departments, and boost the scientific development of environment and health work. We should conduct wide academic exchanges and discussions about the environment and health technologies, promptly introduce foreign academic and technological achievements, offer training to academic leaders and chief technicians, foster technological innovations, and offer strong technological supports to environment and health work. We should actively participate in international and regional cooperative programs in environment and health fields, closely follow international progress, adopt the advanced practices of other countries, promote various cooperative programs, absorb new technologies and new working methods, and constantly improve our environment and health work.
5. Safeguard system
As a systematic program, environment and health work requires wide participation among various departments, enthusiastic support from different academic fields and good coordination among all social circles. To ensure the smooth progress of the environmental protection and health maintenance drive, we should adopt effective laws, make useful policies and ensure a strict enforcement of the laws and policies.

5.1 Putting environment and health work high on government work agenda
Addressing environment and health work is the basic requirement for sustainable development. It is of great importance in building a well-off society and realizing the fundamental interests of the overwhelming majority of Chinese people. All localities and departments should deepen their understanding of this field, strengthen their management, incorporate environment and health work into major work agendas, ensure that this work is always the priority in the economic and social development plans, strengthen their enforcement of environment and health laws, improve supervision and management teams, and ensure their fulfillment of administrative responsibilities. Governments at all levels should give strong supports to environment and health work, open more channels to introduce investment, and foster a situation where governments at all levels, social organizations, enterprises, individuals and all other social circles work together to promote rapid progress of environment and health work. All appropriate departments should reinforce their organization of environment and health work, carefully carry out their tasks, make their works known to the public, guarantee the strict appraisal of the fulfillment of various job responsibilities, receive supervision from all social circles, and ensure a smooth progress of environment and health work.

5.2 Setting up national environment and health organizations
Initiated by the Ministry of Health and the State Environment Protection Administration, a national environment and health work leading group should be set up among staff members also coming from the National Development and Reform Commission, the Ministry of Education, the Ministry of Science and Technology, the Ministry of Finance, the Ministry of Land Resources, the Ministry of Construction, the Ministry of Communications, the Ministry of Water Resources, the Ministry of Agriculture, the Ministry of Commerce, the State Administration of Radio, Film and Television, the National Bureau of Statistics, the State Administration of Work Safety, the Legislative Office of the State Council, the China Meteorological Administration and the State Administration of Traditional Chinese Medicine. This group will be responsible for formulating administrative policies on environment and health work, and guiding a scientific development of the environment protection and health maintenance drive. A secretarial institution to serve the leading group should be set up with staff members from the Ministry of Health and the State Environment Protection Administration. It will be responsible for conducting and coordinating relevant works designated by the leading group. A national environment and health consultancy committee should also be set up to provide professional suggestions and technological support to our environment and health work.

5.3 Establishing a coordinated system for environment and health work
Efforts should be made to establish a regular meeting system for the national environment and health work leading group, to establish a sound operation system for the secretarial institution to serve the leading group, and to establish a coordinated work system for various departments and localities, thus guaranteeing the effective implementation of our environment and health work. We should establish a coordinated system for environment and health work, clarify work divisions based on the strengths of each department, draw up scientific work plans, tap full potentials of the departments, and make full play of various resources.

As the initiator of the environmental protection and health maintenance drive, the Ministry of Health and the State Environment Protection Administration are both responsible for organizing and coordinating our environment and health work, formulating regulations and criteria in this field, supervising environment and public health condition, conducting information management, appraising work risks, and preparing for emergency reactions to major pollution accidents. The National Development and Reform Commission is responsible for coordinating and organizing the formulation of administrative policies favorable for the coordinated development of environment and health. The Ministry of Education is responsible for incorporating environment and health work
into school curriculums and special education programs, and promoting environment and health education campaigns in schools. The Ministry of Science and Technology is responsible for incorporating major environment and health technologies into national technological development programs. The Ministry of Finance is responsible for preparing capital necessary for launching environment and health work, and is responsible for strengthening capital management and supervision. The Ministry of Land Resources is responsible for conducting geological environment protection, curbing groundwater pollution, and supervising excessive exploitation. The Ministry of Construction is responsible for formulating urban and rural development plans favorable for environment and health work, ensuring the water quality supplied for urban areas, monitoring urban environment sanitation, reinforcing guidance and supervision of urban wastewater treatment, and formulating criteria for relevant projects. The Ministry of Communications is responsible for formulating transport development programs and policies to boost environmental protection and health maintenance drive. The Ministry of Water Resources is responsible for formulating plans to protect water resources, defining demarcation of different water zones, controlling pollutant discharge in drinking water zones, conducting unified management and supervision of water resources (including precipitation, surface water and ground water), examining water zones’ capacity to contain pollution, and making suggestions for curbing pollutant discharge. The Ministry of Agriculture is responsible for monitoring agricultural environment and agricultural bio-safety. The Ministry of Commerce is responsible for formulating trade plans and policies favorable for environment and health work. The State Administration of Radio, Film and Television is responsible for developing radio and television programs to promote environment protection and health maintenance. The National Bureau of Statistics is responsible for guiding construction of database and information-sharing platform for environment and health work. The State Administration of Work Safety is responsible for formulating and implementing plans to protect the environment and health condition in all work sites. The Legislative Office of the State Council will work with the others to do research, formulation and modification of laws and regulations on environment and health work. The China Meteorological Administration is responsible for weather monitoring, weather forecasts, organizing coordinated reactions to major disastrous weathers, conducting coordinative monitoring of air quality, doing meteorological researches, and providing meteorological information. The State Administration of Traditional Chinese Medicine is responsible for undertaking research on how to apply traditional Chinese medicine toward environment and health work.

(China.org.cn January 5, 2008)

Green Growth for Europe, by MIRANDA A. SCHREURS\textsuperscript{17}

Rio + 20 provides Europe with an opportunity to reflect upon what has been achieved in the 20 years since the United Nations Conference on Environment and Development (UNCED) that was held in Rio de Janeiro in 1992 and the 40 years since the first United Nations Conference on the Human Environment, which was held in Stockholm, Sweden in 1972. It also puts a responsibility before Europe to think about what needs to be achieved in the next 20 and the next 40 years (through 2052).

At the time of the Stockholm Conference, Europe was still struggling to deal with basic pollution problems—carbon monoxide and nitrogen oxide emissions from automobiles, lead pollution from the burning of gasoline, sulfur dioxide emissions from coal-fired power plants, soil and water contamination from the heavy use of pesticides and phosphorous-based soaps. Most countries were just beginning to introduce environmental administrations within their national governments and little attention had been given to European environmental needs. By the time of the UNCED, this had

\textsuperscript{17} text provided by Schreurs for this conference
changed substantially. Alongside national environmental administrations, the European Union had developed an extensive environmental regulatory structure. In the 1980s and 1990s, Europe introduced a large number of environmental directives (addressing, for example, air and water quality, chemical controls, recycling, nature conservation), and joined a wide range of international agreements (Long Range Transboundary Air Pollution Agreement, Montreal Protocol on Substances that Deplete the Ozone Layer, the United Nations Framework Convention on Climate Change and the Kyoto Protocol, and the Biodiversity Protection, to name just a few). No doubt here have been many achievements and in relation to many basic environmental indicators, environmental conditions have improved substantially since the Stockholm Conference. Yet, at the same time, many problems remain and new problems have surfaced. By the time of the UNCED, the global community was starting to recognize the seriousness of such threats as climate change, desertification, biodiversity loss, and deforestation. Since then, there has also been increasing concern related to fisheries decline, marine pollution, plastic pollution, fresh water scarcity, and persistent organic and inorganic pollutants. This makes it difficult to celebrate Rio+20 or Stockholm +40 as success stories. The lessons that have been learned and put into practice to date have not changed the fundamental structures that have put the planet in peril.

Looking forward for the next twenty to forty years, how can Europe best respond to this long list of serious and in many ways frightening challenges? Clearly, there is no simple answer, but there are many steps that can be taken to reduce the enormous pressures that our modern economies have put on the planet. Europe must develop an economic and social system that has environmental protection, equity, and inter-generational fairness at its center. The simplest steps that can be taken are related to the efficiency with which we use energy and raw materials. Despite large-scale improvements in energy efficiency in the past decades, there is still a tremendous amount of energy wasted throughout Europe as a result of poorly insulated buildings, inefficient transportation structures, wasteful production processes, and consumer behaviour. Europe not only needs to make sure that the existing energy efficiency goals for 2020 are successfully implemented but that further far-reaching mid- and long-term goals and measures are introduced.

Similarly, while many steps have been taken to reduce and recycle waste in the past decades—starting with glass, metals, and paper products and expanding over time to include construction materials, plastics, batteries, electronic goods, and automobiles, these efforts need to go even farther. Near zero waste should be the goal.

Beyond efficiency improvements related to energy and resource inputs, more attention needs to be put into considering which resources are being used for what purposes in the first place and what kind of negative externalities are associated with their use. In the case of the energy structure underpinning the economies of Europe, this is simple to illustrate. Europe remains heavily dependent on fossil fuels that have many negative externalities associated with their use—respiratory ailments tied to air pollution, sulfur dioxide emissions tied to acid rain, and carbon dioxide emissions that act as a greenhouse gas. Moreover, much of the energy is imported from regions that have undemocratic political structures and where income inequalities are large. Europe can and should lead the global community in transitioning to a low-carbon energy future, one that relies predominantly on renewable energies. This will require that Europe invest heavily in R&D in new technologies (e.g. electric mobility) as well as in the energy infrastructure that will be necessary to support a major build-up of renewable energy, and especially a new grid structure. Currently, Europe does not have the storage capacity nor the grid infrastructure necessary to make it possible to effectively and efficiently produce and distribute energy across the continent. The amount of new grid infrastructure and storage capacity needed could be considerably reduced, moreover, with serious planning. It makes sense to consider the different renewable energy (wind, solar, hydro, geothermal, biomass) capacities of different countries and regions and how grid interconnections could maximize
complementary energy sources. The same logic applies in relation to the resources that are used as inputs into the production of goods. Insufficient attention has been paid to the environmental value and long-term availability of the resources that are used to manufacture products and whether scarce or environmentally sensitive inputs could be reduced or replaced. Greener production in the comprehensive sense of the term could significantly reduce the impacts European consumption has on the environment.

Beyond energy and resource efficiency improvements, structural changes will be needed as well. Transportation is a good example of this. Transport accounts for approximately one-third of European energy consumption and emissions. Despite technological improvements and tightened emission controls, the total volume of carbon dioxide emissions from the transport sector have increased since 1990 and continue to rise. This suggests the need not just for efficiency improvements, but for new ways of thinking about transportation that are less destructive of nature. Today, an economy’s strength is still measured by its gross domestic product (GDP). This is a measure of goods and services produced. It fails, however, to look at the long term sustainability of production and services. New measures of social well-being—there are many in development—should be promoted. Green growth is premised on the concept of sustainability. It therefore makes sense to move from our fixation with GDP as a measure and to adopt measures of progress that incorporate sustainability indicators at their core.

The greening of the European economy requires beyond this more attention to where government subsidies go and capital investments flow. Currently, governments subsidize many structures and industries that are not sustainable. Inventories should be made of the extent to which governmental subsidies (direct and indirect) are supporting polluting or environmentally destructive industries. Only a small handful of banks have programs in place encouraging green investment. Incentive structures should be established to encourage capital investments to flow towards projects that promote sustainability rather than simply profit maximization. By leading the way internationally with a shift towards a greener economy, Europe can set an example for the rest of the world. Europe has taken on various short-term targets for the reduction of greenhouse gas emissions, controlling and slowing the loss of biodiversity, and enhancing green infrastructure. It should now consider further goals that go beyond existing targets and measures. To make sure that the European green transition goes far enough and rapidly enough, it will be crucial to have short-, medium-, and long-term goals that are regularly monitored, evaluated, and reassessed. The transition will not always be easy or without winners and losers. To date, on the whole, Europe appears to have benefited enormously from investing in green technologies and industries. Europe has won many jobs in renewable energies and other clean tech areas. These are fields that can be expected to grow in the years to come.

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*Environment and Health in China: Introduction. JENNIFER HOLDAWAY, 27th January 2010*18 (Excerpt)

This paper is an introduction to the special issue. It provides an overview of the major environment-related health risks China faces, and a review of some of the responses currently being made by the government and societal actors. The paper concludes with a discussion of the contributions that the social sciences might make to our understanding of these issues.

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18 Jennifer Holdaway (2010): Environment and Health in China: an introduction to an emerging research field, Journal of Contemporary China, 19:63, 1-22 To link to this article: http://dx.doi.org/10.1080/10670560903335728
The issues of environment and health have generally been addressed separately in research and policy, in domestic and international assistance programs, and in the work of NGOs; but there are important reasons for considering the connections between them, especially in the context of efforts to reduce poverty and promote sustainable and equitable development. Not only is health a good in itself, but without it, people cannot enjoy the opportunities for education, employment and personal fulfillment that economic growth may bring. Meanwhile, ill-health undermines human capital, lowers productivity, and drains private and public resources. Unlike purely financial indicators of development, the state of public health also reflects a society’s capacity to provide social goods such as safe living and working conditions, and healthcare services. It thus captures key aspects of institutional capacity and policy effectiveness.

In considering how to improve public health, there are good reasons to focus on the environmental drivers of disease. The World Health Organization estimates that, globally, at least a quarter of the burden of disease can be attributed to environmental factors, and gives a preliminary estimate of 22% for China. Because income lost to ill-health and healthcare expenditures are major contributors to poverty, and the burden of environment-related disease falls disproportionately upon the poor, addressing environment-related sources of disease not only improves health outcomes but also contributes to poverty reduction and to reducing inequality and social conflict. At the same time, human health presents an immediate and compelling reason to respond to environmental degradation; in many countries, it has been concern about public health that has provided the initial impetus for strengthening environmental protection and for raising public awareness.

In China, the transition from a planned to a predominantly market-driven economy has produced impressive rates of economic growth in the aggregate and lifted several hundred million people out of poverty. But environmental health problems associated with poverty persist and are in some cases worsening as the result of weakened preventive health services, climate change and other factors. At the same time, China faces new public health challenges stemming from the inadequate regulation of hazardous industries and rapid urbanization. These range from high rates of work-related injuries among those directly employed in dangerous occupations, to more generalized health risks resulting from exposure to the toxic by-products of industry through air, water, and food.

Solutions to these problems must clearly be grounded in an understanding of the complex economic, political and sociocultural contexts in which they are embedded, but to date very little social science research has focused on the connection between environment and health. This special issue begins to explore the ways in which environmental health risks are being addressed in China, and the kinds of social science research that might inform responses to these problems. The articles included here were first presented at the Social Science Research Council’s International Workshop on Environment and Health held in Hong Kong in April 2008. This introduction provides a context for the papers by providing a brief overview of the major environmental health risks that China faces and of current responses by various actors.

If you are interested to read more, please link: http://dx.doi.org/10.1080/1067056090335728

“My Children Have Been Poisoned: A Public Health Crisis in Four Chinese Provinces”, Summary, June 2011

My children have been poisoned and there is nothing I can do to help them.
—Sun, Henan province, May 2010

Hundreds of thousands of children in China are suffering permanent mental and physical disabilities as a result of lead poisoning. Many of them live in poor, polluted villages next to, and surrounded by, lead smelters and battery factories. Often, their parents work in these factories, bringing more lead into their homes on their clothes, boots, and hands. China today has the world’s largest population and second largest economy. The country’s gross domestic product has increased ten-fold in the last 15 years. That rise in gross domestic product (GDP) growth has helped lift 200 million people out of absolute poverty since 1978. But this rapid economic development has also exacted a steep
environmental price; widespread industrial pollution has contaminated water, soil, and air and put the health of millions of people—likely even hundreds of millions—at risk. Currently, 20 of the world’s 30 most polluted cities are in China.

Pollution from lead is highly toxic and can interrupt the body’s neurological, biological, and cognitive functions. Children are particularly susceptible, and high levels of lead exposure can cause reduced IQ and attention span, reading and learning disabilities, behavioural problems, hearing loss, and disruption in the development of visual and motor functioning. High levels of lead can cause anaemia, brain, liver, kidney, nerve, and stomach damage, as well as comas, convulsions, and even death.

Worldwide, lead poisoning kills 230,000 people each year.

Today, lead poisoning is among the most common pediatric health problems in China. While the lack of comprehensive data makes it difficult to determine the extent of the epidemic, a number of sources—including academic and media reports—indicate it is a public health emergency affecting whole communities. The Chinese government’s ill regard for human rights means it has been able to pursue a model of economic development that is not accountable to its citizens, including poor people who are often particularly susceptible to the most damaging health effects of environmental hazards. But industrial pollution, and the lack of accountability that accompanies it, extends far beyond health issues: it impacts the full realization of human rights in China, including people’s right to life, health, an adequate standard of living, as well as to information, participation, and access to justice.

Underpinning China’s lead poisoning epidemic is a tension between the government’s goals for economic growth and its efforts to curb environmental degradation. The Chinese government has developed numerous laws, regulations, and action plans designed to cut emissions, encourage more environmentally-friendly industries and decrease pollution. Yet these policies are in competition with the Chinese government’s goals for economic development; the first guiding principle of the country’s Twelfth Five-year Plan for Environmental Protection (2011-2015) is “optimizing economic development.” At the local level, such policy contradictions may encourage factories to cut corners on emissions standards. Corruption and conflict of interest can also undermine environmental protection efforts. Local officials, who often have a legal or financial role in local factories, may be resistant to implementing environmentally friendly technology. Existing environmental laws often lack effective enforcement mechanisms. This report—based on interviews in Henan, Hunan, Shaanxi, and Yunnan provinces, and research in Beijing and Shanghai between late 2009 and early 2010—finds that local governments have imposed arbitrary limits on access to blood lead testing; refused appropriate treatment to children and adults with critically high lead levels; withheld and failed to explain test results showing unaccountable improvements in lead levels; and denied the scope and severity of lead poisoning.

Parents said that government officials told them that only children living within one kilometer of a factory smokestack were at risk and that milk was adequate treatment for lead poisoning. Parents reported that local police threatened individuals seeking treatment and information, and those trying to protest against polluting factories have been arrested. Journalists told us they have been intimidated and threatened when trying to report on lead poisoning. Meanwhile local Environmental Protection Bureaus (EPBs), staffed and supervised by local government officials, have done little to fulfill their obligation to monitor emissions, disseminate information to the public about polluting factories, and enforce environmental regulations that stipulate a factory or polluting entity must be improved or removed when it endangers public health.

[...]

Most families said they were not financially able to move to an unpolluted area. Villagers in Shaanxi said the government had announced plans to move residents from several villages to other areas but did not know when or if this will happen, where they are supposed to go, and/or how they would earn a living in a new area.

In villages where lead exposure is highest, a generation of cognitively and physically disabled children will need significant and ongoing support. Most parents Human Rights Watch spoke with were generally unaware of these long-term consequences of lead exposure. However, some said their children were already struggling: failing physically or underperforming in school. Yet neither the schools nor the local government had offered special services or opportunities for children with lead poisoning. These needs will become even more acute as the years pass and lead poisoning continues to be neglected.

Occupational Health
In addition to researching the effects of lead on the communities surrounding polluting factories, Human Rights Watch interviewed family members of a female worker in a lead processing plant in Yunnan who died of acute lead poisoning. Human Rights Watch also interviewed individuals concerned about the absence of adequate worker protections. According to workers in Yunnan, Henan, and Shaanxi, blood lead tests and safety measures are not routine practice.

The Chinese people have already suffered grave consequences as a result of inappropriate and inadequate responses to public health crises. During the 1990s and early 2000s, local officials in Henan and other provinces ran programs for impoverished farmers to sell their blood plasma and platelets. The program was unsanitary and unsafe, but selling blood plasma was profitable for officials, and they continued to deny evidence of an emerging HIV epidemic. Tens of thousands were infected, nearly a majority of adults in some villages, and the public health consequences continue. Similarly, in 2003, SARS was first denied and then downplayed by government health officials who censored media and lied to international health agencies, resulting in ongoing transmission and unnecessary suffering and deaths.

If you are interested to read more, please link: www.hrw.org

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- Sustainable Development, Innovation and Climate Protection: A German Perspective (2009) [http://www.umweltrat.de/SharedDocs/Bilder/EN/Cover/2008_Environmental_Report_Vol_1_Cover.jpg;jsessionid=0094F72D57F07C48F5A9882E42BDC077.1_cid137?__blob=poster&v=1]


- Environmental health in China: progress towards clean air and safe water Junfeng Zhang, Denise L Mauzerall, Tong Zhu, Song Liang, Majid Ezzati, Justin V Remais [http://wenku.baidu.com/view/a26cccc2d5bbfd0a795673ae.html]
