

Air pollution takes years off lives in northern China

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Tourists wearing masks visit the Tiananmen Square on a hazy day in Beijing Jan. 13, 2013. Air pollution readings in China's notoriously polluted capital were at dangerously high levels, with hazy skies blocking visibility and authorities urging people to stay indoors. Liao Pan/Color China Photo/AP Images

BEIJING —People die about 5.5 years earlier in northern China than in the south, and heavy air pollution is almost entirely to blame, a new study has determined.

The research, which studied 20 years of data, was published on Monday by four economists in China, the U.S. and Israel. The paper examined air-quality readings collected in 90 Chinese cities between 1981 and 2000. This information was then compared with mortality data collected at 145 locations across the country from 1991 to 2000.

Other studies have established strong links between air pollution and ill health. And many experts have tried to work out how deaths in China are related to poor air quality.

This new research, however, specifically shows that pollution does lower life expectancy. The data may provide a jolt to both lawmakers and the public as debate intensifies over how much China has sacrificed to achieve rapid economic growth.

Warm And Polluted, Or Cold And Healthy?

In China, the researchers found an ideal place to examine the effects of air pollution. The Huai River is a major waterway that flows through the center of the country.

For undetermined reasons, previous Chinese governments gave people north of the river free coal to burn in winter. Yet those who lived south of the Huai received no coal and were denied central heating.

This decision effectively created two experimental groups on either side of the river that could be compared with each other. The effects of burning coal on air quality - and on health - could be isolated and examined.

Michael Greenstone works at the Massachusetts Institute of Technology and is one of the authors of the new study. He said that this situation was an "unintended consequence" of the government's policy. "We will never, thank goodness, have a trial where we expose some people to more pollution and other people to less pollution over the course of their lifetimes," Greenstone said.

Dust, Smoke And Dirt

Air pollution is calculated by total suspended particulates (TSPs). TSPs are specks of dust, smoke or dirt carried in the atmosphere. Greenstone and his co-authors found that north of the Huai River, the TSPs measured over 500 micrograms per cubic meter. This was 55 percent higher than levels south of the river.

Life expectancy in the north was 5.5 years lower - almost entirely because of higher numbers of the cardiorespiratory deaths that are often caused by air pollution.

The researchers estimated that 500 million residents of northern China in the 1990s collectively lost 2.5 billion years from their lives.

Another co-author, Yuyu Chen of Peking University in Beijing, said: "It's a huge loss. Air pollution in China is really damaging people's health much more seriously than the findings in previous literature." Chen added: "After this study, there should be no argument over whether we should take the air pollution issue seriously. We need a comprehensive clean air act in China."

The study was reviewed by other experts, but these reviewers did not immediately respond to requests for comment.

Exchanging Health For Economic Growth

Dirty air remains a grave concern in China. In January, a combination of windless weather, rising temperatures and emissions from coal heating brought on a prolonged spell of some of Beijing's worst air pollution on record. The phenomenon was nicknamed the "Airpocalypse."

The pollution closed highways, forced the cancellations of airline flights and outdoor activities, and sent countless people to hospitals. Regions up to 1,100 miles away from Beijing were affected, almost the distance from New York City to New Orleans.

Another spell of terrible air besieged the Chinese capital in late June. These episodes have raised debate about whether China is sacrificing too much of its citizens' health for economic growth. There have been numerous protests over this issue in recent years.

The Chinese government is also well aware that concerns over air pollution could become a political crisis. The New China News Agency said last month that "environmental crises can stir controversy" and concern among the people.

Drastic Measures

During the Airpocalypse, China's government experimented with various emergency measures. In January, it limited the use of official cars and ordered factories and construction sites to close. In June, the government announced a package of 10 anti-pollution measures. This included forcing heavy industries such as steel manufacturing to replace outdated technologies and publish data on pollutants.

Heavy polluters are being asked to reduce their emissions by 30 percent by the end of 2017. But these industries must cut down their pollution relative to their economic production. Critics of this policy say that if economic growth continues to grow quickly, total decreases in pollution will be small.

Chen noted that Chinese citizens would be willing to give up some financial development in order to prolong their lives. The researcher concluded that the public would forgo up to 2 percentage points of economic growth to reduce TSPs by 100 micrograms per cubic meter.

Numerous Chinese cities have average TSP readings of 200 to 300 micrograms. In the U.S., the average is 20 to 30 micrograms. Long-term exposure to each additional 100 micrograms cuts life expectancy by three years, Chen and his team concluded.