



LINFEN, CHINA

Potentially Affected People: 3,000,000

Type of Pollutants: Fly-ash, carbon monoxide, nitrogen oxides, PM-2.5, PM-10, sulfur dioxide, volatile organic compounds, arsenic, lead.

Source of Pollution: Automobile and industrial emissions

The Problem:

Shanxi Province is at the heart of China's enormous and expanding coal industry, providing about two thirds of the nation's energy. Within this highly polluted region, Linfen has been identified as one of its most polluted cities with residents claiming that they literally choke on coal dust in the evenings. In terms of air quality, the World Bank has stated that 16 out of 20 of the world's worst polluted cities are in China while the State Environmental Protection Administration (SEPA) has branded Linfen as having the worst air quality in the country. Levels of SO₂ and other particulates are many times higher than limits set by the World Health Organization.



Rapid development and unequivocal faith in industry has led to the development of hundreds of unregulated coal mines, steel factories and refineries which have not only polluted indiscriminately but have also diverted agricultural water sources. Water is so tightly rationed that even the provincial capital receives water for only a few hours each day.

Health Impacts:

The high levels of pollution are taking a serious toll on the health of Linfen's inhabitants. Local clinics are seeing growing cases of bronchitis, pneumonia, and lung cancer. The children of Shanxi Province also have high rates of lead poisoning. A growing number of local deaths in recent years have been linked to these overwhelming pollution levels.

Arsenicosis, a disease caused by drinking elevated concentrations of arsenic found in water is at epidemic levels in the area. Chronic exposure to this toxic chemical results in skin lesions, peripheral vascular disease, hypertension, blackfoot disease, and high cancer incidence rates. A study of Shanxi's well water published in *Toxicology and Applied Pharmacology* found the rate of unsafe well water in the province to be at an alarming 52%.

Status of Clean-Up Activity:

By the end of this year, the city of Linfen plans to shut down 160 of 196 of its iron foundries and 57 of 153 of its coal producing plants. Small, highly polluting plants will be replaced with larger, cleaner, more regulated facilities. Emissions will be cut further by shifting from coal to gas for central heating. Last year, Linfen's residents gained 15 more days of clean, breathable air as a

result of newly implemented initiatives. In addition to air quality improvement, the local government also hopes to prevent serious coal mine accidents, which at this point are the cause of more than 10 deaths annually.

Resources:

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About the Blacksmith Institute:

Founded in 1999, Blacksmith Institute's vision is a clean planet for our children. We develop and implement solutions for pollution-related problems in the developing world. We work cooperatively with partnerships of donors, governments, NGO's and others, and provide strategic, technical, and financial support to local champions as they strive to solve specific, pollution-related problems in their communities.