

CHINA

Air pollution



Need for international assistance	Not required	Low X	Moderate	Significant	Major
Expected impact	Very low	Low X	Moderate	Significant	Major

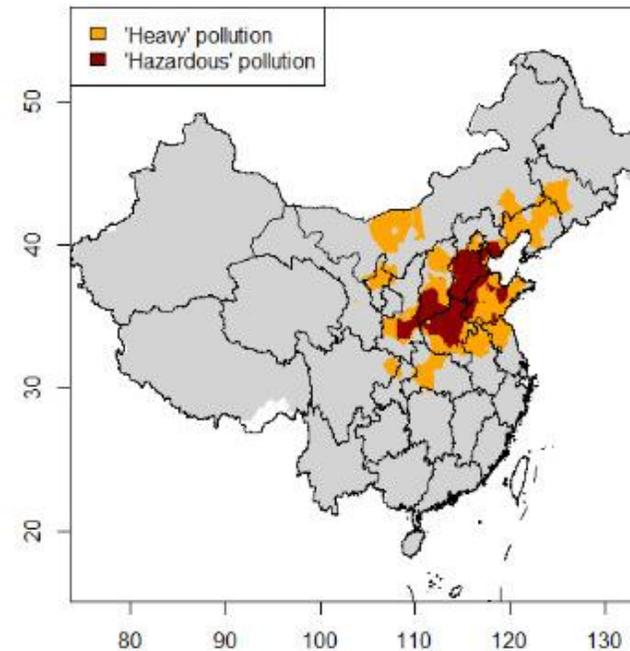
Crisis overview

On 16 December, China declared a five-day pollution red alert, as air pollution reached its highest level in 2016 (The Guardian 21/12/2016). More than 70 cities declared a red or orange alert (VOA news 21/12/2016), including 24 cities on red alert (FT 20/12/2016). 460 million people in northeast and central areas of China have been under hazardous pollution or heavy levels of “smog” since 16 December. The most severely affected provinces are Heibei, Shanxi, and Hainan provinces. As of 22 December, the smog started clearing in Heibei Province, and it is expected to clear from the rest of the northern and eastern regions by the end of the week due to strong winds. (AFP 22/12/2016, News24 22/12/2016).

Tens of thousands of people fled from the affected areas towards pollution-free areas such as the south and west of the country, or to neighbouring countries (Reuters 21/12/2016, The Guardian 21/12/2016). Since the red alert was declared, an increasing number of children have been admitted to hospital. Classes in schools were suspended, land and air transport was restricted, heavily polluting industries were told to halt operations, and roadworks were suspended (The Guardian 17/12/2016).

In some areas, such as Heibei Province, levels of PM2.5, an airborne particle linked to adverse health effects, were 100 times those of WHO guidelines (Reuters 19/12/2016). The Air Quality Index (AQI) in Beijing spiked to more than 400 - the average is 163 in China’s major cities (ABC News 22/12/2016).

Pollution levels, 19 December 2016



Source: Greenpeace 20/12/2016

Key findings

Anticipated scope and scale

150,000 people are expected to head abroad in December to escape the smog (The Guardian 21/12/2016). As of 22 December, the smog has started clearing due to strong winds, which should alleviate immediate impact (VOA news 21/12/2016). However, beyond the immediate health effects, long-term impacts are likely. With no significant measures taken to reduce pollution levels, red alerts are likely to become more regular and have a continuing and long-lasting impact on people’s health.

Priorities for humanitarian intervention

Health: Exceptionally high levels of air pollution have immediate consequences on breathing capacity, the respiratory and cardiovascular system, notably for vulnerable population such as children, the elderly, and pregnant women. Children have been admitted to hospital with breathing disorders.

Humanitarian constraints Reduced visibility from the smog restricts movement. Limitations have been imposed on private car use and air traffic has been reduced. This likely impacts access to affected populations and potential delivery of medical supplies.

Crisis impact

Tens of thousands of people fled from northeastern and central provinces of China towards the south and abroad, after a pollution red alert was raised that affected 460 million people in these regions. The substantial increase in pollution levels severely impacts health in the short and long-term.

Health: Hospitals saw additional admissions, notably children with respiratory difficulties (News 21/12/2016, CBC News 28/12/2016). Symptoms included irritation of eyes, nose and throat, coughing, chest tightness, and shortness of breath. The immediate consequences on health range from an aggravation of cardiovascular and respiratory illness, to added stress to heart and lungs, and damaged cells in the respiratory systems (Spare the air).

The smog contains tiny airborne particulates known as PM2.5, which are linked to numerous adverse health effects including lung cancer, asthma and heart diseases. In the long-term, polluted air can accelerate the aging of lungs, and lead to loss of lung capacity, decreased lung function, development of diseases such as asthma, bronchitis, emphysema and possible cancer, and shorten life span (Spare the air).

Shortages of masks and delays in their delivery due to transport restrictions were reported (Business Inside 22/12/2016).

Displacement: Tens of thousands of people have moved from the northeast and central areas of China towards the south and the west of the country. Most people seek refuge with relatives or go to hotels. Although internal displacement is relatively local, some went to Yunnan province in southwest China, and Fujian province in the southeast. Chongli area of Hebei province hosts a large number of displaced. 150,000 people are expected to head abroad in December to escape the smog, according to Ctrip, China's leading online travel agent (The Guardian 21/12/2016).

Education: Classes have been suspended in most towns in pollution-affected areas such as Hainan (Global Times 21/12/2016, The Guardian 21/12/2016). Nurseries and primary schools across Beijing were asked to stay shut until 21 December (The Guardian 17/12/2016).

Food: Food supplies delivery is likely to be affected by delays in air transport trade (Global Times 20/12/2016).

WASH: Rivers in the northeast affected by smog are likely to further poison water sources, and exacerbate the spread of waterborne diseases.

Protection: Several car accidents were reported beginning of November as the smog started to intensify. Since the red alert was raised, car use has been restricted (Hindustan times 7/11/2016).

Deteriorating air quality at the end of 2016 in parts of China has triggered protests by environmental groups, met with force and detentions by the government (Sixth tone 20/12/2016, FT 20/12/2016).

Vulnerable groups affected

People most susceptible to being affected by severe health problems resulting from air pollution are those with heart and lung diseases, pregnant women, elderly people, outdoor workers, children under age 14 whose lungs are still developing, and athletes who exercise outdoors (Spare the air).

Humanitarian constraints

Access is likely to be affected by reduced mobility, both land and air, due to reduced visibility from the smog. On land, older and "dirty" high-emission cars were banned from the roads (The Guardian 17/12/2016). Beijing airport cancelled at least 273 internal flights, as did other airports in China's northern industrial heartland (The Guardian 21/12/2016). Transport of medical supplies is likely to be affected by reduced traffic.

Aggravating factors

Longstanding air pollution

China has alarmingly high pollution levels all year round as a result of its rapid economic growth, which has relied extensively on industrial production. As of January 2016, Hainan is the most polluted province in China, closely followed by Beijing and Hebei (Greenpeace 1/20/2016). In China, air pollution causes between 300,000 and one million premature deaths a year, and 4,000 deaths every day (The Guardian 17/12/2016, The Guardian 14/08/2015). Children in cities like Beijing grow up with asthma and other respiratory problems. (News 21/12/2016). In 2015, reports claimed that asthma was the leading cause for child hospitalisation. China has the highest mortality rate due to asthma in the world, with asthma cases having increased by over 190% in the past decade (China Daily 07/01/2015).

There are reports that cancer rates have risen as a result of increased drinking water pollution in the past few years. In 2013, a China Geological Survey report claimed that the groundwater of 90% of Chinese cities is polluted, with two-thirds of those cities having "severely polluted" water. (The BRICS Post 19/12/2016).

Contextual information

Drivers

Construction projects negatively affect air and water pollution levels. A wave of construction projects was approved by Chinese authorities to stimulate the economy as a response to increasing steel prices in the past few years (The Guardian 21/12/2016). The Beijing-Tianjin-Hebei area is one of the most polluted areas in China, due to a proliferation of coal power plants and steel factories (South China Morning Post 20/04/2016). In addition, low winter temperatures and high population density in this region likely contribute to a high use of coal for heating, which severely affects the quality of the air (BBC 21/12/2016).

In December 2015, China issued its first ever pollution red alert in this region (BBC 8/12/2015). A second red alert followed a week later (BBC 18/12/2015). No large displacement was reported.

Key characteristics of host population

Demographic profile: 1,371,000,000 total population (World Bank 2015). Most affected provinces: Hainan: 94,360,000, Hebei: 73,840,000, Beijing: 21,520,000, Shanxi: 36,480,000, Tianjin: 15,170,000 (Statista 2014).

Health: Infant mortality: 31.7 per 1,000 live births; under-five mortality: 42.5 per 1,000 live births; maternal mortality: 216 per 1,000 live births (World Bank 2015).

Response capacity

Local and national response capacity

As pollution levels began increasing in November, the Chinese government planned measures to respond to the expected crisis and declared a red alert on 16 December. It required schools in affected areas to suspend classes; land, and air transport was restricted; heavy pollution industries were asked to halt or stop their operations; and roadworks were suspended. It enhanced common transport systems in Beijing to compensate for restrictions of movement on the roads (Global Times 21/12/2016).

Population coping mechanisms

People have been confined to their homes and wearing masks when going outdoors (New York Post 21/12/2016). Depending on the type, masks are relatively effective in filtering larger pollutant particles. However, the most effective ones are not always affordable, and not everyone wears them (The Wall Street Journal 28/02/2014).

Information gaps and needs

Exact numbers of displaced, and information on the immediate impact on health are limited.

Chinese media remains largely under government control. In October, some Chinese officials were accused of tampering with air quality data (The Hindu 26/12/2016).

Lessons learned

During the first two alerts in December 2015, measures taken by the Chinese government, such as reducing traffic and construction works, seemed to have a positive impact in tempering immediate pollution levels (Fortune 7/01/2016).