

India struggles to breathe

NEW DELHI

Seasonal smog chokes its cities, among the world's most polluted

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A toxic fog is creeping over New Delhi. Children trudge to school with plastic masks strapped to their faces. Sports events are canceled. Eyes burn. Throats itch. Chests heave.

It's the dreaded pollution season in India, when the amount of vehicle fumes, dust and smoke from agricultural fires spikes to levels so high that experts say that breathing this air could cause permanent brain damage in children.

Agra. Lucknow. Varanasi. New Delhi. India's most fabled cities are now among the world's most polluted. According to some recent rankings, India holds nine of the top 10 spots. In a sign of how many people — especially the elite — are distressed about this, shops in Delhi now sell “pollution guard” sunscreen and shampoo.

Toxic air has become a global menace that kills seven million people each year,



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Burning farm fields in the village of Bishanpur Channa. India is spending more than \$150 million to dissuade farmers from the traditional practice, a big cause of air pollution.

the United Nations Environment Program said in a bleak report released Tuesday. The bulk of these deaths are in the Asia-Pacific region, it said.

The report outlined 25 measures that could easily reduce air pollution (which also contributes to climate change). One tactic: stopping the burning of agricultural waste like the countless farm fires sweeping across northern India.

While data from across India shows that hazardous air pollution continues to rise, progress is being made. The central government, for the first time, is spending more than \$150 million to dissuade farmers from burning their fields.

Take the village of Bishanpur Channa, in the northern state of Punjab. Every November, for as long as anybody can remember, Bishanpur Channa's farmers

burned dried-up rice stalks to clear the land for the next season's wheat crop.

The sky became so sooty that the afternoons resembled evenings. The smoke drifted nearly 200 miles southeast, blanketing New Delhi. Dalbir Singh Kaleka, a farmer with a snow-white beard, said he and his neighbors put up with the discomfort because burning was cheap and easy.

“We all did it,” he said.

But this November could be different. Mr. Kaleka and his fellow farmers have been buffeted with public service messages, including a new hit song, “Don't Burn the Stubble Brother, Don't Burn.”

More persuasive, perhaps, is the \$156 million chunk that the Indian government has set aside for subsidizing alternatives to crop burning, such as renting big steel machines that push the excess rice stalks into the ground to act as a natural fertilizer.

This year, Mr. Kaleka said he and many of his neighbors were trying to burn as little as possible. “Look, I do not want to pollute,” he said. “My son tells me, ‘Even if you lose money, we should save India's image.’”

Indian government agencies are capable of taking bold steps. Beyond the subsidies in Punjab, the authorities shut down the last coal plant near New Delhi, and they have rerouted traffic and banned some dirty fuel sources.

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As winter approaches, India struggles to breathe

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But Indian environmentalists say that at the same time the government passes measures to cut pollution, it passes others that fling open the doors to dirty air.

This year, the central government proposed removing environmental clearances for construction projects up to 50,000 square meters, or about 540,000 square feet, more than doubling the previous threshold. Dust from such projects is a major polluter; the new policies would surely create more.

Like many developing countries, India is trying to bolster infrastructure, industry and economic growth, all of which take their toll on the environment. Unlike in China, where the Communist government has responded to toxic air by slapping criminal charges on polluters, India's political system is much more free and messy, a sprawling democracy that often shies away from using the stick.

Last week, when a group of civil servants and environmentalists took a tour of West Delhi, they found construction sites managed by government agencies among the most flagrant polluters. At a new subway station, the overseers had not even put up proper barriers or sprinkled water to keep the dust down. The subway system was ordered to pay a fine of 500,000 rupees, or around \$7,000.

In the coming weeks, air pollution here is expected to hit a choking peak. Winter will slow down the winds, meaning that still air and cooler temperatures will trap the soot and smoke that rises up from India's incredibly crowded, growing cities.



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Nikhil Gupta, left, an environmental engineer for the Indian government, teaching farmers in Bishanpur Channa about the effects that burning waste has on air quality.

For those in the pollution-mask business, these are profitable days.

Four years ago, when Jai Dhar Gupta, an Indian entrepreneur who went to the Wharton School, the business school of the University of Pennsylvania, started selling pollution masks, he was lucky to move 200 a day.

Now, he said, his company, Nirvana Being, sells thousands in a single day.

"We've seen online orders coming from villages, the northeast, Goa, places I don't even know," Mr. Gupta said. But it makes sense, he said, because "this is a pan-India problem."

The situation is especially bad in northern India, where the Himalayas form a towering barrier that keeps clouds of dirty air parked over some of the country's biggest urban areas. But data shows how bad the air is in just about every major Indian city.

In Chennai, on the southern coast, average annual concentrations of PM 2.5, insidiously small airborne particles that scientists estimate have killed millions, have more than quadrupled in the last three years to 105 micrograms per cubic meter from 24, according to data from the first 10 months of each year gathered

by the United States Consulate. Hundreds of miles north, in Kolkata, the number nearly doubled to 78 micrograms per cubic meter from 40 during the same period.

The latest figures for the two cities are eight to 10 times the level of hazardous particles that the World Health Organization considers acceptable.

The air in Mumbai, India's seaside commercial capital with some 20 million residents, is also getting worse. Average annual concentrations of PM 2.5 have shot up nearly 50 percent in the last three years.

Experts blame a mix of factors, including Mumbai's thickening traffic, noxious gases from landfill fires, construction dust and emissions from coal plants in the suburbs.

A few local groups are trying to put pressure on the government to get serious, but they say the authorities do not seem to understand.

"They're trying to build more vertical roads, coastal roads, increase car traffic and put less emphasis on public transport," said Ashok Datar, chairman of the Mumbai Environmental Social Network. "It's like we're investing in emission."

In Punjab, home to several million farmers, thousands of pounds of carbon dioxide have typically been released into the air every burning season.

But this year, there is reason for hope, said S. S. Matharu, a government engineer working for the Punjab Pollution Control Board.

In just two years, Mr. Matharu said, the number of fires dropped by nearly 70

percent after stiff fines, advances in farming technology and aggressive outreach in villages and on social media, including the catchy new song.

"The motherland has birds and other living creatures to feed," the song goes, "don't burn rice straw to choke them to death."

Bishanpur Channa — described by one farmer as the "most forward village in all of Punjab" — has become a model. Many farmers there said that instead of burning, they planned to use machines like the Happy Seeder, which mixes excess straw into the soil.

But in poorer villages people seemed less inclined to change their ways. About 20 miles down the road, a group of farmers who had gathered near a field offered a list of grievances.

A government program that subsidizes harvesting equipment is still too expensive, they said. Government agents promise new equipment and then disappear. Politicians seem less interested in the poorer farmers because their plots are so small.

Gurmeet Singh, a gangly young farmer, said that lowering pollution was a nice thought but that with no money to spare, "the whole village will burn."

As night fell, he walked out to his rice fields. His plot was littered with dry straw. He bent down and struck a match.

Soon enough, clouds of smoke lifted into the sky.

Kai Schultz, Jeffrey Gettleman and Hari Kumar reported from New Delhi, and Ayesha Venkataraman from Mumbai, India.