Researchers raise alarm about air pollution levels in Haiti

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"The worst readings are near heavy traffic areas and often where displaced people are living in camps," says Mary Davis. Credit: Ann Rappaport

(Phys.org) —Air pollution in the island nation of Haiti can reach levels considered hazardous by the U.S. Environmental Protection Agency, according to recent findings by Tufts researchers.

The researchers—associate professor Mary Davis and Ann Rappaport in

the Department of Urban and Environmental Policy and Planning—say that air pollution levels put people at higher risk for respiratory illnesses, including lung cancer and heart disease.

For their study, Davis and Rappaport monitored the levels of particulates produced by combustion in Haiti's two largest cities, Port-au-Prince and Cap-Haïtien, for a week in May 2013. "Concentrations of particulates around Port-au-Prince and Cap-Haïtien are higher than levels observed elsewhere in the developing world, with the exception of India and China," says Davis.

In the affluent Pétionville suburb of Port-au-Prince, they found air quality that would be considered a moderate health concern, according to EPA guidelines. But during morning rush hour in Port-au-Prince, Davis and Rappaport recorded particulate concentrations that consistently exceeded levels the EPA would deem hazardous. In Cap-Haïtien, the levels were even higher.

In contrast to China, where high levels of air pollution are associated with unregulated industrial sources, in Haiti the sources are generally residential and commercial. Diesel generators are an alternative or a backup for the unreliable electricity grid, trash burning is widely practiced, charcoal and other biomass are frequently used for cooking, and traffic is congested in population centers. These conditions may have been exacerbated by the earthquake that struck Port-au-Prince in 2010, and exposures may have increased. "The worst readings are near heavy traffic areas and often where displaced people are living in camps," says Davis.

The filter on the air-quality monitor they used would blacken in just 30 minutes in Port-au-Prince, Davis says. That compares to the 10 to 20 hours it took to blacken filters when she studied U.S. diesel trucking terminals as part of an earlier air pollution study.

The research, though limited in the data it gathered over a short period of time, is a real wake-up call, the researchers say. It gives strong indications that similar unhealthy air conditions likely exist in other developing nations with inadequate infrastructure, especially those where natural disasters have increased dependence on pollution-promoting sources of heat, energy and transportation.

Davis and Rappaport hope their study will spur further research in Haiti and other developing countries.

Provided by Tufts University