

# Reports identify, prioritize environmental health risks in fast-growing United Arab Emirates

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By global standards, health risks caused by environmental factors are low in the United Arab Emirates (UAE), new studies by University of North Carolina at Chapel Hill researchers show.

In an effort to keep those risks low, Emiratis are working with UNC public health researchers to find ways now to avoid problems in the future.

What's more, researchers and officials believe their approach could be used to address similar issues in other rapidly [developing nations](#) and regions.

The Middle Eastern nation is one of the fastest growing countries in the world, moving in the past 40 years from a largely nomadic, desert population to a modern country with busy cities, big business and an expanding population.

But [modernization](#) can also bring changes that may affect people's health. For instance, ambient air pollution can cause or exacerbate asthma and contamination of [drinking water](#) and seafood supplies can contribute to various illnesses, including cancer.

In 2008, officials established the [United Arab Emirates](#) Environmental Health Project, funded by the Environment Agency–Abu Dhabi and

headed by researchers in the UNC Gillings School of Global Public Health. The project is a multipart endeavor that includes quantitative risk assessment, risk ranking and what officials describe as the most ambitious environmental epidemiological study ever conducted in the country. The results will help leaders make informed decisions on future policy priorities and actions.

"The goal was to assess and prioritize strategies to reduce the pollution-related [health risks](#) being made inevitable by growth and development," said Jacqueline MacDonald Gibson, Ph.D., the project's principal investigator and UNC assistant professor of environmental sciences and engineering. "This is believed to be the first time a nation has commissioned a comprehensive model of the national burden of disease from environmental health risks. They are taking a long-term perspective in a world too often focused on short-term thinking."

The results of how MacDonald Gibson and her team from UNC, UAE University and The Rand Corporation, a global public policy research institution, identified and prioritized the risks were published online today (Feb. 22) in the journal *Environmental Health Perspectives*.

The research team prepared quantitative risk estimates and then worked with dozens of stakeholders, including leaders of businesses, government agencies, health-care facilities and universities. Fifty-six stakeholders submitted rankings of 14 risk factors in order of priority. They almost unanimously agreed that outdoor air pollution is the greatest risk. Most stakeholders also ranked indoor air pollution as the second most important risk and occupational exposures in industry as third.

There was disagreement on some issues. For example, risk from water pollution was ranked second most important by five stakeholders and least important by four. Those who ranked it least important stressed the nation's drinking water is highly treated with advanced desalination

systems and that many people drink bottled water.

Investigators also helped develop a national strategy and action plan, which identified 216 potential initiatives to mitigate health risks. They also developed key performance indicators to measure progress in each risk area. For example, an indicator for indoor air quality would be the percentage of public buildings that enforce indoor smoking bans.

MacDonald Gibson said officials with the World Health Organization's Centre for Environmental Health Activities in Amman, Jordan, which provided project oversight, have said the framework may be a model for similar endeavors in the Middle East and other regions around the world.

Zeinab S. Farah, Ph.D., an independent consultant based in Abu Dhabi and London, was a co-author of the study.

Two other studies from the project also appeared in the current issue of [Environmental Health Perspectives](#). One reported results from a study of the health effects of six air pollutants found in homes. Homes with measurable sulfur dioxide, nitrogen dioxide and hydrogen sulfide were twice as likely to report doctor-diagnosed asthma. Also, people living in homes where incense was burned daily (44 percent of households in the study) were twice as likely to report headaches, forgetfulness and difficulty concentrating as those in homes where incense was burned once a week or less. The third study explored cultural differences and the ways the international teams bridged those differences to forge strong, long-lasting relationships.

Provided by University of North Carolina at Chapel Hill

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