FINANCIAL TIMES

April 4, 2012 6:00 pm

Study finds air clean-up link to US hurricanes

By Pilita Clark, Environment Correspondent

Cleaning up air pollution from factories in North America and Europe could have helped to cause more disastrous hurricanes in the US in recent years, new research suggests.

In a study with important implications for the insurance industry, scientists from Britain's Met Office say they have established a link between pollution wafting across the ocean – and efforts to remove it – and events such as drought in the Sahel region of north Africa and hurricane activity in the US.

Their study focuses on the North Atlantic ocean, where surface temperatures rise and fall by up to one degree Fahrenheit over phases lasting up to several decades.

A warm period increases both hurricane activity in the North Atlantic and rainfall in parts of Africa and elsewhere, while a cold period has the opposite effect.

These temperature shifts, known as the Atlantic Multidecadal Oscillation (AMO), are believed to have been taking place for centuries, and are thought to be separate to trends in rising sea temperatures recorded in the 20th century, which scientists have linked to global warming.

Since the AMO switched to its current warm phase around 1995, severe hurricanes have become much more frequent, according to the National Oceanic and Atmospheric Administration in the US.

Until now, natural causes were thought to be behind such temperature fluctuations. But the Met Office study, published in the journal Nature, suggests that tiny airborne particles from industrial pollution, and to a lesser extent volcanic eruptions, are more likely to have been the culprits in the 20th century.

"Until now, no one has been able to demonstrate a physical link to what is causing

these observed Atlantic ocean fluctuations, so it was assumed they must be caused by natural variability," said Ben Booth, a Met Office climate scient... author of the research.

"Our research implies that far from being natural, these changes c... largely driven by dirty pollution and volcanoes. If so, this means a number of natural disasters linked to these ocean fluctuations, such as persistent African drought during the 1970s and '80s, may not be so natural after all."

Paul Halloran, a co-author and Met Office ocean scientist, said pollution particulates could make clouds brighter and longer lasting, which means they could reflect more of the sun's energy back into space – consequently cooling the sea.

"When industrial pollution peaked over the Atlantic, this effect played a big role in cooling the ocean beneath," he said. "As pollution was cleaned up – for example, after the clean-air legislation of the '90s – the seas warmed."

In other words, tackling pollution could end up warming the ocean, reducing levels of drought in Africa but causing more dangerous hurricanes in North America.

The study is likely to be closely read by the insurance industry, said Matt Huddleston, Met Office principal consultant for insurance.

"The industry uses near-term estimates of how many hurricanes will hit land, and the Atlantic surface temperature is an important component of that," he said.

"The research means they can better understand why rates of hurricane landfalls may have varied, and also it raises the potential of prediction if there were short-term changes in pollution levels."

A man walks along the waterfront as Hurricane Irene passes to the east of Nassau on New Providence Island in the Bahamas