

Why climate change is causing upset stomachs in Europe

April 30 2013



Credit: AI-generated image ([disclaimer](#))

Much has been said about the effect of climate change, but little is known about its impact of water-related health issues. Scientists are now suggesting that greater quantities of rainfall and bigger storms could be responsible for more unsettled stomachs in parts of Europe.

The VIROCLIME project has studied the impact of climate change on the transport, fate and risk management of [viral pathogens](#) in [water](#). Over a four-year period, the project has examined and sought ways to manage the [effects of climate change](#) and the risk associated with [viral diseases](#). With EU-funding of EUR 2.4 million, the approach has been to design hydrological models and upgrade tools for tracking harmful viruses from human sewage in Europe's waters, and subsequently determine the health risks.

According to the [World Health Organization](#) (WHO), the lack of safe drinking-water affects almost 1 billion people. Furthermore, they predict that 4 % of the global disease burden could be prevented by improving water supply, sanitation, and hygiene.

This has been the aim of the VIROCLIME project led by Professor David Kay and Dr Peter Wyn-Jones from the University of Aberystwyth in the UK. They have conducted case studies and monitored virus levels at five environmentally sensitive sites in; Sweden, Spain, Hungary, Greece and Brazil. These countries are particularly vulnerable to climate change, being susceptible to heavy rainfall.

Tests included analysing exposure levels to estimate the risk of disease associated with climate changes such as heavy rainfall. Tools were also devised and novel methods introduced for processing sewage, collecting effluent and water samples, and analysing quantitative detection of the target viruses.

Models were also adapted from existing epidemiological models to test viral diseases within the community and an indicator analysis helped to track any relationship between virus levels and water quality standards. Also tested were changes in the virus concentration in water, and the risk to public health activities, such as bathing in polluted water or consumption of shellfish.

As a result of this study, a large database has been established, with over 1800 samples, enabling testing for a range of enteric viruses and bacterial water quality indicators. This, in turn, allows researchers to make predictions about variations in virus concentrations under different climate change scenarios.

Project partners say their data will help to inform policy and scientific communities, as well as wider communities on the likely consequences of [climate change](#).

A review of the VIROCLIME study has been published in the Cambridge Journal, *Epidemiology and Infection*, titled, 'Extreme water-related weather events and waterborne disease.'

More information: VIROCLIME www.viroclime.org/
Epidemiology and Infection- Cambridge Journal
[journals.cambridge.org/action/ ... e=online&aid=8843275](http://journals.cambridge.org/action/...e=online&aid=8843275)
World Health Organization (WHO)
www.who.int/water_sanitation_health/en/

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