

## Energy, environment and global health

**Deadly river: cholera and cover-up in post-earthquake Haiti.** By **Ralph R. Frerichs.** Ithaca, NY: Cornell University Press. 2016. 301pp. £18.50. ISBN 978 1 50170 230 3. Available as e-book.

In August 2016 the United Nations Special Rapporteur on Extreme Poverty and Human Rights, Philip Alston, delivered a damning report on the responsibility and culpability of the UN in relation to the ongoing presence of cholera in Haiti. The first ever cholera outbreak on the island began in mid-October 2010, ten months after a devastating earthquake led to deaths of (at least) 220,000 people. The cholera outbreak, six years on, has infected thousands and claimed over 9,000 lives. To this day, there is controversy around its causes, who knew what in the early weeks of the outbreak and who bears responsibility for eradicating the disease as well as compensating those who have lost so much because of it.

The reason why we know the cause of the cholera outbreak in Haiti is due to months of careful epidemiological (and politically sensitive) fieldwork by Dr Renaud Piarroux, from the Université de la Méditerranée in Marseilles, France. Piarroux, an academic and experienced humanitarian medic, decided to investigate due to his personal doubts about the environment theory being put forward as the cause of the epidemic at the time. His scepticism would come to be supported by the UN Secretary General-appointed Panel of Independent Experts, who presented their findings in May 2011. They found that the cholera strain had come from South Asia and most likely originated in the UN peacekeeping mission (MINUSTAH) camp Annapurna in Mirebalais, Haiti, not long after the Nepalese

peacekeeping contingent arrived in early October 2010. Importantly, the panel rejected earlier scientific conjecture—including from within the UN—that the cause was environmental. This theory stated that the outbreak could be traced to a natural release of cholera bacteria, found in river beds, during the earthquake which then multiplied due to stronger than usual warm weather patterns. However, while putting forward the UN peacekeeping camp as the cause of the outbreak, the panel also suggested that it was a lack of clean water and safe sanitation facilities within Haiti's communities that was the 'real' cause. In *Deadly river*, Ralph Frerichs tells the story of how Piarroux came to study and document the UN camp's release of the sewage into the river system coupled with a failure to treat the pipes that delivered this contaminated water as the real culprit of the cholera epidemic.

The book details Piarroux's journey through a day-by-day account of his experiences and presents three main arguments over 24 chapters. First, Piarroux discovered the cause of the cholera outbreak *in spite of* the efforts by international actors on the ground—particularly UN agencies and organizations located in Haiti as well as the US Centers for Disease Control and Prevention located in Haiti. The book provides a detailed history of the conversations, maps, media statements and articles that were being produced in the early months of the cholera outbreak to illustrate that there was—at best—a lack of interest in locating the cause of the outbreak or—at worst—a deliberate attempt to cover up the link to an increasingly unpopular UN peacekeeping camp, as local sentiment had already turned against the mission's continued presence. I was not always convinced by the argument that the UN, in particular, was working as one to hide the cause of the cholera outbreak. It is a pathological entity that rarely thinks or acts as one; but this book provides convincing evidence that demonstrates curious positions and statements adopted by the World Health Organization (in particular) and Office of Coordination of Humanitarian Affairs, which sought to categorically deny any link between the cholera outbreak and Nepalese troops. What is also particularly troubling is the failure of a troop-contributing country to implement the medical screening that they are expected to complete on deployment of their soldiers, and then the failure of the UN medical team within the peacekeeping mission to ensure that checks had been carried out across the battalions deployed.

The second argument of the book is on who prioritizes what type of response during a crisis such as this one. As Alston has argued in his recent report, the people most affected by this outbreak are the poorest and most politically disenfranchised. The environment-as-cause theory had fuelled the misperception that cholera may be an 'inevitable' and 'natural' reality for the poor Haitian population. Piarroux's findings challenged this and revealed that specific organizations were responsible and had a duty to eliminate a disease that was not naturally occurring in the country. This meant that more effort would be required from the Haitian government and the international humanitarian community (including NGOs and international organizations) to devote time and focus to detecting the cause of the outbreak and to eliminating it. This book details the initial resistance and scepticism experienced by Piarroux, and the hard fought gains he made with the support of select UN agencies such as UNICEF (the UN children's agency) and NGOs like MSF (Doctors Without Borders) to win the fight to treat the outbreak as introduced and therefore possible to eliminate—and this fight continues today because of the years it has taken to gain acceptance of the scientific evidence. This book convincingly argues that poor communities require short-term interventions such as vaccination and treatment triage to stop the spread, but *everyone* will be back again without also implementing the necessary preventative measures that poor people also have a right to—clean water, clean sanitation and health facilities. *Deadly river* provides an important lesson for outbreak control that goes beyond the cholera emergency

in Haiti. As I read this book, I found myself relating Frerichs's argument to Ebola in West Africa, Zika in South America, and the Yellow Fever outbreak in central Africa. Tracing the cause of outbreaks is vital for implementing measures that not only treat, but prevent further infection and reinfection. This book is a political study of both the scientific community and the aid industry in health emergency response.

This book is a compelling 'how-to' study of why it remains vital to investigate the 'common sense' explanations of events. But it offers readers no happy ending—infection, deaths and poverty continue in Haiti today. No government, UN agency, local business, scientists or troop-contributing country has yet had to face the consequence of their personal failure to investigate the cause of cholera in the first four years.

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