

HAITI EARTHQUAKE 2010

by Paul Warburton

ON WEDNESDAY 13 JANUARY 2010 the world awoke to the news of a massive earthquake in Haiti (Figure 1). There were initial reports that about 170,000 thousand people had died and according to the Red Cross 3 million people had been affected.

Haiti lies very close to a normally passive tectonic plate boundary between the North American plate and the Caribbean plate (Figure 2). The Haiti earthquake occurred at a fault that runs through Haiti and is situated near to the plate boundary. The earthquake occurred at 16:53 local time and registered as a magnitude 7.0 quake on the Richter scale. The epicentre was near the town of Léogâne about 25 km west of the capital city of Port-au-Prince (Figure 3). By 24 January at least 52 aftershocks had been recorded, all measuring 4.5 or greater.

Haiti

Haiti is one of the world's poorest countries. About three-quarters of Haitians live on less than \$2 a day and over half on less than \$1. Life expectancy is only 52 years, partly due to the fact that Haiti has the highest HIV/AIDS incidence outside sub-



Figure 1: Destruction following the Haiti earthquake

Source: Wikimedia Commons/Marco Dormino/UNDP

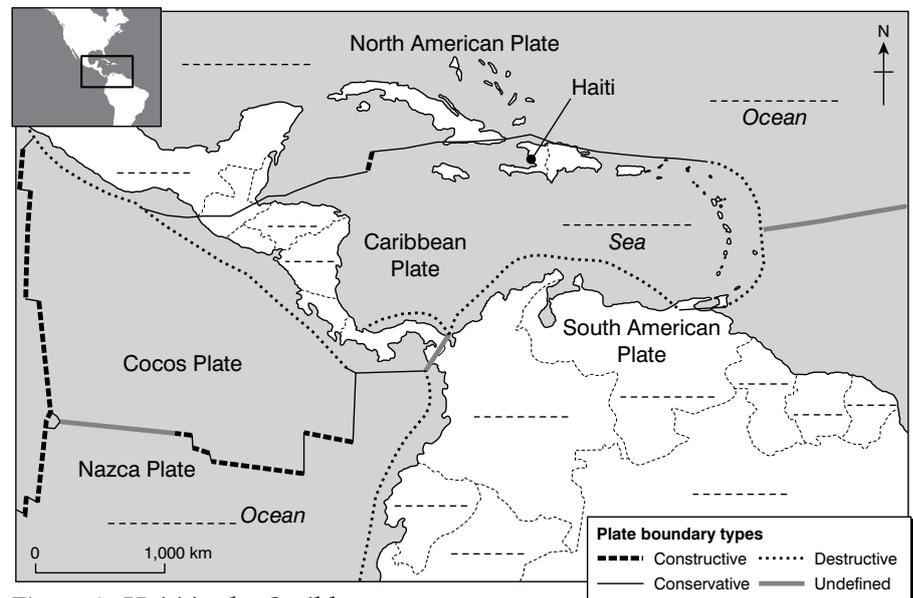


Figure 2: Haiti in the Caribbean

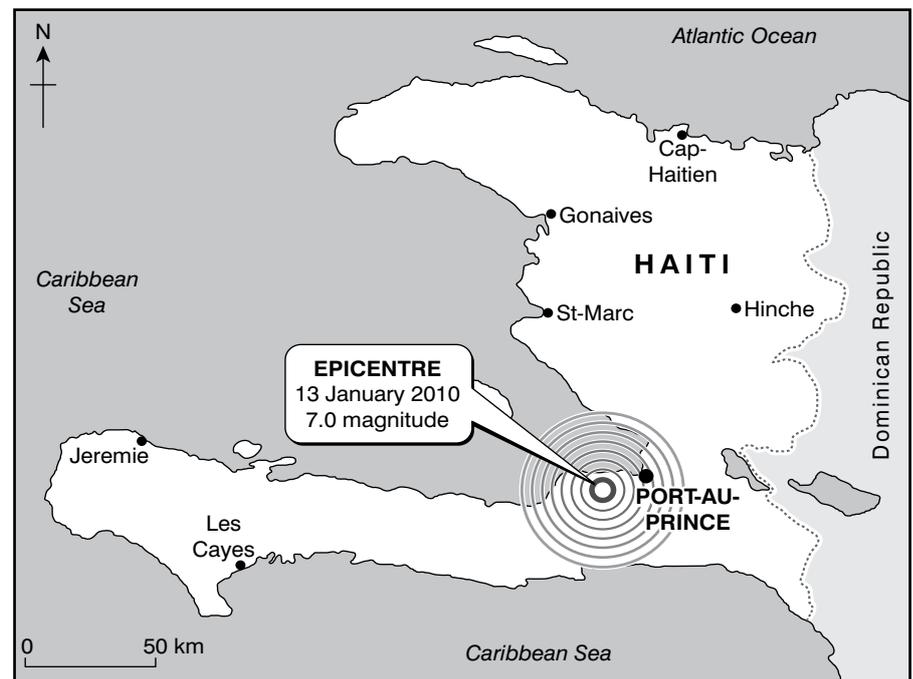


Figure 3: The epicentre of the earthquake

Saharan Africa. The World Bank ranks Haiti lowest in the northern hemisphere on sanitation, nutrition and available health services, with only 25 doctors and 11 nurses per 100,000 population – and most of these are in the urban areas.

Most Haitian children are undersized as a result of malnutrition. Less than half have access to safe drinking water, nearly 40% do not attend school, and fewer than 20% of Haitians aged 15 or over are literate.

The society is also unequal. About 1% of Haitians control half the wealth, and an elite 5% of the population owns 75% of the arable land, with six dominant families controlling most of the industrial production and trade.

The country has suffered a number of political upheavals, with a history of dictatorial rule, coups, and allegations of human rights abuses. Presidential and legislative elections were to be held in 2011 under UN supervision. The earthquake may cause this to be delayed.

In addition, in 2008 Haiti was swept by a number of hurricanes and storms that destroyed 70,000 homes, causing hundreds of thousands of people around the country to be without food, clean water and other essentials, destroying livestock, food crops and irrigation systems.

(You might wish to turn to page 4 and complete Activity 2 at this point.)

The lasting impact of the earthquake

Farming

More than half of Haiti's population – between 5 and 6 million people – live in rural areas. About 85% of the rural population practise some agriculture which accounts for about 26% of Haiti's economic output and makes agriculture the country's biggest employer. Destruction of roads, bridges, fishing ports and irrigation infrastructure had a serious effect on food production.

Before the earthquake, feeding Haiti's population was one of the government's priorities. Efforts were being made to increase food production, control flooding and reforest bare hillsides which had been stripped of trees by poor Haitians who used the wood for charcoal. Following the earthquake these

efforts were suspended as the government tried to respond to more pressing needs.

Industry

Manufacturing industry in Haiti is very limited. Much focuses on the production of clothing, the single largest manufacturing sector in the Haitian economy. Haiti was the 17th largest supplier of clothing products sold in the USA in 2008, with exports valued at US\$ 412 million. The disaster was a severe setback, with some manufacturing facilities being damaged and workers lost or injured in the earthquake.

Progress was being made with tourism before the earthquake – new hotels were being built, cruise ships visited Haiti, and a number of international airlines had services to the country. All of this was disrupted by the earthquake.

People – health and well-being

The hard facts of over 230,000 killed, 300,000 injured and 1 million made homeless do little to portray the horror of the disaster. Figure 4 is an eye-witness account which goes some way to describing one person's response to what was seen.

Buildings

The Haitian government estimated that 250,000 residential buildings and 30,000 commercial buildings had collapsed or were severely damaged. Many notable buildings were significantly damaged or destroyed including the Presidential Palace, the National Assembly building, the Port-au-Prince Cathedral and an important United Nations building in the capital.

As in so many poor countries, buildings were not well constructed. The scale of the damage was partly blamed on corruption in the construction industry.

Responses

The scale of aid required after the earthquake was enormous. Palletloads of water, food, tents, medicine and rescue equipment soon began to arrive at the airport in Port-au-Prince. Emergency teams were also flown in equipped to help the estimated 3 million people – a third of the population – thought to be injured and homeless. The logistics of distributing aid was a nightmare, and problems were compounded by damaged roads and broken phone lines.

The immediate need was to rescue those trapped in rubble and under damaged buildings and to help those who had been injured. Medical facilities in Haiti were already poor, and the main hospital in Port-au-Prince had been destroyed. Thousands of people needed water, food, medical supplies and shelter. Six international and eight Haitian medical teams addressed health needs of the earthquake survivors through mobile medical clinics.

Some aid was sent into Haiti from the neighbouring Dominican Republic. The Red Cross and other agencies sent a convoy of trucks carrying aid which included a 50-bed field hospital, surgical teams and an emergency telecommunications unit.

In late January the UK Disasters and Emergency Committee said that Britons had donated £23 million to the Haiti earthquake appeal. The UK government trebled its funding for the humanitarian response from £6.2 million to £20 million, to provide food, shelter, health and relief work.

The United States – which has a history of involvement in Haiti both politically and through aid efforts – sent planes full of rescue workers, an aircraft carrier and

“The day after, as the sun exposed bodies strewn everywhere, and every fourth building seemed to have fallen, Haitians were still praying in the streets. But mostly they were weeping, trying to find friends and family, searching in vain for relief and walking around in shock.

Entire neighbourhoods have vanished. The night of the earthquake, my boyfriend and I tended to hundreds of Haitians who lived in shoddily built hillside slums. The injuries we saw were too grave for the few bottles of antiseptic, gauze and waterproof tape we had: skulls shattered, bones and tendons protruding from skin, chunks of bodies missing. Some will die in the coming days, but for the most part they are the lucky ones.

No one knows where to go with their injured and dead, or where to find food and water. Relief is nowhere in sight. The hospitals that are still standing are turning away the injured. Cell and satellite phones don't work. Cars can't get through many streets, which are blocked by fallen houses. Policemen seem to have made themselves scarce.”

Figure 4: Eye-witness account by Pooja Bhatia of the Institute of World Affairs

Source: www.twinside.org.sg/title2/gtrends/gtrends282.htm

three amphibious ships with thousands of soldiers, along with a team to restore air traffic control to the airport. Secretary of State Hillary Clinton pledged further long-term assistance to rebuild the shattered country.

Huge amounts of aid were channelled through charities from many different countries. Millions of pounds of private donations also poured into appeals such as that launched in the UK by the Disasters Emergency Committee.

The authorities in Haiti did what they could to support the aid effort. With so many dead and injured and key buildings destroyed, there was little that could be done. Groups with machetes roamed the streets looting what they could, even using dead bodies as roadblocks to stop vehicles. The police arrested over 50 people in an attempt to maintain order. People were encouraged to do what they could to help others. There were fears that air drops would only encourage riots.

Another severe problem was dealing with thousands of dead bodies. Huge graves, some taking more than 100 bodies, were dug in rural areas just outside the capital, while in the shantytown of Carrefour, local authorities said more than 2,000 corpses had been burned. The World Health Organisation recommended corpses should be treated with chemicals and placed in open ditches, giving relatives a chance to identify them, rather than in mass graves.

During the months after the earthquake a further concern was the spread of disease. Haiti was already a very poor country, and a poor diet and lack of clean water makes it easy for disease to spread. This was made worse by dead bodies, a lack of sanitation and adequate toilets. Inevitably, an outbreak of cholera was officially declared in October. The outbreak claimed the lives of over a thousand people and infected many more.

Geography and the earthquake

An earthquake can change a landscape, and can make maps out of date in an instant. A number of countries provided satellite imagery and maps of the worst-affected areas, and used Geographical Information Systems (GIS) to help in the rescue efforts. Comparison of the maps from before and after the

event allows areas that have been hit hardest to be distinguished and makes it possible to identify passable routes for relief and rescue workers. Additionally, they can help to identify areas that are suitable for setting up aid camps where medical support and shelter can be provided to people. Images of the area after the earthquake can also be used to assess potential hazards like landslides.

Conclusions

In the longer term many needs remain. The earthquake has deepened Haiti's need for essential public institutions that can help to organise society. It will be important for the government to do what it can to provide jobs for people. This will mean trying to rebuild industry, including tourism, and to re-establish farming. Restoring communications will be vital. There will also be ongoing health needs, the hospital will need to be rebuilt and it will be important to continue to tackle problems of sanitation and clean water.

Much of what is happening in Haiti highlights the fact that we need to change the way food production and assistance is provided in the world. While emergency food aid will always be needed, especially in disasters such as this, there is an increased willingness amongst many countries to help the poorest nations in the world to become more self-sufficient in food production through new and enhanced agricultural methods.

It is hoped that this latest devastation can eventually lead to a better organised and more socially equitable society, and improved international structures that can better deal with future crises.

Activities

You will need access to a computer and the internet for some of these activities.

1 Complete a copy of Figure 2 by naming the countries and ocean/sea areas in the spaces provided.

2 Use the CIA's world fact database:

www.cia.gov/library/publications/the-world-factbook/ to complete a copy of Figure 5.

3 Referring to Figure 1 and what you have learned about plate tectonics, explain why Haiti is vulnerable to earthquakes. Explain why there are earthquakes at the type of plate boundary near Haiti.

4 Referring to Figure 3, explain why Port-au-Prince was so badly affected by the earthquake.

5 Draw a timeline like the one below. Watch one of the video clips at: www.youtube.com/watch?v=IfBdiFyxKOk and summarise what happened during the first few days after the earthquake. Try to pick out two or three key things each day.

↓ Tuesday	12 January
↓ Wednesday	13 January
↓ Thursday	14 January
↓ Friday	15 January
↓ Saturday	16 January

6 Make a poster that summarises the impacts of the earthquake. Put the information in text boxes and use images to illustrate the impacts. Divide up your poster so that economic and social impacts are separated (classified) and clearly labelled. You could do this using ICT or by hand.

7 Make a list of problems that hinder relief efforts in a poor country like Haiti.

Measures of development	Haiti	UK	USA
GDP per capita (\$)			46,000
% population below poverty line			12
Infant mortality rate (per 1,000 births)			6.14
Life expectancy			78.24

Figure 5: Comparison of measures of development

Source: CIA database

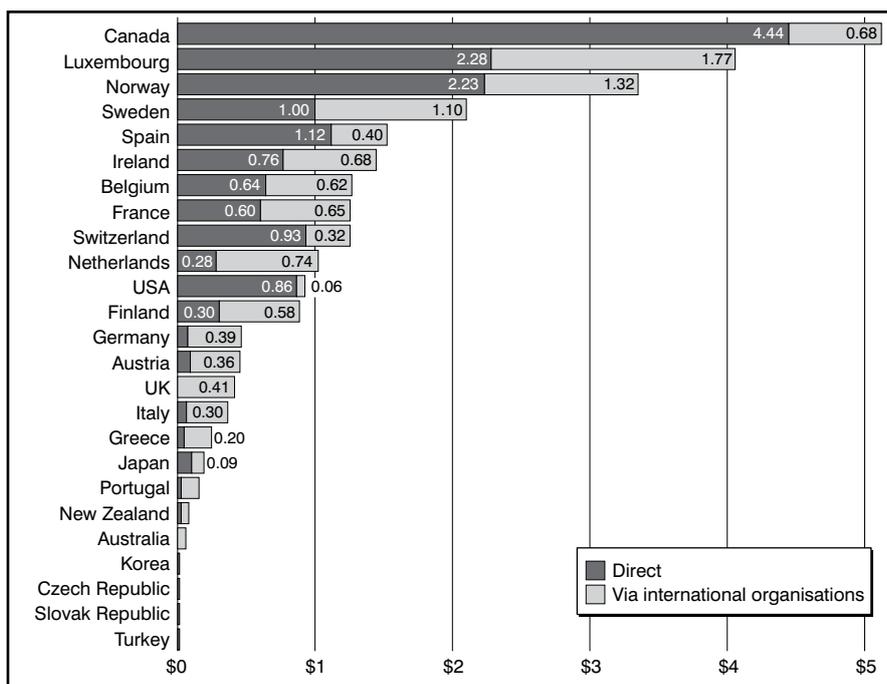


Figure 6: Aid given to Haiti in 2008, per person in the giving country (\$)

Source: <http://blogs.cgdev.org/globaldevelopment/2010/01/haiti-aid-facts.php>

8 Make two lists of the responses to the earthquake. Separate those that were short term (days, weeks – in other words immediate needs) from those that were longer term (months, years). There may be some overlap.

9 There are two ways in which international aid can be transferred to poorer countries. Do some research to find the difference between bilateral and multilateral aid. Find examples of both from your studies of the Haiti earthquake.

10 (a) Figure 6 shows the amount of aid given to Haiti in 2008 by individual countries.

Using Figure 6 as a guide, draw graph bars for Canada, the Netherlands and Sweden using the following figures:

Country	Direct	Via international organisations
Canada	4.44	0.68
Netherlands	0.28	0.74
Sweden	1.00	1.10

(b) Study Figure 6 carefully. Work in groups, and suggest five interesting observations based on the data. Each group should select a spokesperson, and feed back their ideas to the other groups.