

The hazards presented by volcanic essay sample



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“ The hazards presented by volcanic and seismic events have the greatest impact on the world’s poorest people.” To what extent do you agree with this view? (40 marks)

Volcanic and seismic events can take place all over the world and therefore both more economically developed countries (MEDCs) and less economically developed countries (LEDCs) can be affected. In the last 30 years there have been multiple examples of where volcanic and seismic events have had an impact on both MEDCs and LEDCs. Some of these include the 2010 earthquake in Haiti and the 2011 Japanese earthquake and the consequential tsunami. In this essay I will show how the impact of volcanic and seismic events have a greater impact on poorer countries than on richer countries. Although prevention of either an earthquake or a volcanic eruption isn’t possible, it is possible to manage them and reduce the overall impact. This should, in theory, be easier for MEDCs due having more money available to spend on management policies. However in some situations it isn’t the primary effects of the earthquake or eruption that have the greater impact.

For example in the 2010 Eyjafjallajokull eruption in Iceland it wasn’t the lava or pyroclastic flow that caused problems, it was the ash cloud which was produced. The cloud caused most of northern European airspace to be closed between 15th April and the 23rd with disruptions continuing until late May. In total this cost the airline industry around US\$1.7 billion. The impacts can also be viewed from a global perspective as although it was only European air travel which was restricted, it will have caused a lot of problems for travellers all around the world. On a local scale the eruption increased the rate of melting of nearby glaciers which meant that the Krossa glacial river

increased by 60C over a two hour period. Farmland was affected by the thick layer of ash which had fell and then become wet and compact making it difficult to continue farming. This shows how the impacts of a volcanic event can not only have impacts on a developed country but also on others who are further away.

The impacts of the Eyjafjallajokull eruption can be directly compared with the impacts of the Nevado del Ruiz eruption in Colombia in 1985. Although there is a difference of 25 years between the eruptions, the impacts of the eruption can still be critically assessed. The loss of life as a result of the Nevado del Ruiz eruption was over 23, 000 people compared to none in Iceland. However, as with the ash cloud in Europe, it was a secondary effect of the eruption which had the impact. The combination of hot lava and heavy rainfall led to the creation of large lahars which followed river valleys down to towns such as Armero which was completely buried. Up to a month before the eruption it was clear that the volcano was due to erupt yet as no specific date could be provided the authorities refused to take action. It was this lack of response which led to the high death toll. It is clear that the eruption of Nevado del Ruiz had a greater impact than the eruption of Eyjafjallajokull but it could be argued that this is down to the nature of the eruption.

The 35 million tonnes of material erupted by Nevado del Ruiz was only 3% of the amount that erupted from Mount St Helens in 1980. As well as this the eruption was classified as level 3 on the volcanic explosivity index whereas Eyjafjallajokull was rated level 4. This shows that the hazards presented by a volcanic eruption have a greater effect on LEDCs. An example of an LEDC which had serious impacts was the 2010 earthquake in Haiti near the capital, <https://assignbuster.com/the-hazards-presented-by-volcanic-essay-sample/>

Port au Prince. The magnitude of 7.0 is surprisingly low when compared to the amount of damage caused by the earthquake. An estimated 220,000 people are thought have died as a direct result of the earthquake with another 300,000+ injured. With the population of the city around 900,000 in 2010, just under a quarter of the population was killed because of the earthquake. What made the situation worse was that the city's main services including the hospital were destroyed during the earthquake leaving nowhere to take the injured people. A similar example is the 2004 Boxing Day tsunami which was caused by an earthquake just off the coast of Sumatra in the Sunda trench found in the Indian Ocean.

The magnitude was measured at 9.1-9.3 and so will have had some impact on the island but it is the tsunami that was caused because of the sudden displacement of water. There is no official death toll due to the widespread area that was affected but estimates are around 250,000+ people. Both of these disasters prompted global responses in terms of aid which meant that they became reliant on foreign aid to deal with the aftermath. In the case of the 2004 tsunami, the impacts could have been reduced if the South East Asian countries had implemented a tsunami warning system before hand. However this would have only helped the countries further away from the epicentre as northern Sumatra was the worst hit yet even with warning there wouldn't be much to do in the short time they had. In 2011 an earthquake measuring 9.0 hit Japan but unlike in Haiti, the damage dealt was minimal. Due to earthquake proofing many buildings were left standing afterwards and so the cost of damages was reduced. However the subsequent tsunami

caused wide-spread flooding and the two disasters combined caused 15, 883 deaths.

While this is significantly lower than Haiti and the South East Asian countries, it was the total cost of damages due to falls in the stock market that had the impact on Japan. Costing a total of US\$235 billion, the earthquake is recorded as the costliest natural disaster in world history. Because of this the impacts of seismic events may have the greatest impacts on poorer countries in terms of loss of life, but when it comes to the cost of the disaster even richer countries are at the mercy of the earthquake. In conclusion I agree with the statement when it comes to the management of volcanic events as in MEDCs the primary impacts are generally better managed but the secondary effects such as the ash cloud would be almost impossible to manage effectively.

This shows that a country can only prepare for such an event up to a certain extent and then after that it is reliant upon the scale of the disaster. When it comes to earthquakes, they are highly destructive in both MEDCs and LEDCs but due to the poorer quality of buildings in LEDCs, they fare off worse. Richer countries are able to implement counter-earthquake schemes which are aimed at keeping a building standing long enough for it to at least be evacuated, hence reducing the expected death toll.