International Year of Planet Earth

Essay entry on the topic of “hazards- minimising risk, maximising awareness”

Cast your mind back to the Christmas of 2004; what can you remember about it? Maybe you remember the craze of the mini iPod revolution or perhaps you have memories of eating far too much food and falling asleep in front of the TV with family? For many, Christmas of 2004 brings back horrific and traumatic memories for hundreds of thousands of people. It was in the early hours of Boxing Day that an estimated 225,000 people lost their lives at the hands of a tsunami, generated by at an earthquake in the Indian Ocean registering 9- 9.3 on the Richter scale. The world as a whole went into deep shock and demanded answers as to how this happened and more importantly, could this tragedy have been prevented. Geoscientists and oceanographers were put under the spotlight, with the media desperate to find someone to blame. The fallout from the disaster was only too clear to see, with collapses of economy and lack of basic infrastructure. On a psychological scale, many victims have been left with post- traumatic stress disorder, with reports of children being terrified of the sea, associating it as the evil that stripped them of their family. I wish to look at the ways in which this natural disaster could have been handled differently, and what impact this could have had.

Firstly, many people are now aware that it is impossible to stop an earthquake from happening. Earthquakes are a dynamic process within our earth that occurs as a result of movement in the earth’s crust. This movement causes the oscillation of seismic waves, which disturb the earth at the surface. The Boxing Day tsunami was no different- a very large earthquake occurred which caused a tsunami due to the rupture of the sea floor and consequent displacement of a colossal amount of water. The question many people asked was “could this have been predicted”? Sadly, the answer to this is, in a way, yes. In the fallout of this catastrophe it became apparent that the Indian government had not invested in “tsunami prediction” systems or monitoring equipment in the Indian Ocean. Had these systems been in place it might have been possible for a warning to be issued to the public and an evacuation procedure carried out to get people away from the shore and the surrounding danger areas. Since a quarter of a million people died, such systems have been put in place. This shows that many people find it hard to comprehend the severity of possible disasters until something terrible has happened. Geologists were aware of the tectonic situation here and made the government aware but maybe, through lack of understanding, the government did not appreciate the severity of the possible danger and felt it unnecessary to invest money in “early warning systems”.

Not only was a lack of understanding shown by the government, but by the people of the countries affected. It is often reported with tsunamis that many people see the sea “disappear” towards the horizon, exposing large quantities of the seabed. Survivors of the tsunami have documented that many bathers rushed towards the horizon to see what was happening. This action would have most certainly cost them their lives. It was reported in the media that a young British schoolgirl had learnt about tsunamis in geography had realised what the exposure of the seabed meant, and was able to inform her family, giving them a few precious minutes to flee the coastline and get to higher ground. Her family survived. This is a classic and vital sign of how education can help save lives. Schoolchildren in America that live in areas prone to hurricanes or earthquakes are taught what to do, should an event happen. I feel that all schoolchildren and members of the public should be taught a module raising awareness of natural hazards, regardless of their geographic location. This would take up a tiny proportion of teaching time but could almost certainly mean the difference between life and death.

Montserrat, a small island located in the Caribbean Sea is a prime example of effective hazard awareness and management. Montserrat is home to the Soufriere Hills volcano, a volcano that once was believed to be dormant until it started erupting in 1995. Since this event, a large exclusion zone has been set up around the volcano, forcing 70% of the population to move from the island. Eruption levels have fluctuated since it became active, but the appreciation and respect of this volcano has not been lost 12 years on. In fact, the exclusion zone is said to have increased in response to volcanic dome expansion. Residents of the island are aware of evacuation procedures and medical illness associated with ash fall. This appreciation of the phenomena of volcanic activity has allowed part of the island to remain habitable whilst remaining aware of the danger.

A well known historical date to many is 79AD. This date is associated with the incredible pyroclastic eruption of Mount Vesuvius, in which an estimated 16,000 people died. Since this event, the volcano has continued to show eruptive behaviour, with the last activity being reported in 1944. In recent years, much speculation has arisen as to if the volcano will have a massive eruption period, similar to what was seen in 79AD. Many scientists feel that it is not a question of if this will happen, but more a case of when. Scientists feel that the danger is very real and Italian officials have offered residents living on the flanks of Vesuvius and around the danger zone roughly £18,000 to relocate. Although the government appear to appreciate the dangerous geology affecting the area, which is vital in allowing the general public to be educated (something, as previously mentioned, did not occur with the countries of Indonesia and Somalia in the Boxing Day tsunami) many residents refuse to give up their homes. As far as they are aware, they have lived in the area their entire lives and have witnessed no eruption so are reluctant to believe that the area is potentially dangerous. Although they may be aware of the 79AD eruption, many view it as happening so long ago that they cannot perceive it as possible to happen again. This situation, for me, proves how vital early education into earth hazards is. The earlier people are made aware of natural hazards, the easier it is to get them to believe scientists predictions, instead of being lulled into a false sense of security by their initial assumptions of safety, based on their day-to-day experiences.

I hope that this essay has successfully conveyed my viewpoints on hazards. Whilst I am aware that in many cases it is not possible to stop hazards from happening, monitoring and setting up evacuation policies can help to reduce the magnitude of the disaster. However, the real key issue is education. If the population of this world does not understand or appreciate the vulnerability and instability of the planet then it is impossible to reduce hazard risk and devastation. Ideally, I would like to see earth science playing a much larger role in the curriculum than it currently does now, regardless of geographic location. Although the UK, for example, is in no danger of volcanic eruptions at present, more and more people are travelling the world and they need to be aware of the dangers that they may face. It is vital that education is not used as a scare mongering tactic to prevent people from travelling, but without education we cannot move forwards from these disasters that the world experiences. I also feel that the general public needs to be aware of the difficulty in predicting such events; many feel frustrated when false alarms are put in place about hazards. However, through education, I would like to see the general public become aware of the difficulty associated in this field and appreciate that these actions are put in place for their safety and that they must be taken seriously. It is important that the world wakes up to realise that in order to save lives and make a difference we cannot believe that ignorance is bliss any longer- we must work together as a whole and ensure that we do everything possible to reduce the risk hazards possess now, and for the future.

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