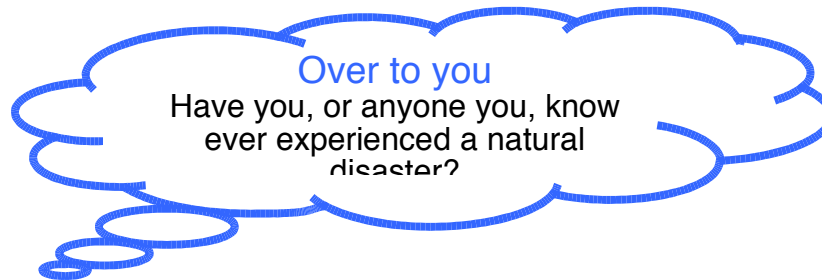


Natural Disasters

We have all seen the awful effects of a flood or an earthquake - if we're lucky only on the news.

About 75 percent of the world's population live in areas affected at least once by earthquake, tropical cyclone, flood or drought between 1980 and 2000 (Reducing Disaster Risk UNDP report, 2005).



What natural disasters?

causes

First we need to get a bit technical. Natural hazards and natural disasters may sound like the same thing but there is a small but vital difference.

Natural hazards are things like earthquakes, volcanic eruptions, landslides, tsunamis, floods and drought - any physical event that happens naturally. They are caused by changes in the atmosphere, the earth's surface or the sea or other body of water. They can happen quickly, called a rapid onset hazard, or build up gradually, called a slow onset hazard. They can happen over smaller, local areas or affect countries, regions or the whole world – some even happen in space, on the sun for example.

Natural Disasters happen when the effects of a natural hazard cause serious problems for the people they affect, either in maintaining or improving their standard of living. This can be an economic effect (destroying crops for example), a social one (e.g. families being separated), or both.

We can't stop natural hazards; they are a feature of our planet. **We can stop many natural disasters.**

Natural disasters are easier to prevent than many other environmental problems. Today, there is more scientific knowledge and technological know-how than ever before to predict the effects a hazard might have before it strikes. After we find out the risks of a hazard and we can often take effective actions to reduce them, e.g. replace trees in deforested areas. The cost of doing this is normally far less than the cost of clearing up after a natural disaster.

Did you know?

The most expensive Disaster ever was the Kobe earthquake of January 1995. It resulted in overall losses of \$100 billion (2000).

But the media and the public are generally not interested in prevention work before a disaster - they take more notice of appeals for relief after a disaster, showing dramatic pictures of devastation and families who have lost everything. This means that there is often too little money and resources given to disaster prevention.

Natural hazards don't automatically cause natural disasters.

There are lots of things which can make a natural hazard into a disaster. Many of these are changes made to the environment by people.

For example, the effects of flooding may be made worse by deforestation - trees trap water in the soil which slows down or even stops floods, but when they are cut down severe flooding happens more easily. Or, lots of people living together in small areas, e.g. in cities and or shanty towns, where houses and roads are built cheaply and un-safely can mean that even a small earthquake can cause a disaster, as hundreds or thousands of people are hurt when the buildings fall down.

Did you know?

More than 184 people die every day of the consequences of Disasters (idem) and in the past two decades more than 1.5 million were killed by Disasters

People cause many natural disasters.

Case Study – Zimbabwe 1992 vs 2002. What went wrong?

Droughts are a natural hazard that often turns into a natural disaster by causing crops to fail which causes food shortages and then famines. Although sometimes food shortages can not be prevented, it is often governments' failure to plan for or deal with droughts that turns food shortages into famines.

In 1992, Zimbabwe was hit by one of the worst droughts by history. Three quarters of the crops failed, and Zimbabwe who usually exports grains, had to import 2.5 tonnes of maize. However the government reacted early, and put in place an efficient relief program and managed to cope with this extremely risky situation. As a result famine was avoided.

Ten years later, in 2002, a year with unusually heavy rain followed by a dry spell, half of the population of Zimbabwe needed food. Although this time the water levels were higher than in 1992, the population found it a lot harder to cope and suffered a full-fledged famine.

What went wrong? In 1992, the government reacted early, and was in a better economic position to react to the crisis. When crop failure hit Zimbabwe in 2002, its economy was declining at one of the fastest rates around the globe and poverty was wide-spread. Also, over a third of population had AIDS, unlike

in 1992, making them a lot more vulnerable as their bodies were weak before the food shortage. Finally, the government's new agricultural policy greatly decreased the amount of land planted and crop harvested.

This clearly shows that being prepared for disasters can help us avoid turning risks into crisis. (Chivi district, Zimbabwe, www.itdg.org)

Where do disasters happen?

When thinking about the impact of disasters in the world, one of the most important things to remember is that a higher rate of Natural Hazards does not equal a higher risk from Disasters.

Unequal development has dramatic effects on our ability to resist natural hazards, turning them into disasters with catastrophic consequences. For example, the fact that some countries are affected by extreme poverty or war makes it very difficult for their population to respond to natural hazards. Sometimes hazards which would otherwise be quite minor such as a common drop in rainfall can turn into a full-fledged famine when combined with poverty or war, preventing food to be transported to a region or bought by the people living there.

Did you know?

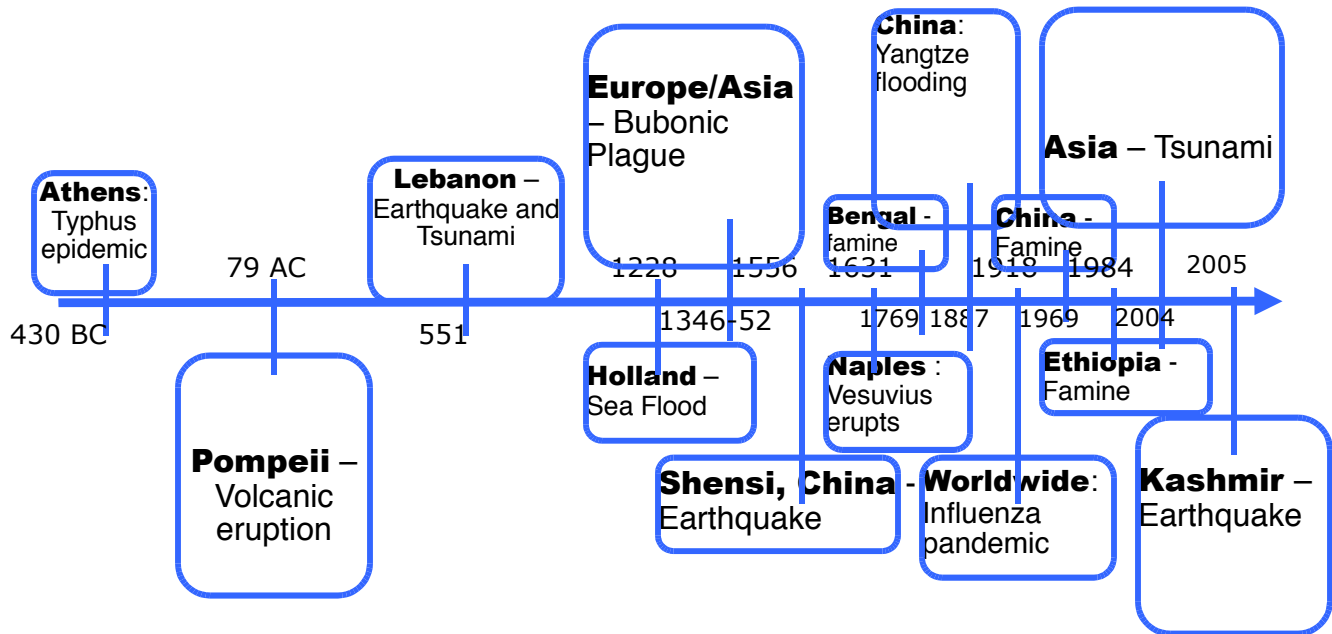
While only 11% of the people at risk from Natural Hazards live in countries classified as Low Human Development, they make up 53% of the total recorded deaths from natural disasters (RDR report). This shows that development plays a major role in Natural Hazards turning

In places where people have the money, resources and knowledge to prepare themselves well they are able to resist serious hazards. In 1989 in California an earthquake which measured 7.1 on the Richer scale killed 67 people. The year before in Armenia a slightly weaker earthquake (6.9 on the Richer scale) killed at least 25 000 people and 130,000 people were injured.

The huge difference in the number of people hurt by the two earthquakes is because houses in California are usually designed to resist earthquakes. Although major roads were destroyed, fewer people than normal were out driving, because many people were watching an important baseball game in the area, explaining why so few people died. Most of the houses in Armenia were made from heavy concrete, which collapses easily. In the city of Leninakan, only 14 buildings were not damaged. These buildings were the only ones in the city which had been designed to withstand earthquakes.

Disasters in History

What happened and when:



Have natural disasters changed over time? Are there any others you can think of that are not on the timeline?

At first the timeline above seems to show more frequent disasters in recent years. This is mainly because more disasters are reported and studied today than they were in the past.

However, an increasing number of scientists believe that man-made pollution and other environmental problems have major effects on the planet's ecosystem and increase the risk of natural hazards around the world. For example, atmospheric pollution from cars and factories causes the global warming of the planet. As a result the oceans' levels rise, increasing the risk of disasters such as floods.

Did you know?

Tsunami means Great Harbour Wave in Japanese.

Tsunamis, which are often formed by underwater earthquake, can send waves speeding across the ocean at more than 500 mph (805 Km/h) or nearly 4 times the average race speed of a Formula One car. These waves are only a few centimetres high (about the size of your thumb) when they cross the ocean. However when they hit the coast they grow suddenly and can reach 45 metres (147 feet) in height.

Issues such as global warming and the resulting natural hazards affect people on a global scale, forcing us to think about our responsibilities and impact as global citizens.

Slow and Forgotten Disasters

When thinking about disasters, we often think of the disasters which receive the most media coverage, such as the recent Asian Tsunami or Hurricane Katrina which both topped the

Real Life

War, disease and hunger have killed 3.8 million people in the Democratic Republic of Congo since 1998. This is a disaster you never hear about on the news. The BBC's Fergal Keane described it as "one of the worst sins of omission in media history".

When the Nyiragongo volcano erupted in January 2002 hundreds of journalists rushed to the Democratic Republic of Congo to see the dramatic eruption and its effects. The volcano killed less than 100 people. These 100 people received far more media coverage than the 3.8 million who died from other natural hazards.

headlines on TV and in the press for several weeks.

Real Life

There has been a war going on in Uganda for the last 18 years which affects millions of people including thousands of children, forced to become child-soldiers. This disaster has received very little media coverage compared to a rapid-onset disaster such as the Asian Tsunami. As a result, an average of only 50 cents per person affected has been donated for Ugandan war compared to 500 Dollars donated per victim of the 2004 Asian Tsunami.

Rapid-onset disasters, like the Asian Tsunami, can have very dramatic consequences and often kill large numbers of people over very short periods of time. However, slow-onset disasters, such as poor rain, failing crops, locust infection, war or chronic poverty, affect people continually over very long periods of time. These 'slow' disasters claim far more lives overall and affect greater numbers of people than rapid-onset disasters but often receive little or no media

coverage.

As a result they receive much less aid money.

Case Study – Media Coverage during the 2005 India-Pakistan Earthquake

October 2005 saw a devastating earthquake in Pakistan. Its epicentre was in the Kashmir region, it affected a huge area, reaching bordering regions in India.

Pakistan says 38,000 people died in the quake, 60,000 were injured and 3.3 million are homeless. At least another 1,400 more people died in Indian-administered Kashmir.

Pakistan says the quake will cost it \$5 billion in infrastructure losses.

The rough, mountainous quake area has made relief operations and media coverage extremely difficult. Bad weather such as heavy rains and winds have also made bringing help and relief very difficult. As a result, the total number of deaths is feared to double as people die from cold and hunger in the winter when they have no proper houses to live in.

As a result of little media coverage, only a fraction of the money needed for relief and the rebuilding the region has been received. The situation has been described by the Red Cross as an 'unusually slow response'.

Natural Disasters and Development

Many developing countries need to build better infrastructures, i.e. roads, buildings, electricity cables etc, to improve their economy and people's quality of life. When a natural disaster, like an earthquake, happens it can destroy or seriously damage this infrastructure and it can take years to get the money to replace it.

Natural disasters also affect people's lives and it often takes months or years before they can go back to work or school and generally resume a normal, healthy and safe life.

Disasters seriously threaten the development process.

Development brings more pollution such as emissions from cars, planes and factories which threaten with the lives of people across the whole world. Within a country, economic development can put people's lives at risk.

Often as a country's economy becomes more industrial very large numbers of poor people from the countryside move to the city looking for work in the new factories. They have no where to live so build their own houses from whatever materials they can get, forming shanty towns or slums. They often have to build on areas where no one else wants to live such as steep slopes or flood plains or be dangerously near to toxic factories or railway tracks. When a natural hazard happens in this situation it can cause a huge natural disaster as large numbers of people are living in unsafe houses in the areas of land natural hazards will affect the worst.

Development may also be a cause of disasters.

Development can help bring solutions, such as new building techniques. For example, making sure that all new houses are earthquake resistant in places where earthquakes often happen or that factories comply with laws and international standards regarding emissions can save many lives and protect people from serious health risks.

Also education about disasters and what to do in case they happen can help save many lives, by preparing before disasters and reacting more quickly when they do happen.

Development can help prevent disasters

Case Study – The ‘flood of the century’ in Bangladesh

In 1998, Bangladesh was hit by ‘the flood of the century’ which covered approximately 100,000 square kilometres (one third of the Great Britain) for two and a half months. The devastation was huge. It affected 30 million people and destroyed over 2 million tons of rice.

The government and the military provided the first emergency relief work. However, a lot more money was needed for the recovery and rebuilding of the country. In order to gather the money, funds from microfinance programs were used. This enabled large numbers of poorer families, worst hit by the floods, to borrow money free of charge so that they could buy food and start rebuilding their houses. They also got together and pooled their money to buy rice and other supplies in bulk at a discounted price.

Microfinance programs help low-income groups and families to obtain loans at very good rates or put their money together to buy supplies and goods in bulk at a cheaper price. Microfinance groups also work with women and local groups to enable them to have access to their own finances and conduct projects without depending on their husband, families or landowners.

Case Study – Young Heroes in El Salvador

In October 2005, the effects of two simultaneous natural hazards in El Salvador, namely Tropical Storm Stan and the eruption of volcano Santa Ana, combined into a full-scale natural disaster. At least 70 people died and the 70,000 people were evacuated as landslides and flash floods wiped out entire villages.

During the disaster, many young people who had been trained to respond to disaster helped save many lives.

In one case, three young people saved the life of Oscar, a seven year old boy. The young Plan volunteers are members of the Community Emergency Committee in El Salvador and had taken part in training



about what to do in a disaster. Carmen, 18, Luis, 17 and Mario, 18 braved torrential flooding to drag Oscar to safety.

As Carmen explains:

“We had mud up to our knees but the three of us moved as fast as we could and started scooping the mud with our hands, frantically shoveling with our fingers... We were finally able to reach Oscar’s shoulders and arms and pulled him out before more mud slid on the area.”

Oscar’s story is just one example of how being prepared for Natural hazards can save lives.

Take Action!

Learn what to do if disaster strikes from the US government’s disaster preparedness page for kids.

<http://www.fema.gov/kids/>

Join their letter writing campaigns to help stop environmental destruction and

<http://www.globalresponse.org/>

More general information about the environment and development, plus links to the latest natural disaster stories in the “It’s a fact” box.

<http://youthink.worldbank.org/issues/environment/>

Fun but tricky games, ways to get involved and lots of info on how to save the planet.

<http://www.greenpeace.org/international/>

Find out what’s happening to help the people most recently affected by disasters.

<http://www.redcross.org.uk>

Lesson plans for teachers about natural disasters, including tsunamis.

<http://www.globaleducation.edna.edu.au/globaled/go/pid/1250>

Lesson plans from Oxfam about natural disasters in general and some specific activities on the latest disasters.

<http://www.oxfam.org.uk/coolplanet/teachers/disaster/index.htm>