Prevention is better than cure …

There are many activities we can undertake together to protect ourselves from volcanic eruptions and live happily with volcanoes.

Here is how it works:

With the help of a vulcanologist, at school, with your parents, with the firefighters, with your friends from the civil protection agency or many other people, you can determine if, where and how past volcanic eruptions have taken place. This can be seen by observing nature and the rocks around the volcano and by talking to the inhabitants who have been living around the volcano for a long time. Where there are many rocks and few plants, lava flows will have been. We can therefore determine where the dangerous locations are.

Game:

If there are people living in dangerous locations, you can make a drawing of the location, called risk map, to determine where the most dangerous areas are.

Here is how to make a risk map.

1 With the help of your teacher, consult books or archives and ask around you what great eruptions have taken place in your area in the past. Determine which part of your village or city and its surrounding was affected. For example by mud flows, lava flows or ground trembling and landslides. Indicate these on your map using different symbols for different events.

2 On your risk map, indicate where the main buildings are: schools, hospitals, fire stations, houses, police stations, as well as buildings which could be dangerous like factories, fragile constructions, dams, electric power plants. Also draw the roads, rivers, tension lines and construction sites in your area using different colors.

3 Show how badly the buildings would be affected (a little, a lot, fully destroyed) using a different color according to the level of destruction.

4 Show where the most vulnerable people, those who would need most help in case of a disaster, would be located (old people's homes, hospitals, kindergartens, for example).

5 Discuss different solutions to reduce the risks and make your village/town safer.

6 On the risk map, try to add the following things if they do not exist where you live:
-houses which are so strong that they resist earthquakes.
elters (in case the volcano spits fire or ashes)
-dams to stop lava or mud flows
-alarms like bells or sirens to evacuate people before a volcanic eruption.
-escape routes

7 Share your work with local authorities, the firefighters, the police, emergency workers, medical doctors, social workers and journalists.

What do you do in case of an emergency?

Next to many volcanoes in the world, there are observatories which can warn of an emergency. A surveillance observatory is the ideal way to follow the activity of a volcano in between eruptions in order to predict them. Inside the observatory, the vulcanologists watch volcanoes permanently by looking at them, but above and beyond, by using instruments which can detect a volcano waking up. The signs can be earth tremors, the air changing or the volcano's size changing for example. Here's an emergency table:

Emergency	Type of Alarm levels	Possible time before an erupton
Green	No alarm	Several years
Yellow	Vigilance	One or several years
Orange	Pre-Alarm	Several months or weeks
Red	Alarm	Immediate

When the emergency level is red, you must quickly go home and listen to the radio or watch TV to get information.

You must stay inside the house or go into a shelter foreseen for the emergency. If you are outside when a lot of ash is falling, you have to put a cloth over your eyes and nose to help you breathe better. You must never panic and wait for the instructions of the local authorities.

If the eruption becomes more violent, obey your parents and follow the advice of the police, the army and the vulcanologists. You may have to leave your house for several days while the volcano calms down.

A vulcanologist comments

Thanks to their surveys and their measuring instruments, vulcanologists can now tell several weeks or days in advance if a volcano is waking up. They can often warn people before it explodes violently and advise them what to do. This way, people living in areas at risk, meaning living close to a volcano which can wake up, are assisted in what to do protect themselves.

Interview with the volcano

As I was saying, after I have been in a temper I calm down and often go to sleep for years and years. I am not as nasty as all that! Every time I erupt you benefit afterwards. The masses of ash I have spewed out help your plants to grow. When the rain washes the ash into lakes and rivers there will be lots more fish.

The gas that comes out of my crater brings up lots of different metals, and sometimes even precious stones and diamonds, with it. You can use my rock to build houses, roads and bridges. You can use pieces of me to make glue, toothpaste and lots of other things …

You can use the heat I continue to give off to heat your homes, make electricity, and grow vegetables even when it is very cold.

So before you say I am nasty, think about that. You can manage the dangers I pose and act accordingly. Because even if I sleep for a very long time I can wake up very suddenly. Think about it, and don't settle too close to me. That way we can get along together on our beautiful planet Earth.

A vulcanologist sums up

People have always known that volcanoes can sometimes be deadly and destructive, but they also know what benefits volcanoes can bring. The people living at the foot of some volcanoes do very well out of the fertile soil.

Of course a volcano can be dangerous, but if we humans are reasonable and do not settle just anywhere, too close to craters of in the middle of areas that are directly threatened, we can minimize the risks. And by getting to know volcanoes better we can tell in advance what might happen and how to react in the event of an eruption.

Information for parents and teachers

What is a natural hazard?

Natural hazards comprise phenomena such as earthquakes, volcanic activity, landslides, tsunamis, tropical cyclones and other severe storms, tornadoes and high winds, river floods and coastal flooding, wildfires and associated haze, drought, sand and dust storms, and infestations.

What is a natural disaster?

A natural disaster is a result of the impact of a natural hazard on a socio-economic system with a given level of vulnerability which prevents the society affected from coping adequately. Natural hazards themselves do not necessarily lead to disasters. It is only their interaction with people and their environment that generates impacts, which may reach disastrous proportions. The International Strategy for Disaster Reduction encompasses technical and environmental disasters only when caused by natural hazards. A disaster is usually defined as a serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of the society affected to cope using only its own resources (IDNDR/DHA 1992).

What is risk?

The probability of harmful consequences or expected loss (of lives, people injured, property, livelihood, economic activity disrupted or environment damaged) resulting from interactions between natural or human induced hazards and vulnerable/capable conditions. Conventionally risk is expressed by the equation Risk = Hazards x Vulnerability / Capacity"

What does disaster reduction entail?

There are ways of mitigating the growing impact of natural hazards around the world. The knowledge and technology to put them into effect are widespread. Disaster reduction entails doing everything that can be done to make people less vulnerable to natural hazards. This spans a wide range of activities, from efforts to try to prevent disasters to action designed to limit their severity when they do occur. Success depends on good information and determined action by the public authorities.

Disaster reduction is an ongoing process, not limited to a single disaster. The aim is to persuade societies at risk to commit themselves to responsible disaster management that goes beyond traditional responses. By its nature, disaster reduction is a multisectoral and interdisciplinary exercise involving a variety of interdependent activities at all levels -- local, national, regional and international.

The United Nations Secretariat for the International Strategy for Disaster Reduction

Within the United Nations system, the Secretariat for the International Strategy for Disaster Reduction is responsible for coordinating disaster reduction strategies and programmes. Its mission is to help people withstand disasters by making them aware of the importance of disaster reduction measures and providing support to help reduce human, economic and social losses. The Secretariat also provides backing for an Inter-Agency Task Force on Disaster Reduction headed by the Under-Secretary-General for Humanitarian Affairs and comprising representatives of several United Nations agencies, regional institutions and non-governmental organizations. Within the United Nations system, the Task Force is the chief body responsible for the design of disaster reduction policy.

United Nations ISDR Secretariat
Palais des Nations
1211 Geneva 10-CH
Tel : +41-22-917-2759
Fax : +41-22-917-0563
Email: isdr@un.org
Web: www.unisdr.org
www.eird.org