

# EFFECTS OF LANDSLIDES

## Introduction

Soil is an important commodity to sustain life on earth. Soil is the base on which grows the plants and trees. Soil supports life. Till now whatever man has achieved is built on soil...be it tall structures, offices, bungalows, cars, trains. Whatever it is, soil supports all. Soil is a loose particle. It can move freely with a blow of wind or flow of water. Hence it needs to be binded properly to restrict its movement. In modern days due to deforestation and other effects there is soil erosion and the soil layers are becoming loose. Due to their looseness soil can easily travel from place to another

## what is a 'landslide'?

In hilly regions there are a variety of slopes. Some are steep slopes and some very gradual. The soils on these slopes are under constant pressure. Due to the slope they face a movement downwards. If the soil gets loose then there is chance for the soil to move downwards under momentum. Sometimes these movements can be catastrophic. When it happens over a large area it takes trees, animals, shops, houses and cars along with it. It is then called a 'landslide'.

Talking about landslides the following question pop out in one's mind

- when does landslide happen?
- Why does it happen?
- What are its side effects?
- How can we prevent such a catastrophe?
- Can a landslide be stopped in middle?
- What are the famous landslides that occurred till date?

Observing these points and talking about them in details we get to know-

### **1. when does landslide happen?**

Landslides happen when the soil gets too cloggy with the absorption of water. This happens mostly at the time of rainy season. The soil absorbs more

moisture than it can retain and hence turns into a semi- liquid form (viscous). This liquidified form slides down easily along slopes. And if the slope gradient is high then it is easier for it to slide down. While sliding down it takes all the items of the adjoining areas along with it. Be it a car or a house, it just moves along with it. This mass movement of soil is called a landslide.

## **2. What are its side effects?**

The side effects of a landslide are many. To list a few are:-

- Loss of precious human life and property
- Loss of cattle and farming lands
- Loss of valuable top soil layer due to soil erosion
- Disruption in road transportation and normal means of movement
- Disruption in daily supplies of food, medicine etc
- Deforestation (soil carries trees along with it)
- Loss in economy

## **3. How can we prevent such a catastrophe? Can the effect of landslide be reduced?**

The following are some of the methods to prevent such a catastrophe. Such catastrophes can be easily prevented if adequate steps are taken on time.

- Vulnerability to landslides depends on location, frequency of landslide events and type of human activity in the area, but there are also other factors that may **influence the size and frequency of such phenomena**.
- The effects on **people** and **buildings** can be lessened if *hazardous* areas are avoided or if activities in such areas are restricted or deployed under certain conditions. Local governments are responsible for land-use policies and other regulations meant to reduce the risks for landslides to take place.
- Covering the land with impermeable membranes in order to prevent water infiltration in the landslide;
- Directing surface water sources away from the landslides;
- Draining ground water streams away from the landslides;
- Minimizing irrigation on the surface of the soil.

The following are few ways to reduce the effect of a landslide in case they do occur.

- Preventing soil erosion by use of more trees, grass cover and planter beds
- Planting more vegetation
- Retaining walls at the edge of slopes or in swampy lands to hold the soil together, so that it's not free to move
- Altering the slope gradient- steep slopes can be cut at various levels and filled to level and create a relatively plain land. Thus the slope gradient will increase. This change in slope gradient can help to control the force of landslides to a great extent.

#### **4. Can a landslide be stopped in middle?**

No once a landslide starts, it can never be stopped abruptly in middle. But yes if there are terraces made along the roof. The soil collected in one terrain can be blocking by the next terrain and so on, and the effect of landslide can be reduced to a considerable amount.

#### **5. What are the famous landslides that occurred till date?**

**Malpa landslide, Uttarakhand:** between August 11 and August 17 in 1998 consecutive landslides occurred in the district of Malpa. Unfortunately over 380 people died and almost an entire village was washed away in the landslide. It is perhaps one of the most devastating landslides of India.

**Mumbai landslide, Maharashtra:** in the year 2000 month of July occurred this landslide. The reason for the landslide was heavy rains which also brought in soil erosion. Over 67 people had died and local trains were widely affected.

**Amboori landslide, Kerala:** occurred in November 9th, 2001 this landslide is classified as the worst landslide in Kerala's history. Around 40 people died in the incident and heavy rains were held responsible for the land shift.

**Kedarnath landslide, Uttarakhand:** it was the result of Uttarakhand floods. Over 5700 were reported dead and over 4,200 villages had been affected by the floods and post-floods landslide. It occurred in the year 2013 on June 16.

**Malin landslide, Maharashtra:** The landslide occurred on July 30, 2014, in a village in Malin. The landslide occurred due to heavy rainfall and around 151 people died and 100 people went missing after the disaster.

These were some of the fatal landslides that occurred in India in the recent years and it took away the lives of many innocent people. There are more landslides that have occurred but all cannot be listed in this context.

### **Conclusion**

Landslides are devastating. They take away lives. Hence it is now high time to take up steps to prevent it as far as possible. The modern technology man built these days is of no use if we can't stop the catastrophes that harms us only. Newer technologies should be invented to counteract such a downfall. Life is precious, it should be saved as much as possible.

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