
Preview of Landslide in Western Ghat

Mukund A. Patel, Ajitkumar.A.lole, Sanyam S. Gandhi

Sanjay Ghodawat Group of Institute

ABSTRACT:-

The development of any region is always depending upon natural characteristic of that region. For the development of region the transportation play most important role. Transportation gives boots to rapid civilization in that area. The whole economy will create due to construction of road and railway which is the biggest mode of transport in India. As the road and civilization are affected by the landslide there is huge loss of human life and economy. We frequently get the news of landslide in western ghat that is stone falling on Kankan railway track. This is due to fast sliding of large part of bed rock. Like other disaster landslide is also difficult to predict, it always depend upon local factor most of the time. But the biggest advantage is that by studying the geology, slope, geomorphic agent, vegetation, and human activity we can identify the zone which can be under the danger.

KEYWORDS:-

Landslide in western ghat and its causes, geological reason, preventive action for landslide.

INTRODUCTION:-

Western ghat is also known as sahyadri. Western Ghats is rich in mineral ore like iron ore, most predominant rock found is basalt and in some part there is granite gneiss. The western ghat is the eroded edge of the Deccan plateau which is basically made up of two type of rock that is intrusive igneous rock and extrusive igneous rock. Intrusive igneous rock are granite and extrusive igneous rock is basalt which is formed by eruption of non viscous basic lava. Western ghat is formed layer by layer of hard igneous rock which is also called as bed. The upper layer of this bed is eroded due to weathering action and again the lava flow and cool down producing the successive layer. Between these two layers there is very less cohesion due to these eroded part hence in western ghat we have more landslide.

Landslide is basically of flowing of soil mass or earth movement in downward direction. Soil mass move due to steep slope in western ghat. The land slide is divided according to their vulnerability zone.

1-Very high vulnerability zone

2- High vulnerability zone

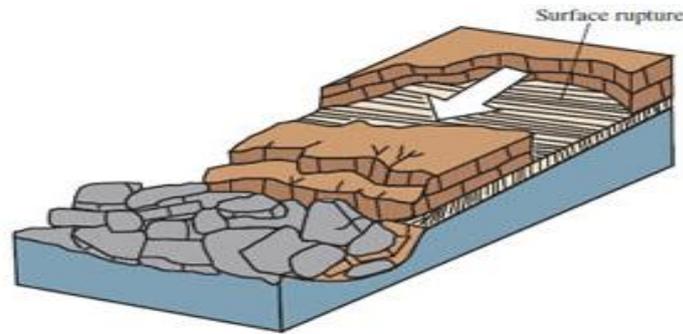
3- Moderate to low vulnerability zone.

The western ghat comes under 1st zone which is very high vulnerability zone. Due to heavy rainfall and steep slope the land slide occurs frequently. So the western ghat is considered under 1st zone. In western ghat have their two type of landslide block slide and fall.

Block slide

A translational slide in which the moving mass consists of a single unit or a few closely related units that move downslope as a relatively coherent mass.

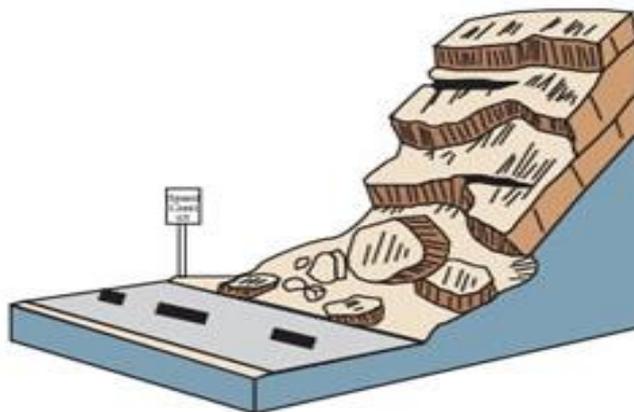
Fig1. Block slide:



) **Fall**

Falls are abrupt movements of masses of geologic materials, such as rocks and boulders that become detached from steep slopes or cliffs. Separation occurs along discontinuities such as fractures, joints, and bedding planes and movement occurs by free-fall, bouncing, and rolling. Falls are strongly influenced by gravity, mechanical weathering, and the presence of interstitial water.

Fig2. Fall:



Consequences of landslides:-

In landslide there is very less area or rather we say localized area is directly influenced by it. In western ghat there is railway known as konkan railway it is always affected by these landslide which lead to destruction of railway line, also the road block happen more in western ghat. The landslide is risky to human life as well as causes mass destruction. Due to this the repair work and maintenance work due to landslide increases ultimately increasing the cost of maintenance. This leads to the adverse affect on the development activity of the western ghat.

Preventive action for landslide:-

1. **Ameliorate surface drainage as well as subsurface drainage of water**

As we know the water play an important role in landslide, by providing proper drainage of water it can reduce the chance of landslide up to some extent.

2. **Constructing piles and retaining wall**

By constructing a retaining wall we can easily reduce the effect the landslide. The retaining wall may be constructed of metal, concrete, or wooden beams. But the construction of retaining wall is costlier and it have very high initial cost so it is not suitable in western ghat

3. **Conserving of vegetation**

By planting trees and bushes in the steep slope of western ghat we can reduce the risk of landslide in western ghat. This method is suitable ,by this method we can reduce the land slide as well as by

planting tree we can reduce the effect of climate change and global warming .This method has more benefit and It is economical ,Tata power ltd have planted many tree in western ghat .

4. **Excavating the head:**

Removing the soil and rock at the head of the landslide decreases the driving pressure and can slow or stop a landslide. The excavating of head required advance equipment and more labour so it is not possible in western ghat to carry high excavating equipment at actual site and it is uneconomical. The environmental impact is more by this method so it is unsuitable .

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