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AFFECTED BY VERY STRONG MONSOON RAINFALL CREATE LANDSLIDE IN 'MALIN' VILLAGE IN PUNE

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Short Profile

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ABSTRACT:

There is also discussion about the role of development and deforestation, which may be far more important. The landslide appears to be a mudslide in deeply weathered soils, so this slope would be highly susceptible to disturbance. The investigation will need to look at this in detail. This paper studies on rapid landslide incidence at the hillside development areas, in the village of 'Malin' in Pune district, western India. They affected by very strong monsoon rainfall in the two days prior to the landslide. The discussion will be on landslides: the causal factors, the impacts, mitigation actions.

KEYWORDS
Landslides, Slopes, Rainfall

INTRODUCTION :

Bhimashankar region, the origin of river Bhima which is an important tributary of Krishna, is a high rainfall region with spectacular biodiversity. It is also home to Maharashtra's state animal Malabar Giant Squirrel. The region is home to a vibrant tribal community which has seen several assaults on its way of life through the formation of the sanctuary, displacement caused by Dimbhe & other Dams, recent windmill projects, etc.,

In the recent years, some of the major landscape changes occurring in this region are through mechanised terracing of slopes for cultivation as well as developments related to windmill projects on mountain tops, which entail deforestation as well as road cutting on steep slopes. Although there are no windmill farms in Malin, such farms exist in the neighbouring Khed tehsil. Plans for such farms in Ambegaon are in the pipeline.

It needs to be understood that, terracing for cultivation has been a traditional occupation of the tribals in this region, as in most of the Western Ghats. Not only is it an important livelihood support factor, but it has been limited by its scale, location and implementation due to its inherent manual nature. According to Anand Kapoor of Shashwat, tribals themselves do not prefer terraces made by JCBs and other machines as these are not entirely suitable for cultivation.

However, it is also a fact that now some government departments are using heavy machinery like JCBs in their bid to push terracing program. Unscientific mechanized terracing, which comes together with muck dumping, slope instability, affected drainage etc., can play a huge role in magnifying the impacts on a naturally vulnerable, high rainfall region.

An independent credible review of the way the land levelling activities are going on under government policies and programs should be immediately instituted and till its report is available, use of heavy machines like JCB may be minimized.

There is no obvious sign of cracking or such like that, I can see which is not unexpected for a soil slide. However, the feature that, I have marked a above is interesting – this appears to be a large topographic hollow. Such features can have the effect of concentrating intense rainfall during overland and soil flow. If this occurs, then pour water pressures in the soil in the hollow can become very high, initiating failure. If I was investigating this landslide, I would be very interested in this hollow. The location directly above the village is deeply unfortunate if this feature was a factor. A landslide occurs when part of a natural slope is unable to support its own weight. For example, soil material on a greasy surface under, can become heavy with rainwater and slide down due to its increased weight. A landslide is a downward or outward movement of soil, rock or vegetation, under the influence of gravity. This movement can occur in many ways. The speed of the movement may range from very slow to quick. The mass of moving material can destroy property along its path of movement and cause death to people and livestock. Although landslides usually occur at steep slopes, they may also occur in areas with low relief or slope incline. Listed below are some examples.

LANDSLIDE IN MALIN

On 30 July 2014, a landslide occurred in the village of Malin in the Ambegaon taluka of the Pune district in Maharashtra, India. The landslide, which hit early in the morning while residents were asleep, was believed to have been caused by a burst of heavy rainfall, and killed at least 150 people. A bus driver

who drove by the area and saw that, the village had been over run with mud and earth first noticed the landslide. In addition to those dead, more than 160 people, and possibly up to 200, were believed to have been buried in the landslide in 44 separate houses. Rains continued after the landslide making rescue efforts difficult

CAUSES OF LAND SLIDE

1.HEAVY RAINFALL:-The landslides were caused by heavy rainfall that had begin the earlier day, with the village receiving 12.10 cm of rain on 29 July and the heavy shower continuing during the following day.
2.ENVIRONMENTAL DAMAGE:- The environmental damage that, resulted in the landslide is supposed to have more than one cause. Deforestation in the area was cited as a cause causal to the landslide.
3.CHANGE OF AGRICULTURE PATTERN:- Changing agricultural practices that, the villagers had recently shifted from cultivation of rice and finger millet to wheat, which required leveling of steep areas, which contributed to volatility of the hills.
4.MANMADE: The construction of the nearby 'Dimbhe Dam' ten years ago was measured as a possible reason. The volatility of the hillsides was due to the construction activities, which is done without cautious analysis of environmental penalty.

IMPACT OF LANDSLIDES

Though early reports stated that, the landslide had killed 20 people, officials expected the death toll to exceed 155. As of 4 August 2014, the death toll had reached 150. The bodies so far recovered were of 50 men, 50women and 50 children.

Figure .1 heavy rainfall create landslide appears to be a mudslide in deeply weathered soils

A enormous loss of property and resources were observed after the disaster along with loss of transportation, lifeline facilities farmland. Loss in productivity of agricultural or forestlands due to being hidden by fragments. Reduced property values due to refusal of people to purchase disaster prone land. Loss of proceeds due to loss of productivity, transport breakdown, etc. Increased cost due to reserves in preventing or mitigating future landslide damage. Loss of human productivity has death

and damage. Decrease in quality of life due to the deaths of family members and the destruction of personal property, which had a great sappy value. Adversity had a deep impact on people's emotional comfort affecting their feelings, thoughts, actions, and relationships.

REMEDIATION OF LANDSLIDES

Many methods are used to remedy landslide problems. The best solution, of course, is to avoid landslide-prone areas altogether. Before purchasing land or an existing structure or building a new structure, the buyer should consult an engineering geologist or a geotechnical engineer to evaluate the potential for landslides and other geology-related problems.

IMPROVING SURFACE AND SUBSURFACE DRAINAGE

Because water is a main factor in landslides, improving surface and subsurface drainage at the site can increase the stability of a landslide-prone slope. Surface water should be diverted away from the landslide-prone region by channeling water in a lined drainage ditch or sewer pipe to the base of the slope. The water should be diverted in such a way as to avoid triggering a landslide adjacent to the site. Surface water should not be allowed to pond on the landslide-prone slope.

SUGGESTIONS

Trees, grasses, and vegetation can minimize the amount of water infiltrating into the soil, slow the erosion caused by surface-water flow, and remove water from the soil. Although vegetation alone cannot prevent or stop a landslide, removal of vegetation from a landslide-prone slope may initiate a landslide.'

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