The Effect of Geosciences on Landslide Prevention  
Tracy Peucker

Landslides cause three billion dollars worth of damage, and 1,000 deaths each year throughout the world. Entire neighborhoods, towns, even cities are destroyed, though dams are most commonly destroyed (USGS, 2005). Geoscientists study landslide prone areas to find preventative solutions based upon the causes, both artificial and naturally occurring. By implementing geoscience research, landslides could be greatly decreased, as well as predicted.

Landslides often occur during the monsoon season, or following earthquakes. Heavy rains can cause loose soil, beginning the movement of debris. Human influence concerns include unsafe piping, or excess irrigation (USGS, 2016). Mining and building can lead to landslides, specifically near unstable land. Earthquakes often produce unstable land, tremors can trigger landslides with almost no warning. Unstable land can also stem from deforestation, caused by wildfire, disease, or industry. Both natural causes and human infrastructure have equal influence upon landslides occurrence.

It is not so much landslide prevention, as it is preventing property and environment damage due to landslides. Though some factors are inevitable, primarily rainfall, seismic activity, or deforestation, many landslide prone areas can be mapped. Variables most easily identified include slope, soil type, proximity to a water source, and vegetation (AGI, 2017). Geoscience helps to identify triggers and susceptible areas, and find ways to minimize damage. Researchers at the University of Camerino are using other variables, such as meteorology patterns and soil humidity in order to create more accurate landslide forecasts (University of Camerino, 2015).

These factors converge to create vulnerable slopes, where human activity expedites natural processes, and where geoscience advances come into play. No natural disaster is completely preventable, but by utilizing geoscience research, mitigating landslide effects is possible. Multiple areas are implementing research to predict these devastating disasters. (University of Camerino, 2015). The importance of geosciences in relation to landslides rests in prediction, protection, and prevention.

Works Cited

