

Spatial Analysis of the Landslide Risk in the Cameroon Volcanic Line (CVL).

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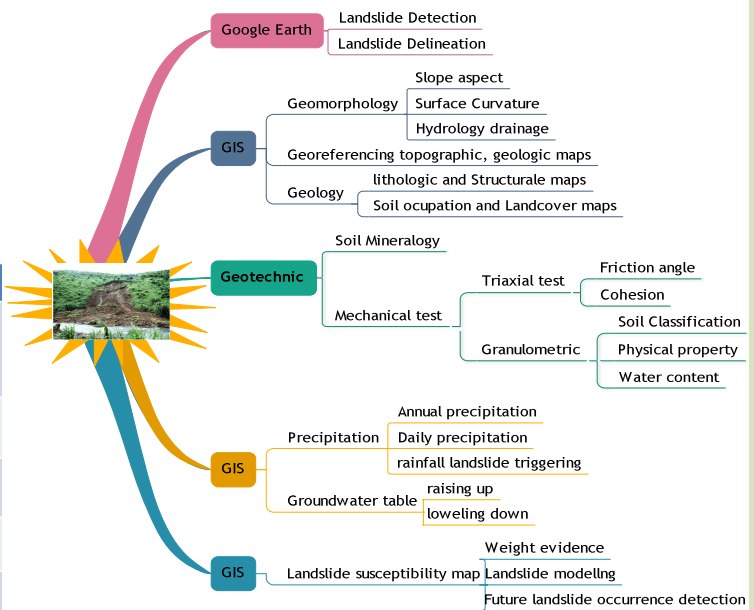
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INTRODUCTION

Landslide are recognized as important geomorphologic process due to the role they play in the development of hill slopes in mountainous regions, and to related socio-economic consequences. Landslide analysis can be performed at numerous spatio-temporal scales depending on the objectives of the study. In this study, past landslide activity and the triggering factors will be used to access mass movements hazards along the cameroon Volcanic Line (CVL). Spatial aspects will be studied in terms of landslide susceptibility maps that are important for development planning and disaster management.

MATERIAL AND METHOD



PRELIMINARY RESULTS- LITTERATURE REVIEW

Date	Location	Damage	Rock type	Possible triggering
July, 2003	Magha	25 deaths, property valued at 803773 US dollars, infrastructure and farmland damaged, many people trapped under debris	Volcanic blocs	Precipitation
27 th June, 2001	Limbe	23 deaths, 2400 displacements, farmlands and property destroyed	Weathered basaltic blocs	Precipitations
June, 1988	Melong	11 deaths, a lot of damage to property, farmland and houses destroyed	Volcanic	Precipitation
Sept, 1992	Santa	12 deaths material damage and traffic blocked	volcanic	Precipitation
August, 1990	Oyom Abang	5 deaths, houses destroyed	metamorphic	Precipitations, human settlement
August, 1978	Dschang	6 deaths	Volcanic	Precipitation
July, 1998	Baingo	5 deaths, damage to 3 houses and farmlands	Weathered rhyolite	Precipitation, earth tremors
August, 2006	Bamenda station	4 deaths, one house completely destroyed	rhyolite	Precipitation
20 th October, 2007	Kekem	3 deaths, 1 injured, 10 family displaced, road Bafoussam-bamenda destroyed	volcanic	Precipitation

GOOGLE- EARTH RESULTS



CONCLUSION

The Cameroon volcanic Line (CVL) area is known to be highly susceptible to landslide occurrences. More than 300 landslides have been felt (historical and oral memory) or recorded in Cameroon since 1954 with more than 122 killed and many damages (devastation of farmlands, destruction of houses, destruction of linear infrastructures and water tower).

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REFERENCES

- Ahmad, R., and McCalpin, J.P., 1999: Landslide susceptibility maps for the Kingston metropolitan area, Jamaica with notes on their use. USD publication no.5
- Aleotti, P. and Chowdhury R., 1999. Landslide hazards assessment: summary review and new perspectives. Bulletin of Engineering Geology and the Environment, 58, 21-44.
- Ayonghe, S.N and Ntasin, E.B., 2008. The geological Control and triggering mechanisms of landslides of the 20th July 2003 within the Bambouto Caldera, Cameroon. Journal of the Cameroon Academy of science 7, 3, 191 - 204.
- Carrara, A., Guzetti, F., Cardinali, M and Reichenbach, P., 1999. Use of GIS technique in the prediction and monitoring of landslide hazard. Natural Hazards 20, 117-135.
- Cruden, D.M and Martin, C.D (2013). Assessing the stability of a natural slope. In: proceedings of the 11th International Conference on Geotechnical Engineering, Beijing, China, Pp 47-55.
- Van Western, C.J., Van Asch, Th W.J., Soeters, R., 2006. Landslides hazards and risk zonation: why is it still so difficult? UNESCO, Paris 63 p.
- Zogning A, Ngouanez, A. and Sacko, O., 2007. The 2007 landslide disaster in Cameroon: a case study of the recent landslide disaster in Cameroon. Sedimentology, 54, 199-217.