**GIS BASED LANDSLIDE RISK ASSESSMENT IN BUYUK MENDERES BASIN**

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# Abstract

Landslide disaster poses an important environmental threat in the region where it occurs. It rapidly destroys biological diversity by combining with natural disasters accelerated by human factors such as landslides.

In this study Geographic Information Systems (GIS) was used to evaluate the landslide risk of Buyuk Menderes Basin. For this purpose with the help of conditioning and triggering data such as slope aspect, slope gradient, distance from roads, distance from drainage lines, distance from faults, lithology, runoff, plan curvature and LULC (Land use/Land cover) landslide risk in Buyuk Menderes Basin evaluated. Analytical hierarchy process (AHP) was employed to weighting these factors in the evaluation.

**Keywords**: Landslide, Landslide Risk Assessment, Natural Hazards, GIS, AHP

# Aims

# Landslides, which are defined as the downward movement of rubble, soil or rock mass, can cause significant damage in our country. Due to the geological, climatic and geographical characteristics of our country and improper land use, landslides are frequently experienced and often repeated and turn into disasters. In this sense, studies conducted for the monitoring and evaluation of landslide disaster are of great importance.

# Method

Slope aspect, slope gradient, distance from roads, distance from drainage lines, distance from faults, lithology, runoff, plan curvature and Land use/Land cover (LULC) data were used as conditioning and triggering data to evaluate landslide risk assessment. The process was used to evaluate landslide in this study is Analytical Hierarchy Process (AHP) which is a method that can assign scores to each factor. After obtaining the data using GIS, criterias based on the factors were overlapped and Multi Criteria Analyses (MCA) applied. Multi-criteria decision making (MCDM) is an operation process that explicitly evaluates multiple conflicting criteria in decision making. At the final stage of the study, evaluations and suggestions were made regarding the areas with high landslide risk.

# Discussion and Conclusion

With this study, it is aimed to monitor the areas sensitive to landslides in the Büyük Menderes Basin and to facilitate taking measures against new landslides. With the regional and local decisions to be taken in this direction, it will be possible to minimize the damage caused by the landslide disaster.