



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**Soil Erosion Risk Assessment With ICONA Model; Case Study: Beypazarı Area**

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**Abstract:** In this research, the applicability of geographic information system (GIS) and remote sensing (RS) techniques was tested to assess soil erosion risk with the ICONA erosion model. This study was carried out in the Ankara-Beypazarı area because of its variety of diverse landforms, land uses and land covers. The erosion risk assessment phase of this model consists of seven steps that mainly use slope, geology, land use and land cover information. A potential erosion risk map (step 3) was obtained from the slope (step 1) and lithofacies layers (step 2) generated using a digital elevation model (DEM) and digital geological maps. As a result of this process, the distribution of the erosion risk classes was 8.0% (very low), 24.7% (low), 23.6% (medium), 23.6% (high), and 20.1% (extreme). Land use (step 4) and land cover (step 5) layers derived from Landsat TM image data classification were combined to produce the soil protection map (step 6). The soil protection map showed that 77.8% of the area was classified as low and very low, and 22.2% of the area was classified as very high, high and moderate in terms of protection class. During the final predictive phase, soil erodibility and soil protection layers were combined to generate the ICONA soil erosion status map (step 7). The final map showed that 45.9% of the area had high and very high erosive status. These areas especially included hilly and mountainous areas, and excluded the forested parts. The rest of the study area had lower (very low, low and appreciable) erosion status. The present study shows that GIS and RS techniques have an important role to play in soil erosion risk studies.

**Key Words:** ICONA erosion model, remote sensing, geographic information system

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