



## **Land use changes, land degradation and soil erosion on the Taurus Mountains**

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A number of different ecosystems are observed on the Taurus Mountains, which are located in the southern Anatolia on the eastern part of Mediterranean Basin. While the southern slopes of the Mountains that lie roughly in the west-east axis receive an amount of 1000 mm annual precipitation. This amount of annual precipitation decreases to 400 mm in the inner canyons and valley bottoms. Land degradation and soil erosion is an important problem in the area. Natural and human impacts in the area cause negative effect and ecosystem vulnerability. Areas that were covered with natural vegetation in the past have been destroyed as a result of intense human pressure and the amount of soil erosion has been increased with the degradation of lands. The main reasons of land degradation and soil erosion are landuse change, destruction of vegetation and overgrazing. Climatic and geomorphologic conditions of the area have an accelerating impact on the land degradation.

The purpose of this study is to determine the relationship between land use, land degradation and soil erosion in the middle and higher parts of Göksu River basin in Taurus Mountains. In order to determine the land use in the area, topographical maps with various scales and Landsat ETM+ satellite image of the year 2006 have been used. Together with these tools, sediment measurement data taken from the Göksu River have also been also used. Field surveys have been conducted and the vegetation destruction and land use changes have been observed on-site. ArcGIS Desktop v.9x software has been used to process the data. In this respect, the topographic maps of different dates have been scanned and transferred into computer-environment.

As a result of this study, it has been determined that land use in the area has changed significantly, vegetation has been destroyed and soil erosion increased due to human impact. Natural environmental conditions of central Taurus Mountains have directly influenced the human activities and way of living. The large distribution of mountainous and rugged areas limits agricultural lands. Thus, effort of human beings to try to put even the smallest lands into use but destroying natural vegetation for this effort have caused serious problems in terms of ecosystem. Seeking alternative means of living other than agricultural production have forced local people to act according to the conditions of the land, and as a result of which livestock and especially goat breeding came into prominence. It has been observed that overuse of limited agricultural lands and widespread herding played important role in land degradation and soil erosion. In addition, methods and tools used in the agriculture are not appropriate for the area. Destruction of the vegetation by human beings for various purposes, overgrazing, using land without fallowing and vertical tillage of steep slopes are primary reasons for increasing soil erosion.

Land features and soil properties of the area do not provide enough and proper conditions for herding. Thus, negative impacts of goat breeding on existing natural vegetation of the area are very serious. Scarcity of pastures causes destruction of scrubs, shrubs by goats. Continuous destruction decreases the area of vegetation and contributes to carrying away of soil by surface runoff.

**Key word:** Taurus Mountains, land degradation, soil erosion, human impact