

Identification of Potential Agricultural Areas Using Multi-Source Data and AHP

Mert Kubilay Uludağ*

GIS Unit / TurkStat, Ankara, Türkiye

* Corresponding author e-mail: mertkubilay.uludag@tuik.gov.tr

Abstract

Accurate information on the number and size of agricultural areas is crucial for effective food planning. The last agricultural census in Türkiye was conducted by TurkStat in 2001, and the statistics are now outdated. In preparation for a new census, the TurkStat GIS Unit has undertaken a study to identify potential agricultural areas. This study integrates data from the Farmer Registration System, the National Land Cover/Use Classification and Monitoring Project, the Land Parcel Identification System (LPIS), CORINE, the Spatial Address Registration System (SARS), and known agricultural parcels, along with other relevant datasets.

A parcel-based scoring system has been developed using the Analytical Hierarchy Process (AHP), where each dataset is weighted according to its relevance and accuracy. Parcels are assigned a score ranging from 0 to 100, and those scoring 56 or higher are classified as potential agricultural areas. To facilitate visualization, a web application has been developed, displaying parcels color-coded by their scores and allowing interactive access to their attribute data.

This approach provides essential baseline data for the forthcoming agricultural census, supporting more accurate and up-to-date agricultural planning for Türkiye.

Keywords – Data integration, Agricultural parcels, Analytical Hierarchy Process