

Landuse change study in Erdene soum using remote sensing and gis

B.NYAMDAAVA

Institute of Geography, MAS

nyamdavaa012@gmail.com

The aim of this study is the change in landuse/land cover (LULC) of the Erdene soum and to assess for natural conditions human impacts and development activities. The areas of study, Erdene soum in the east of the Central aimag in northeast Mongolia, have been subjected to changes in landuse/land cover, such as overgrazing, forest fires and tourist development. Erdene soum covers an area of approximately 8039.3 thousand sq.km and has a maximum altitude of 2750m. Population of Erdene soum is 3424. Erdene soum, Central aimag is located in 70 kilometers from Ulaanbaatar.

Landuse has been assessed for the 1989 and 2001 using satellite images and 1963 topographical map on the scale 1:100000. The datasets available for the Erdene soum area were; (a) a Landsat ETM+ image taken in August 2001, (b) Landsat TM image taken in October

1989, (c) a Digital Elevation Model (DEM) with a 30x30m resolution, (e) 1:100000 topographical map taken in 1963. Erdas Imagine 8.4 and ArcGIS 9.2 software were used. The Mahalanobis distance method and other methods are used in the research. Also supervised and unsupervised classification was done to study various land use/land cover changes. The result of the classification for 1989 shows that the majority of the study area was covered by forest, with an area of approximately 344004.5ha or 42.7% of the entire soum. The second landuse type, in terms of area covered by the various types of grassland, with an area 382258ha or 47% of the of the entire soum area. Finally, sand area, bare, the two of which together cover of the entire soum area (11%). For the year 2001 the classification shows that forest 361428ha (45%), types of grassland 334094ha (42%), sand and degradation areas 76081ha (9%), and bare land 32322 ha (4%).