



Analysis of land use based on RS and GIS in Lanzhou

J. Sun and J. H Wang

Cold and Arid Regions Environmental and Engineering Research Institute , Chinese Academy of Sciences, Lanzhou,
China(jsun08@hotmail.com)

Abstract: The present landuse will be the foundation of overall general planning. The development of RS and GIS technology made the breakthrough in the qualitative, quantitative and visual study of landuse. The complex natural environments have decided the diversity of land use type in Lanzhou. This research took SPOT-5 and the SPOT-4 images in 2005 with high resolution as the background information source, considering meteorological data of 1951~2003 year and surface measured data. The informations of landuse type were extracted by the man-machine interaction method. This paper gave some explanations about present landuse from the nature and the human activities, according to type structure and spatial distribution of landuse. The results indicated that the types including 6 main classes, 23 subtypes, mainly have the farmland, the forest land, the lawn, the waters, the buliding land and the unused land. The percentage of every main calss in the total area respectively was 25.88%, 1.43%, 65.44%, 1.40%, 3.14% and 2.71%. The farmland mainly distributes in the river valley terrace and is on the gentle slope of the hill and the plateau of the loess hill, while the areas of the slope farmland is large. The terraced fields and the valley fields are the main objects in the farmland transforms. The majorities of forest lands mainly distribute in northeast and the southeast mountainous with second growths primarily. The lawns which include the natural low cover lawn primarily, mainly distributes in the mountains and the steep slope of hill and the interstream flat. The waters distributes on the plain, ravine and gulch between mountains. The buliding land mainly distribute on the valley basin, the second-level terrace and the platland of hill. Unused land which has the bare land (degree of vegetation cover <5%) for the most part, distribute primarily on the arid intermountane gentle slope and the hill. The Two factors decide the formation of landuse , which are the natural factor and the human factor. They decided the type constitutions and the distributions of landuse in Lanzhou. The multi-factor superimposition including the nature and the artificial perturbations caused the present landuse.