Niharika, Geoinfor Geostat: An Overview 2020, 8:4

DOI: 10.37532/gigs.2020.8(4).267

Geoinformatics & Geostatistics: An Overview

Review

A SciTechnol Journal

# Study of Geographical Management on Tirupathi Land usage Detection by Using GSI Remote Sensing Technology

**Niharika Dvivedi ***

**Keywords:** Remote sensing; Land use/land cowl; Agriculture; Environments; Eco-environment

In Urban surroundings natural and human-induced surrounding Sal changes are of concern nowadays as a result of deterioration of environment and human health [1]. The study of land use/land cowl (LU/LC) changes is incredibly vital to possess correct designing and utilization of natural resources and their management [2]. ancient ways for gathering demographic knowledge, censuses, and analysis of environmental samples aren't adequate for multicomplex environmental studies [3], since several issues usually bestowed in environmental problems and nice complexness of handling the multidisciplinary knowledge set; we have a tendency to need new technologies like satellite remote sensing and Geographical data Systems (GISs). These technologies offer knowledge to check and monitor the dynamics of natural resources for environmental management [4]

Remote sensing has become a crucial tool applicable to developing and understanding the world, physical processes moving the world [5]. Recent development within the use of satellite knowledge is to require advantage of accelerating amounts of geographical knowledge out there in conjunction with GIS to help in interpretation. GIS is AN integrated system of constituent and package capable of capturing, storing, retrieving, manipulating, analyzing, and displaying geographically documented (spatial) data for the aim of aiding development-oriented management and decision-making processes. Remote sensing and GIS have coated wide selection of applications within the fields of agriculture, environments, and integrated eco-environment assessment. many researchers have centered on LU/LC studies as a result of their adverse effects on ecology of the realm and vegetation.

Present study space witnessed speedy development throughout past decades in terms of urbanization, industrial enterprise, and conjointly population increase considerably. the most objective of this paper is to discover and quantify the LU/LC in a geographic area, Tirupati, from 1976 to 2003 mistreatment satellite imagination and geographics map

***Corresponding author:** Niharika Dvivedi, Department of Geography, University of Andra, India. E-mail: niharikadvivedi@gmail.com

**Received:** August 10, 2020 **Accepted:** September 10, 2020 **Published:** September 17, 2020

The study space, Tirupati region, is found near the metropolitan town, Chennai, at a distance of regarding in southern ground Bharat. Tirupati may be a world-famous holy pilgrim place for devotees of Lord Sri Venkateswara is set in Chittoor district of Andhra Pradesh (AP) state at AN altitude of 182.9 m (13.05°N latitude and seventy-nine.05°E longitude) that represents AN geographic area encircled by major industrial and agricultural activities alongside dense forest. The city space owes its existence to the sacred world-famous temple of Lord Sri Venkateswara set on the seven hills (Tirumala) conterminous it. the full population of Tirupati region is regarding three, 09,000 consistent with 2001 census of Bharat. Industrial activities have conjointly impact on the pollution levels. the foremost industries ar placed heavily at Tirupati industrial space set at the east near Renigunta

The study space covers several water streams, majorly the Swarnamukhi geographical area. All the streams together with the Swarnamukhi stream are passing and rise from the Tirupati hill ranges. The annual downfall throughout the study amount is 899.8 mm with total variety of forty-three events, during which the best downfall in July (340.6 mm) and also the lowest in Apr (5.6 mm). The streams, whereas flowing from the upland to lowlands, type steeply cleft valleys usually coated with boulders, showing striations. The surface runoff in most of the streams is restricted to a couple of hours when the rain, whereas within the Swarnamukhi and Rallakalva Rivers, the flows last for a couple of days to a couple of weeks when the rain. Most of the year, they're dry.

In the gift study we've got used chiefly 2 styles of knowledge. These are geographics map and remote sensing knowledge. The remote sensing knowledge of georeferenced and unified knowledge of LISS III and PAN of authority ID of 2003 within the digital mode are obtained from the National Remote Sensing Agency (NRSA), Government of Bharat, Hyderabad, and used. The spatial resolutions of LISS III and PAN are twenty-three.5 and 5.8 meters, and spectral resolutions are four and one meters, severally.

The geographics map fifty-seven O/6 (1:50,000 scale) is obtained from the Survey of Bharat, Hyderabad, that was surveyed and ready in 1976; it's born-again to digital mode mistreatment scanning. The geographics map is georeferenced with meridian and latitudes mistreatment the ArcGIS package and spatial analyst tools and demarcated the boundary of study space.

A supervised signature extraction with the utmost probability rule was used to classify the digital knowledge of authority 1D georeferenced and unified LISS III and PAN for land use/land cowl mapping for the year 2003. Before the pre-processing and classification of satellite imagination began, an in-depth field survey was performed throughout the study space mistreatment world Positioning System (GPS) instrumentality. This survey was performed so as to get correct locational purpose knowledge for every land use and land cowl category enclosed within the classification theme still as for the creation of coaching sites and for signature generation.

The satellite knowledge was increased before classification mistreatment bar chart deed in ERDAS Imagine eight.7 to boost

*doi:* 10.37532/gigs.2020.8(4).267

the image quality and to realize higher classification accuracy. In supervised classification, spectral signatures are developed from such that locations within the image. These such that locations are given the generic name "training sites" and are outlined by the user. Generally, a vector layer is digitized over the formation scene. The vector layer consists of varied polygons overlaying completely different land use varieties. The coaching sites can facilitate to develop spectral signatures for the made public areas

The land use maps pertaining of 2 completely different periods were used for post classification comparison, that expedited the estimation of changes within the land use class and dynamism with the changes. Post classification comparison is that the most ordinarily used quantitative methodology of modification detection with fairly sensible results. Post classification comparison is usually brought up as "delta classification" It involves severally made spectral classification results from completely different knowledge sets, followed by a pixel-by-pixel or segment-by-segment comparison to discover changes within the categories. The careful methodology adopted

## Conclusion

There is vital enlargement of settled space detected. On the opposite hand, there's decrease in agricultural space, water unfold space, and forest areas. This study clearly indicates the numerous impacts of population and its development activities on LU/LC modification.

This study proves that integration of GIS and remote sensing technologies is effective tool for urban coming up with and management. The quantification of LU/LC changes of Tirupati space is incredibly helpful for environmental management teams, policy manufacturers and for public to higher perceive the encircling.

## References

1. Jat M, Garg P, Khare D (2008) "Monitoring and modelling of urban sprawl using remote sensing and GIS techniques" International Journal of Applied Earth Observation and Geoinformation,10:26–43
2. Asselman N, Middelkoop H (1995) "Floodplain sedimentation: quantities, patterns and processes" Earth Surface Processes & Landforms, 20:481–499
3. Maktav D, Erbek F, Jürgens C (2005) "Remote sensing of urban areas" International Journal of Remote Sensing,26:655–659
4. Robles C, Ruiz A (2002) "Land use mapping and change detection in the coastal zone of northwest Mexico using remote sensing techniques" Journal of Coastal Research,18: 514–522
5. Hudak A, Wessman C (1998) "Textural analysis of historical aerial photography to characterize woody plant encroachment in South African Savanna" Remote Sensing of Environment, 66:317–330

***Author Affiliation*** Top

*Department of Geography, University of Andra, India*