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SPATIO-TEMPORAL ANALYSIS OF LAND USE IN HASSAN DISTRICT (KARNATAKA STATE): USING GEO-INFORMATICS

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ABSTRACT

Land utilize and Land cover data is a pre-essential for ideal land utilize arranging from a bigger term insightful. With the end goal to utilize arrive utilize ideally, it isn't just important to have the important to have the data on existing area utilize yet additionally the ability to screen the elements of land utilize coming about out of changing requests of expanding populace. In the ongoing years both remote detecting and geographic data framework have been utilized to obtain data of land use\land cover. The GIS innovation has a more prominent pertinence with regards to different uses of regular assets mapping and checking. The Hassan region starts at base of the Western Ghats and proceeds in to the tenderly moving Deccan level. The two noteworthy physiographic districts are steep Western Ghats and eastern fields with infrequent slopes. The dirts of Hassan are red sandy soils, laterite soils and dark cotton soils, Dharwad schist's and stone gneiss are two noteworthy shake types found in the examination territory.

The philosophy received land utilization of Hassan area was produced by computerized approach Geo-referencing of satellite information with deference of SOI Topo-maps and advanced order, relevant, refinements and stratification.

The investigation territory situated in the South Western piece of Karnataka State, the locale arranged between 120 31' and 130 31' North scope and 750 33' to 760 38' East longitude. The present examination goes for Spatio-Temporal Analysis of Land Use in Hassan District, Karnataka: Using Geo-Informatics.

Remote detecting change recognition is a procedure of deciding and assessing distinction in an assortment of surface wonders after some time. Changes can be controlled by contrasting otherworldly reaction contrasts at the equivalent spatial area among an arrangement of at least two multispectral information procured at various occasions. Land utilize/arrive cover classes, for example, developed land, horticulture arrive, badlands, water bodies and others have been grouped at level 1. These dimension 1 classes have been additionally ordered into level 2 and level 3 classes according to the rules given under NR-Census.)

KEY WORD: *procedure of deciding and assessing distinction , geographic data framework.*

INTRODUCTION

Land use\Land Cover is a requirement for asset arranging, social headway and also generally monetary improvement of a country. The possibility of a locale relies on the scale (broad or

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concentrated) of utilization of the land. The broad utilization of land reflects such highlights as scanty populace, scattered settlement, undesirable living, agro-based economy and poor transport arrange where as the concentrated utilization of land reflects thick populace, sound agrarian generation, modern foundations, very much created correspondence organize and so on anyway monetary and social headway can more readily be brought out just through the methodical and adjusted use of land (i.e. to address the abuse, underuse and abuse of land). Therefore one can't think about any advancement without appropriate and ideal utilization of land. Thus, the land utilize examine is of massive incentive for human sustenance. Land-utilize order is the methodical course of action of different class of arrive based on certain comparative qualities, for the most part to recognize and comprehend their essential utilities astutely and viably in fulfilling the necessities of the general population. The examination region is an ordinary precedent where steady push of Man's monetary exercises extraordinarily changes the physical scene to the point of being unrecognizable. The general land-utilize example of the region must be found in the light of its general characteristic and evolving financial conditions. The example of land-use in the examination region is essentially controlled by the physical perspectives like alleviation, soil type and south-west Monsoon. Certain varieties and exceptional parts of the monsoonal atmosphere have centrality from the perspective of product arrive utilize design. The measure of precipitation appropriation applies effect on various examples of product arrive utilize. Yet, the help and the precipitation have their unmistakable bearing on the woodland arrive utilize design. The west zone is related with the economy of rice, areca nut, coconut and evergreen woods, while the locales of substantial to direct precipitation have advanced more mind boggling crop creation and rural economy, in light of rice, millets and organic product planting affected by soil and atmosphere.

The general form of the zone, its alleviation, geography, atmosphere and soil have been in charge of offering ascend to wide land-utilize zones like the developed land, desolate the cultivable land, woodland arrive, pastures and so on. The human and monetary components have affected the augmentation of repayment regions, transportation lines, the neglected land and the stage and rate of farming advancement and its power.

In the ongoing years both remote detecting and geographic data framework have been utilized to secure data of land use\land cover. The GIS innovation has a more prominent importance with regards to different utilizations of regular assets mapping and checking.

REGIONAL SETTING OF THE STUDY AREA

Hassan area named after its base camp city of Hassan, is one of the 27 areas of Karnataka state. The area is situated in the south-western piece of the state. The locale, arranged between 12 31' and 13 33' north scope and 75 33' to 76 38' east longitude. The best length of the locale, from north to south is around 129 km and its most noteworthy expansiveness, from east to west is around 116 km, spreading over an aggregate topographical zone of 6845 sq. km which positions second in region among the 27 regions. The locale is encompassed by upwards of seven region of Karnataka state.

The locale is limited on the north by Chikmagalur region, on the east by Tumkur and Mandya areas, on the south by Mysore and Coorg regions and on the west by Dakshinakannada and Udupi regions. Hassan area comprises of eight taluks viz., Hassan, Arasikere, Holenarasipura, Channarayapatna, Sakeleshapura, Alur, Belur and Arkalgud situated in a degree of 6845 sq. km. Hassan locale comprises of 38 hoblies, 2379 habited towns, and 910 villas. The number of inhabitants in the locale according to 2001 evaluation is 17,21,319 out of which 14, 16,579 is country populace and 3,04,740 is urban populace. The thickness of populace per sq. km is 230.

Hassan area has three vital waterways in particular the Cauvery, Hemavathi and Yagachi. While the Hemavathi is a tributary of the waterway Cauvery and Yagachi is a tributary of the Hemavathi.

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INDEX MAP OF THE STUDY AREA

Methodology: land use/land cover map of Hassan district was generated by digital approach.

Multi-date Remote Sensing for Land Use/Land Cover Change:
Hassan District

The philosophy pursued comprised of
1. Geo referencing of satellite information as for SOl topomaps,
2. Digital grouping with a trio of regulated order, logical refinements and stratification (visual based),
3. Generation of land utilize/arrive cover maps of periods 1996-97 and 2001-02.
4. Change examination to produce arrive utilize/arrive cover change outline spatial displaying strategies,

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OBJECTIVES OF THE STUDY

The following are the objectives of the study.

1. The present investigation is at first worried about a geological examination of the physical and General Land use\Land Cover of the district.
2. To investigation taluka-wise land use\land cover.
3. Land utilize/arrive cover classes, for example, developed land, horticulture arrive, badlands, water bodies and others have been arranged at level 1. These dimension 1 classes have been additionally grouped into level 2 and level 3 classes according to the rules given under NR-Census.

The significant land utilize/arrive cover classes are depicted beneath. The maps produced under land utilize/Land cover subjects are

- land utilize/arrive cover guide of Hassan area - 1996-97 (Fig 1)
- land utilize/arrive cover guide of Hassan locale - 2001-02 (Fig.2)
- land utilize/arrive cover guide of NR 57C/04 - 1996-97(Fig 3)
- land utilize/arrive cover guide of NR 57C/04 - 2001-02 (Fig. 4)
- land utilize/arrive cover change evaluation of Hassan area for the period 1996-2002 (Fig. 5)
- Satellite information delineating urban changes of Hassan locale for the year 1998 (Fig6)
- Satellite information delineating urban changes of Hassan area for the year 2002 (Fig 7

NATURAL VEGETATIONS

In Hassan locale, we have Evergreen/Semi-evergreen backwoods in theWestern Ghats region. The distinctive woodland types that have been mapped are Evergreen/Semi-evergreen, Deciduous (soggy/dry/prickly), clean timberland and backwoods ranches. Backwoods limits were digitized utilizing 1:250,000 and 1:50,000 scale SOI topo sheets.

The aggregate territory under timberlands in the locale is somewhat more than 510 sq km, in this way the level of the woodland region to the aggregate region of the region is just about 7.5, which is far beneath the state normal of 18.4 percent. Be that as it may, as per the national woods strategy, the backwoods territory ought not be under 1/3 percent, the limit being 20 percent on account of lady territories and 60 percent in regard of maland regions. The areas commitment to the aggregate backwoods zone of the state is just 1.5 percent. The central wellsprings of backwoods income in the area are the sandalwood and some other delicate and hard woods abused for business purposes. Furthermore, there are likewise minor backwoods items like thangadi and kakke barks, tupra leaves, myrobalans, gum, nectar and waz, tamarind, honge seeds, bark of gulmarver and cinnamon, sticks and to a specific degree, bamboos from the evergreen, which additionally add to the woodland income of the region.

Vegetation: The Hassan area has a rich and changed verdure. Major contributing elements to this assortment are the distinctions in precipitation and geology inside the locale. A few regions of the eastern maidan, a piece of the Deccan level, may get a normal precipitation of under 150 mm. while the western bumpy malnad gets around 2500 mm amid a similar period. There is along these lines, a fast change from clean to the storm woodlands as one move from east to west. The mediator phases of dry deciduous west deciduous and semi-ever green from a persistent example as the precipitation increments and the level separates into the elevated pinnacles and profound valleys of the Western Ghats.

Woods: Forests assume a critical job in the financial existence of the general population of the region; they secured about 71.5 percent of the aggregate zone of the locale in 1996-97 or 1.5 percent of the aggregate zone under backwoods in the state.

The western parts of the area framing a segment of the Western Ghats are dressed with eminent virgin backwoods. A portion of these woodland tracts along the slants of the valleys have been taken up for Coffee and Cardamom development, yet they are scanty towards the east. They apply aberrant effect on the

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atmosphere, direction of dampness, counteractive action of soil disintegration and furthermore the richness of the dirt.

Deciduous timberlands (Dry/Moist/Thorny): Dry deciduous backwoods are found in eastern fields and broad stretches are seen in Hassan and Arasikere taluks. The vast majority of these deciduous woodlands are put to changed land use with Eucalyptus and Acacia manors. Fundamentally deciduous sort of woods is seen inside semi-evergreen woodlands along the lower heights in the Western Ghats area. Multitemporar satellite information changed in accordance with phonologic cycle (Kharif and Rabi) of prevalent species helps in segregation of these woodland zones. The zone under this class is assessed as 14162.26 hectares amid year 1996-97 and 17576.77 hectares amid 2001-2002.

REFERENCE
1. Ali Mohammed (1978), 'Studies in Agricultural Geography', Rajesh Publications, New Delhi, 1978, pp-1-6.
2. Nageswara Rao.K (2003)Remote Sensing and GIS Applications in the Identification of Aquaculture Hotspots at Village Level Journal of the Indian Society of Remote Sensing, Vol. 31, No. 2.
3. Nageshwara Rao K. and Vaidyanathan R. (1981), 'Landuse capability studies from Arial Photo-Interpretation -A case study from
4. Krishna Delha', India Geographical Review of India. Vol.43,
5. Vink, A. P. A. (1975): 'Land use in Advancing AgriculturalSpringer Verlag Berlin', Heidelberg, New York.
6. Kumar J. (1986),'Landuse Analysis : A case study of Nalanda District', Bihar Inter-India Publications New Delhi-p.1.

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