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Land Use – Land Cover: An Appraisal Study of Agriculture In Kanakapura Taluk, Ramanagara District-Karnataka

*Dr. Nagaraja. M.
M. Sc, Ph.D. Assistant professor, kghallinag@gmail.com
**Prof. B. N. Yaligar.
M. A, M. Phil, (Ph.D) Assistant professor, bnyaligar@gmail.com
***Prof. D. A. Kolhapure.
M.A. Associate professor, Kolhpuredeepak7@gmail.com
Dept. of Geography, KLEs. G H College, Haveri. Karnataka, India -581110

Abstract:

Land use and land cover (LULC) is one of the most important methods to understand how the land was used in the past. Kanakapuar taluk is one of the backward taluks according to D M Nanjundappa report. The study area is 56 kilometers from Bengaluru, capital city of Karnataka State. Hence, more Agriculture, economic and industrial development has been dominated in the study area. Therefore, analyses of the land use are essential. The most conspicuous areas of very high and very low area of the taluk are located at 600 and 900 meters in the study area of contour lines above the mean sea level respectively. What types of plans are to be expected in the future, as well as the driving forces and processes behind these changes? Besides natural variations, the increasing human population is driving modifications of the Earth's land surface that are unprecedented, and evidence is present on a global scale. Therefore, there is the need for better evaluation of changes in the land cover (namely, the bio-physical attributes of the Earth's surface) and land use for human purposes to understand the past variations and depict future trends for the coming decades. The land use describes the use of land by the people for different activities, such as recreation, housing, agriculture, educational institutions, etc. At the same time land cover describes the physical features covering the land such as vegetation, water and mountains etc, which are naturally covered. In terms of geography, the prominent features of Kanakapura are the extensive hills, mountains in the plateau region.

Key Words: Human population, Land use and land cover, Agriculture, Bio-physical

Introduction:

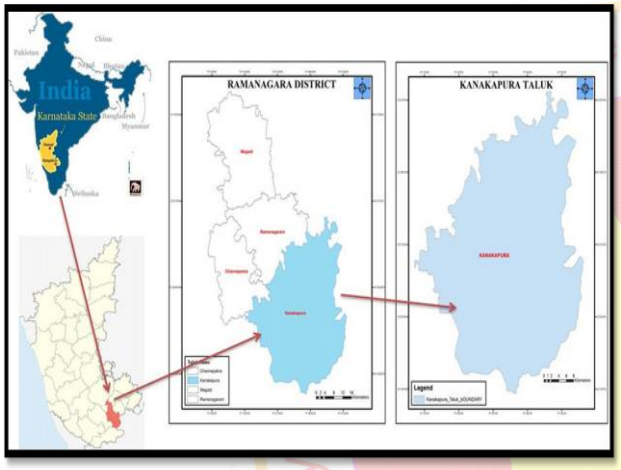
Land use land cover (LULC) dynamics are a well-known, accelerating, and substantial process, mostly driven by human activities, that is contributing significantly to forest fragmentation, land degradation, and biodiversity loss. Land use for human purposes to understand the past variations and depict future trends for the coming decades. Similar to the rest of the karnataka, Kanakapura in Ramanagara district is not an exception to these land use land cover changes. In particular, very rapid changes are clearly recognizable in kanakapura, due to the population pressure, resettlement programs, climate change, and other human and nature-induced driving forces. Similar to other countries, anthropogenic activities are the most significant factors adversely changing the natural status of the Ethiopian landscape involving detrimental and adverse impacts on the natural environment and livelihood.

Geographers are very much interested to know such landscapes. The surface has been giving rise to a broken and rugged topography, and the hills get closer. The lands are covered with denser vegetation and the general level declines as one moves south towards the Cauvery River. A range of hills formed of coarse grained granite is a prominent topographic feature. The hills are usually boulder strewn and covered with scrub jungle. In some places granitic hills abruptly rise from the surrounding plain forming conspicuous landmarks.

Location and Extent of the Study Area:

Kanakapura taluk is one of the forth taluk in Ramanagara district, situated in south eastern part of the district. Kanakapura is located at 12° 33′ north - 12° 55′ North latitudes and 77° 25′ east ° 42′ East longitudes. It has an average elevation of 638 meters from MSL. Kanakapura is situated 56 km south to

Bangalore and 26 kms from Ramanagara on the Arkavathi river bank. Kanakapura taluk takes its name from Kānikāranhalli, Kanakanahalli finally Kanakapura. Kanakapura is a part of the Southern Karnataka Plateau, and is located in the South-eastern corner of Karnataka State. It has the greatest extent of 137 Kms from North to South and 97 kmsfrom East toWest, covering a total geographical area of 1594.00 Sq. km. It is the largest taluk Karnataka state, the largest Loksabha Constituency in India.



Objectives of the Study:

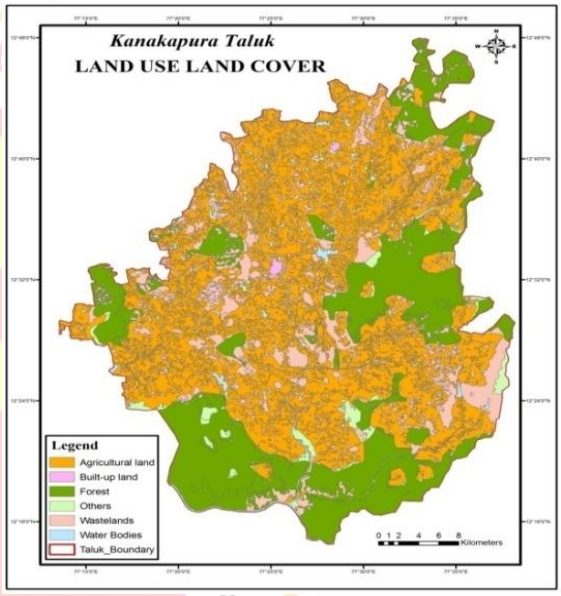
The main objectives of the present study is followed

- To understand the actual land cover in the study area
- To evaluate the land use for agriculture and other activities
- To promote the future plan for land utilization

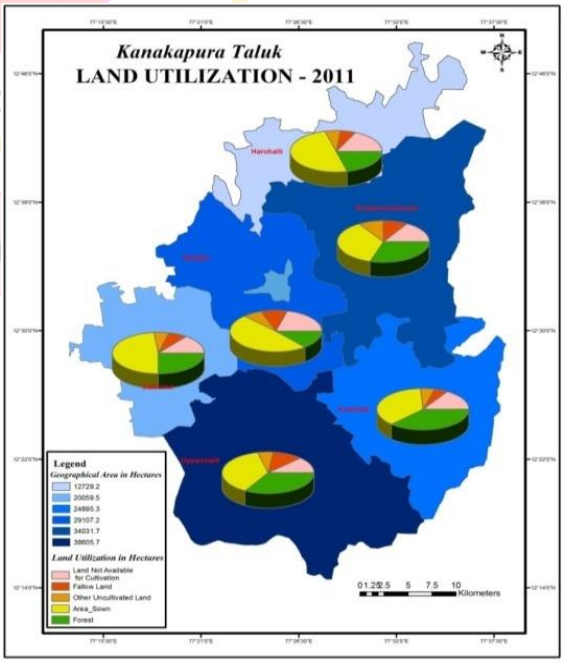
Methodology:

The present work is based on the primary data i.e. Field observation by visiting the study area and secondary data collected from various government departments in the taluk and district level. The data was classified hobli-wise in the Taluk level, Eradas software is used for maps construction. The present work is based on a reviewed articles published which were focused on the issue of land use land cover change in Karnataka state.

The need for agricultural development in Kanakapura taluk assumes greater importance because the area has been effectively utilized for agriculture and this is the main occupation of the people. Kanakapura, like other taluks of the Ramanagra district, is basically as an agricultural and rural based area. Agriculture is the mainstay of Kanakapura taluk's economy. Directly or indirectly it gives an employment to more than 47 percent of its population and 86 percent of the total working population *(Fig-1).* Despite limited irrigation facilities and precarious rainfall, the people of the area are able to cultivate hardly cereals, pulses and oil seeds. The agricultural development in this area is a testimony of the brave gallant people who have survived and conquered the natural hazards like droughts.



Land Use and Land Cover in Kanakapura Taluk



Hobli-Wise Land Utilization Kanakapura Taluk

Land Utilization – Classification of Land

Land is a primary important source of production. Physical attributes and socio-economic structure no doubt, put a stamp upon its use pattern. The land use and crop distribution pattern indicates a greater influence and control imposed by rainfall distribution, physiographic and soil conditions. Land use is central to all discussion of land problems and policies. Present land-use is the result of different causes. Many of which are directly related to nature and quantity of land resource, others have their origin in cultural, social and economic conditions of the past in the study area. In this way existing settlement pattern, population, socio-techno-economic variables, infrastructural facilities and living standards are the main determinants of land utilization. Its significance is further increased in Kanakapura taluk whose economy revolves around agriculture. Agriculture land use is the dominant structure of the resource base in Kanakapura taluk.

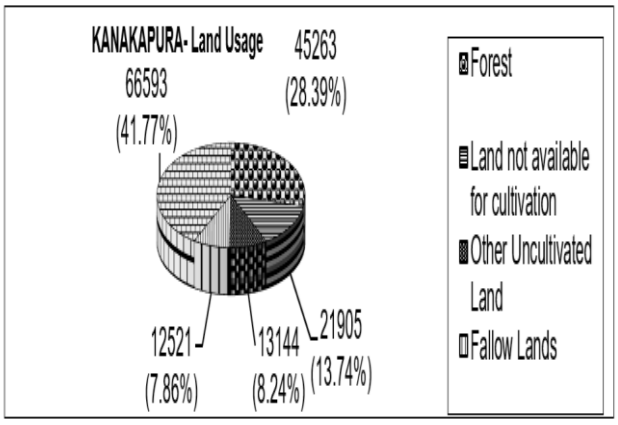
Land Utilization in Kanakapura Taluk

(Area in Hectares)

Description	Kanakapura Taluk		Bangalore (R) District	Ramanagara District	Kanakapura taluk percentage to the district	
	2001	2011			Bengaluru 2001	Ramanagara 2011
Forest Land	45263 (28.39%)	45263 (28.39%)	81268	69946	55.69	64.71
Land not available for cultivation	21905 (13.74%)	22000 (13.80%)	94003	50564	23.30	43.51
Other un-cultivated land	13144 (8.24%)	13144 (8.24)	53022	29790	24.79	44.12
Fallow lands	12521 (7.86%)	16291 (10.22%	50730	37370	24.68	43.59
		)				
Net Area Cropped	66593 (41.77%)	62728 (39.35%)	306408	172380	21.73	36.39
Total Geographical Area	159426	159426	585431	355912	27.23	44.79

Source: Raita Samparka Kendra, District Statistical Office, Ramanagara-2001.

The secondary data of different category of land utilization is collected from the Raita Samparka Kendra (formers contact center) in six hoblis and Agriculture office Kanakapura. The data of land-use have been classified into five categories i.e., i. Forest land, ii. Land not available for cultivation, iii. Other un-cultivated land, iv. Fallow lands and v. Net Area Cropped. Quite a large part of area of the taluk 41.77% (2001) is under cultivation, it is decreased to 39.35% by 2011. Much of the area has been converted into residential sites- this is impact of urban shadow of Bangalore. 13.74% (2001) of land is under land not available for cultivation; it is slightly increased to 13.80% (2011). This is because heart of Karnataka has occupied and restricted for different purpose. Fallow land is 7.86% (2001) and it increased to 10.22% (2011). While there is no changes in the forest land and other un-cultivated land during a decade. 28% falls under forest land, 8.24% other un-cultivated land in the study area.



Land Utilization in Kanakapura Taluk, 2001

Hobli-Wise Land Utilization

The pattern and intensity of land resource is seen in the study unit through the distribution of cultivated land, which is outcome of the early strata of agricultural practice, dependency and population pressure combined with physical factors. It is interesting to compare the agricultural land among all the hoblis of the taluk.

FORESTS*:* The importance of forest lies in its capacity to meet a large human wants. Forests supply men with wood to make weapons, to have fire and to build houses etc. The forest occupies 45263 hectares (2011) forming 28.39 percent of the total geographical area of 159426 hectares in the taluk. Land under forest found largely in Uyyamballi, Doddamaralawadi and Kodihalli hoblis and less forest area found in kasaba hobli.

NET SOWN AREA: Net sown area or cropped area is the land which is being actually tilled for raising any type of crop like food and cash crops or fodder etc. It has considerable variation in a decade. The Net area cropped has been decreased from 41.77% in 2001 to 39.35% in 2011 census to the total geographical area in the taluk. In the study area, high concentration of cultivated land is found in kasaba hobli 14238.34 hectares (22.70%) followed by Uyyamballi (20.93%), Doddamaralawadi (17.46%), and Sathnur (15.31%). It is because of irrigation facilities and vast geographical area. The lowest area under cultivation is found in Kodihalli (13.48%) and Harohalli (10.13%). It is because of its hilly topography and lowest geographical area.

NON-AGRICULTURAL LAND*:* Area under non-agricultural land is included land occupied by settlements, roads and canals are occupies 4.75% of the total area. The maximum land under non-agricultural use is found in Kanakapura (29.51%), followed by Kodihalli (19.62%), Uyyamballi (16.10%) and the minimum is found in Sathnur (11.18%) to the total area of non-agricultural land use of the study unit.

Hobli-Wise Land Utilization-2011

(Area in Hectares)

Hoblis	Geographical Area	Land not available for cultivation		Fallow Land	Other uncultivated land			Area Sown	Forest
		Non-Agricultural land	Barren land		Cultivable-waste	Permanent pasture	Trees and groves		
Kanakapura	291007.16	2236.14	3447.44	3674	31	2157		14238.34	3304.24
Harohalli	12729.18	920.42	1088.06	899	25	926		6352.20	2501.50
Maralawadi	340311.66	1220.34	3513.35	3838	36	3746		10951.52	10692.45
Kodihalli	24895.32	1486.76	1886.10	1437	35	1669		8453.59	9896.87
Uyyamballi	38605.71	867.20	2942	4847	32	2909		13127.34	13858.66
Sathnure	20059.48	847.14	1545.05	1596	31	1407		9605.01	5009.28
Total 2011-12	159426.51	7578	14422	16291	190	12814		62728	45263
Total 2001-02	159426.51	7558	14347	12521	190	12814		66614	45263

Source: District Statistical Bureau, Ramanagara, 2011.

CULTIVABLE WASTE: The land continuously idle at least for the last ten years is called cultivable waste or unfertile land. Highest waste land found in Daddamaralawadi 36 hectares and Kodihalli 35 hectares and lowest is in Harohalli hobli 25 hectares. The cultivable land of each hobli of the taluk can be ploughed after reclamation. The record of cultivable waste in the study areas shows that it accounts to 0.12 percent of the total area of the taluk.

PERMANENT PASTURE AND GRAZING LAND*:* Permanent pasture and grazing land include all such land which is under grass cover owned by Government or private owner. These may be permanent pasture which is kept reserved as village having common grazing ground and the unreserved grass lands where the cattle of any locality are allowed for stray grazing. The land under this category occupied 12814 hectares (8.04%) of the total area in 2011. The highest area is found in Doddamaralawadi (29.23%), Uyyamballi (22.70%), kasaba (16.83%), Kodihalli (13.02%) and Sathnure (10.98%). The lowest is found in Harohalli (7.23%). The land in this category directly influences on animal husbandry.

FALLOW LAND*:* It consists of two categories, i.e., current fallow (5901 hectares) and other than current fallow land (10390 hectares). The fallow land comprises about 16291 hectares (10.22%) in 2011, but it was 12521 hectares (7.86%) in 2001, it is an increasing trend during a decade. The reason is obvious. Yet natural calamity is the main cause for such occurrences in the study area. The highest current fallow land is found in Uyyamballi (29.75%), Doddamaralawadi (23.56%), kasaba (22.55%), Sathnure (9.80%). The lowest is land under fallow is found in Kodihalli (8.82%). The fallow land can be converted into potential land resource for forest development through plantation method. Current fallow land indicates the land left fallow during the current year only and other than current fallow means land left fallow temporarily out of cultivation for a period of not less than one year and not more than five years.

BARREN LAND*:* It consists about 9.00 percent (2001 census) and 9.05 percent (2011 census) of the total geographical area of the taluk. Maximum land under this category is found in Doddamaralawadi (24.36%), kasaba (23.90%) and Uyyamballi (20.40%). The minimum is found in Harohalli (7.54%) and Sathnur (10.71%) hobli.

Suggestion and Conclusions:

presents detailed accounts of Land use and land cover appraisal of agriculture resource. The study has been presented in three aspects: (i) Affecting constituents of agriculture, (ii) Cropping pattern, (iii) Regional imbalances in the food production. The minor irrigation dam constructed across the river Arkavathy at Arobele can be developed and utilize for agriculture through proper filtration method or by purifying because it is polluted by Bangalore sewage water through the river Rishabhavathy. Land use classification and their feature, the phenomenon intensified in the course of the last decade bringing about many changes in the taluk economy.

References:

1. **Zimmer mann(2007):**World Resource and Industries, Springer verlag, New York, p.147.
2. **Jordan T G and Rowntree, L (1976):** The Human Mosaic: A Thematic Introduction to Cultural Geography, Harper and Row, New York, p.271.
3. **Chouhan, T.S. (1992):** "Agricultural Geography", Academic publishers, Jaipur, p.169.
4. Arora, R.C. (1979): "Integrated Rural Development", S. Chand and Company Ltd., **Chouhan, T.S. (1997):** op.cit. p.167.
5. **Bariow Rand V. Webster Johnson (1974):** "Land problemsand policies", Mc Graw Hill Book Co., New York, p.99.
6. **Suresh Kumar pandey (2001):** "Resource Appraisal and Environmental change in Naugarh Block (Dist. Varanasi)", Unpublished Ph D Thesis, Banaras Hindu University, p.43.
7. **Mound Joy. L.B. (1972):** "Problems of Industrialization- an Egyptian Example, Indian Geographical society, p.21.
8. **Singh R.B. (2001):** Land Use and Land Cover Change, SciencePub.,Inc.,Enfield (NH), USA, and Oxford and IBH Pub,. New Delhi.
9. **Dayal, E (1968):** "Some Aspects of Agricultural Geography of Punjab Plains", Unpublished Ph D Thesis, Delhi University, Delhi, p.68.
10. **Johnson, B.L.C. (1958):** "Crop Association Regions in east Pakistan", Geography, Vol. XLIII, pp.86-103.
11. **Birmal Barah, (2004):** Impact of population factors on AgriculturalDevelopment in Jorhat District, Assam, The Deccan Geographer. 42 (2). pp.43-50.