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Land use classification of Thanjavur Taluk 2000-2007, Thanjavur District to apply the geographical information system

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ABSTRACT

In this study I have used land use classification of thanjvur Taluk, Thanjavur district, Tamil nadu. The years 2000-2007 to calculate how to changes of land use mainly in Thanjavur taluk, Thanjavur district ,Tamil nadu, I have employed GIS arc Info to digitize the maps and GIS-arc view to process the data combining with other analytical measurements to display the result.

Keyword: land use classification, Geographical information system, and some cartography models.

INTRODUCTION

Unplanned city growth is an indicator of rapid industrialization, which usually reduces the quality of the environmental health of a region - sometimes disastrously. Monitoring provides the planners and decision - makers with required information about the current state of development and the nature of changes that have occurred. In India as well as in most developing countries, the excessive growth in population and the increased trend towards urbanization have led to many evils such as haphazard growth of industries, unplanned housing and utility networks, conversion of precious Agricultural and forest land into urban land etc. Urban Land is one of the important resources provided to man by which necessary human activities are performed. Accurate and up to date information about the urban land is indispensable for scientific planning and management of urban resources of an area taking into consideration the potentials and the constraints to the environment. The rational planning and management of urban is possible through the regular survey of the land use helps in delineating land suitable for various activities.

MATERIALS AND METHODS

The present studies data have been collected on secondary data's. in This datas are collected in statistical department of Thanjavur district. The secondary data's collected are processed and summarized by using suitable to identify how to changes of land use classification Thanjavur Takuk. In these Changes has been analyzed by using suitable cartographic technique like simple graph, bar diagram and pie diagram etc. The data relating to the location maps are prepared by using GIS techniques.

To find out the land use classification of Thanjavur Taluk, Thanjavur district, Tamilnadu. From these 6 years statistical data's.

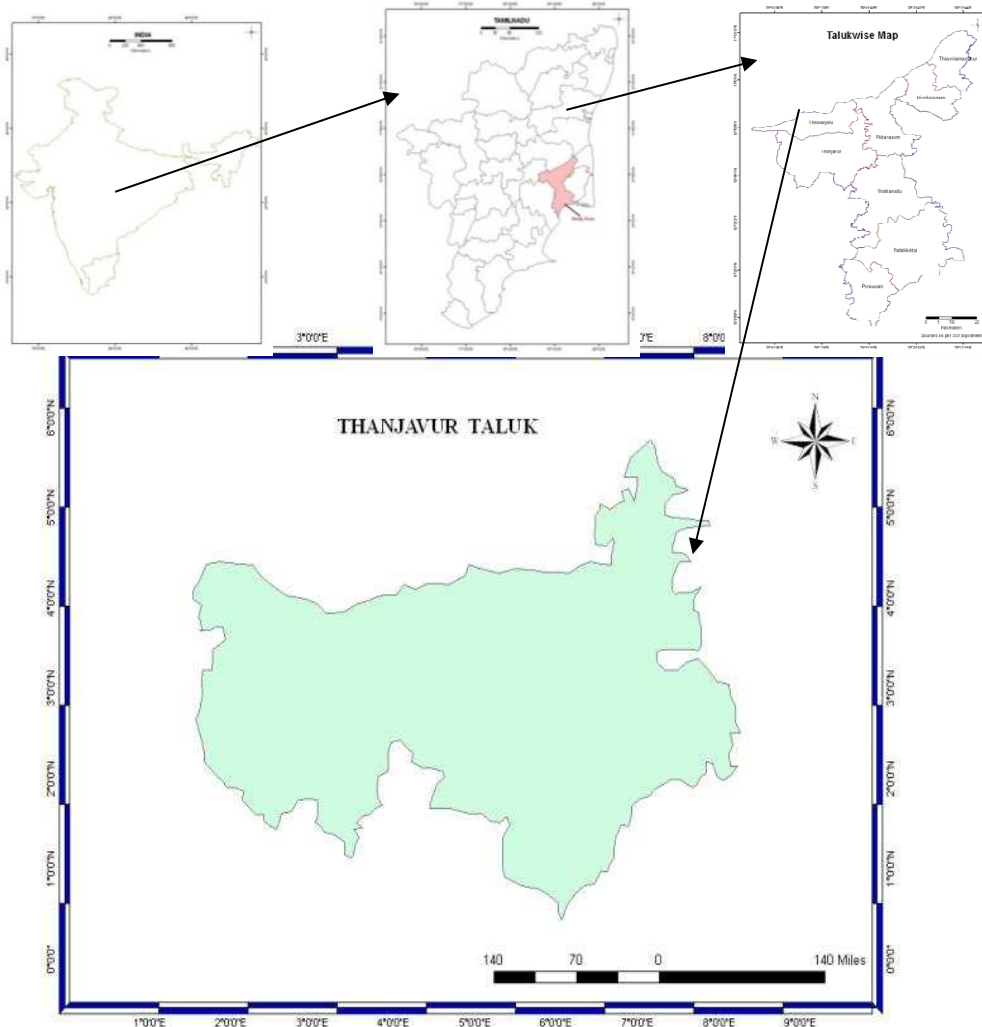
Methodology

- To collect the 6 years, statistical data's from the statistical department.
- From these data's to put the statistical method, to find out how to classified the land areas in Thanjavur Taluks.
- Then to apply the GIS software from theses final data's.
- And more to apply the cartography methods also.

Study Area

Thanjavur is located at $10^{\circ}48'N$ $79^{\circ}09'E$ / $10.8^{\circ}N$ $79.15^{\circ}E$ 10.8; 79.15 approximately in the centre of the Indian state of Tamil Nadu. The Thanjavur taluk is the center of the Thanjavur district. It's situated in western part of the Thanjavur district. In this Taluk located nearby Cauvery delta in this river is very used in the agricultural presses. The Taluk land use is differ from year by years. Because the lots of industrializations and non agricultural activities are gradually increased to high. But at the same time in this Taluk is the base of agricultural region. Thanjavur Taluk is located in north side Thiruvaiyaru Taluk, south side in Orathanadu taluk , eastern side Papanasam taluk and the western side Pudukottai District. The temperature varies from 22o C to 36o C. Divided into two distinct divisions, viz the Deltaic region and the Non-deltaic region, it spreads over an area of about 3396 sq km. The municipality has an area of about 36 km². The township and its exterior suburbs extend for an area of about 100 km². The town has an elevation of 57 meters above mean sea level. It is drained by the rivers Vadavar and Vennar in the north. Agriculture is the major occupation of the people. Paddy, sugarcane, coconut and plantain are the chief crops. It receives an annual rainfall of 845 mm. (Thanjavur district statistical office book-2006-07)

Study area –thanjavur taluk













**Land use classification of Thanjavur Taluk:**

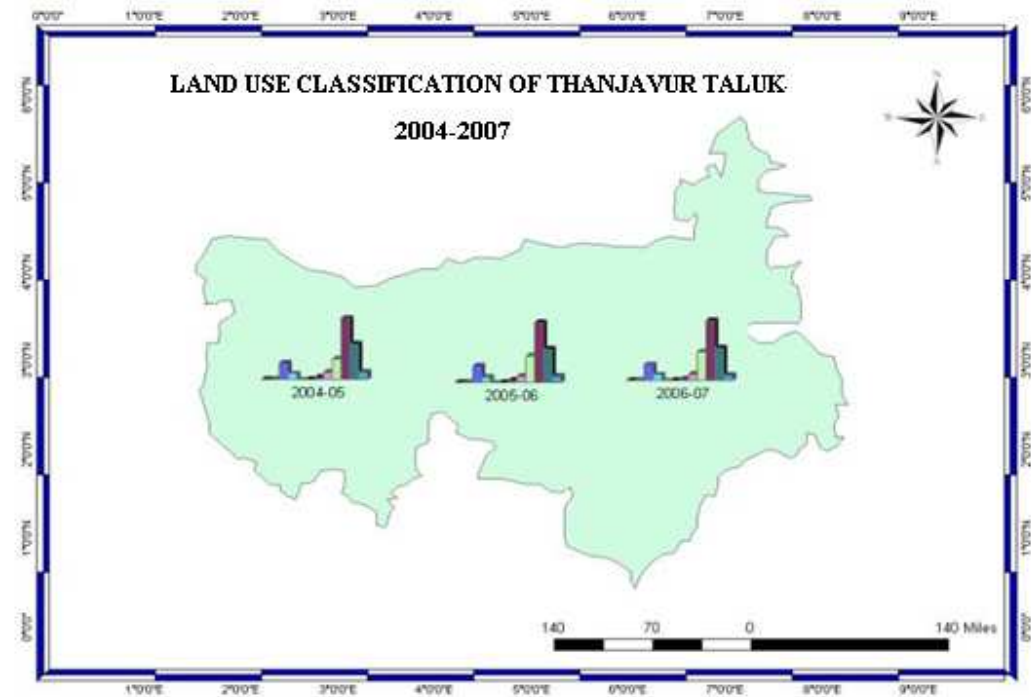
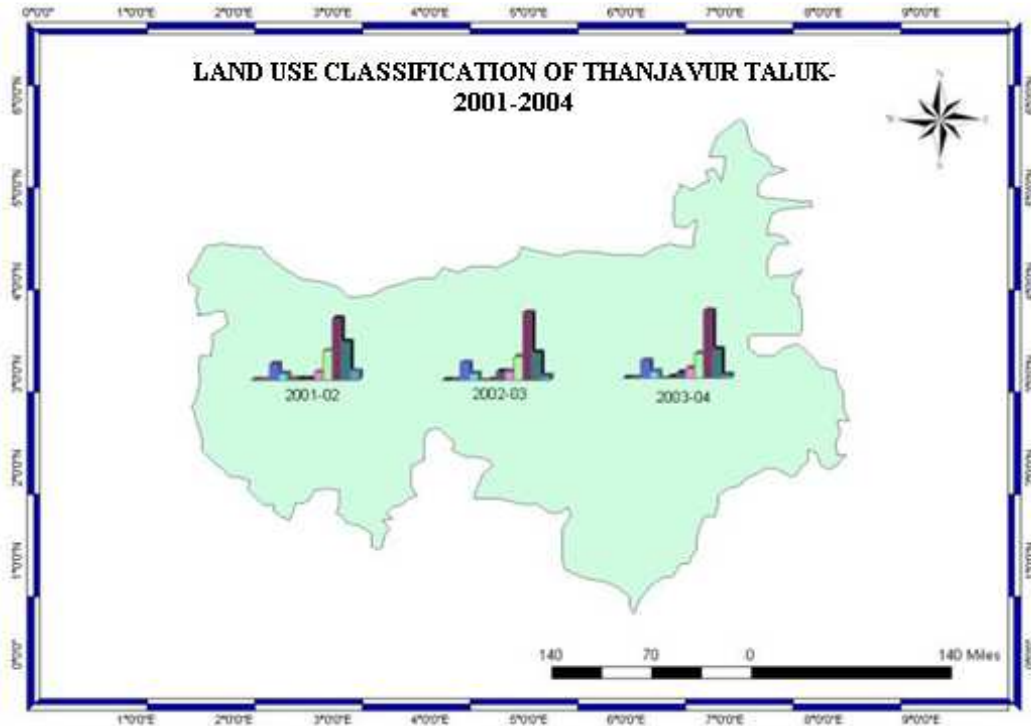
In Thanjavur taluk land was classified in twelve major categories of divided, such as forest ,barren and uncultivable uses, land put to non-agricultural uses, cultivable waste, permanent pasture and other grassing land, land under miscellanea tree crops and grosses not include in net-area sown, current fallows ,other fallow, net- areas sown, geo- area according to village papers, total cropped areas and areas sown more than once, In the years of 2001-2007 the all types of categories are not to improved too high ,some types of land usages are decreasing and some types are increasing. In this tables are given below.

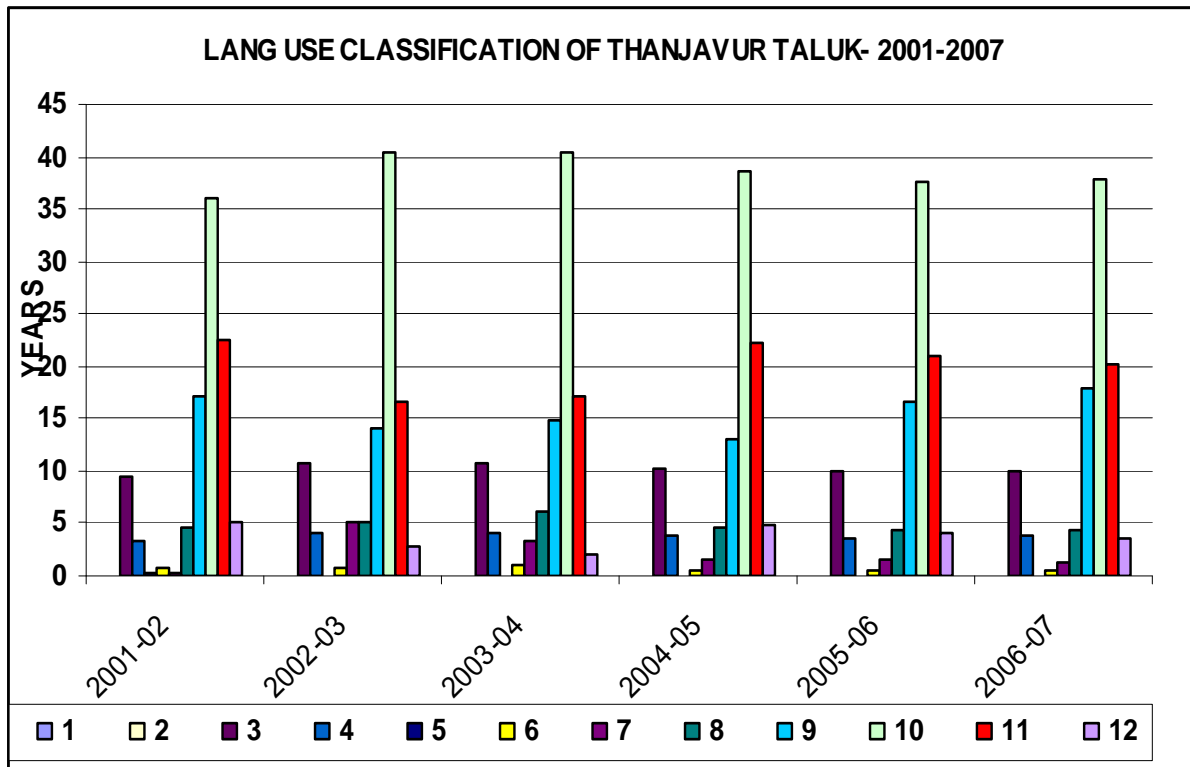
Land use (cover class)	sub classes
I. Buildup land -	1.settlement, 2.roads, 3.railway.
II. Agricultural land-	1.crop land, 2.plantation, 3.fallow land.
III. Water bodies-	1.river,2.canal,3.wells
IV. Forest land-	1.open forest, 2.mixed jungle, 3.reserved forest.
V. Waste land-	1.land with and without scrub,2.sheet rock and Stone waste, 3.miniing area.
VI. Other land-	1.wetland, 2.mudflat.

Land use classification of Thanjavur Taluk

Table-1

	Land use classification	2001-02 in %	2002-03 in %	2003-04 in %	2004-05 in %	2005-06 in %	2006-07 in %
1	Forest 	.10	.11	.11	.11	.11	.11
2	Barren and uncultivable uses 	.11	.12	.12	.12	.11	.12
3	land put to non-agricultural uses 	9.5	10.7	10.8	10.3	10.04	10.09
4	Cultivable land 	3.4	4.10	4.0	3.8	3.7	3.80
5	permanent pasture and other grassing land 	.38	.08	.08	.07	.07	.07
6	land under miscellanea tree crops and grosses not include in net- area sown, 	.65	.72	1.01	.5	.59	.562
7	current fallows 	.38	5.2	3.4	1.56	1.54	1.33
8	other fallow 	4.60	5.2	6.16	4.7	4.3	4.27
9	net- areas sown 	17.2	14.0	14.79	13.14	16.66	17.95
10	geo- area according to village papers 	36.1	40.3	40.3	38.5	37.5	37.75
11	total cropped areas 	22.4	16.6	17.2	22.32	20.9	20.30
12	areas sown more than once 	5.18	2.87	2.03	4.88	3.98	3.65
	Total	100	100	100	100	100	100





- 1-FOREST
- 2-BARREN AND UNCULTIVABLE USES,
- 3- LAND PUT TO NON AGRICULTURAL USES,
- 4-CULTIVABLE WASTES,
- 5-PERMANENT PASTURE AND OTHER GRASSING LAND,
- 6-LAND UNDER MISECELLIANE TREE CROPS AND CROSS NOT INCLUDED IN NET- AREA SOWN,
- 7-CURRENT FALLOWS,
- 8-OTHER FALLOWS,
- 9-NET AREA SOWN,
- 10-GEO-AREA ACCORDING TO VILLAGE PAPERS,
- 11-TOTAL CROPPED AREA,
- 12-AREA SOWN MORE THAN ONCE.

Forest Land

Forest land via the valuable natural’s resource, timber and wood. The most of the forest land is economically importance. In the thanjavur district placed the reserved forest. From the year of 2001-07 the forest land usages is not change.2001-02-.10%, and 2002-07-.11%.

Barren and uncultivable land

during the year of 2002-05 its uses has increased-12%, the next year it has decreased in .11%.meanwhile the year of 2006-07- .12% of increased. From the year of 2001-07 its uses were change in every year.

Land put to non-agricultural uses

During the year 2001-04 land uses has increased in every year. At the same time land uses not much more level of increasing very little amount of increased.2001-02-9.5%, 2002-03-10.7%, 2

and 003-04-10.8%.the year of 2004-07-its uses had decreased.2004-05-10.04%, 2005-06-10.04%, and 2006-07-10.09%.

Cultivable land

During the year 2001-04 land uses has increased in every year. 2001-02-3.4%, 2002-03-4.10%, and 2003-04-4.0%.the next year of 2004-07-its uses had decreased.2004-05-3.8%, 2005-06-3.7%, and 2006-07-3.80%.

Permanent pasture and other grassing land

from the years of 2001-2007 this land uses had decreased to low.2001-02-.38%,2002-03-.08%, 2003-04-.08%, 2004-05-.07%.2005-06-.07%, and 2006-07-.07%.

Land under miscellanea tree crops and grosses not include in net- area sown

during the year of 2001-2003 in this land uses has increased.2001-02-.65%,2002-03-.72% and 2003-04-1.01%.th next year's 2004-07 its uses had decreased.2004-05-.5%,2005-06-.59% and 2006-07-.56%.

Current fallows

from the years of 2001-2007 this land uses had decreased to low.2001-02-.38%,2002-03-5.2%, 2003-04-3.4%, 2004-05-1.56%.2005-06-1.54%, and 2006-07-1.33%.

Other fallow

during the year of 2001-2003 in this land uses has increased.2001-02-4.60%,2002-03-5.2% and 2003-04-6.16%.the next year's 2004-07 its uses had decreased.2004-05-4.7%,2005-06-4.3% and 2006-07-4.27%.

Net- areas sown

during the year of 2001-2004 in this land uses has decreased.2001-02-17.2%,2002-03-14.0% 2003-04-14.79%, and 2004-05-13.147%.the next year's 2005-07 its uses had increase. 2005-06-16.6% and 2006-07-17.95%.

Geo- area according to village papers

during the year of 2001-2004 in this land uses has increased.2001-02-36.1%,2002-03-40.3% and 2003-04-40.3%, the next year's 2004-07 its uses had decrease. 2004-05-38.5%.2005-06-37.5% and 2006-07-37.75%.

Total cropped areas

during the year of 2001-07 land uses has differ from year by year.2001-02-22.4%,2002-03-16.6%,2003-04-17.2%,2004-05-22.32%,2005-06-20.9% and 2006-07-20.30%.

Areas sown more than once

during the year of 2001-07 land uses has differ from year by year.2001-02-5.18%,2002-03-2.87%,2003-04-2.03%,2004-05-4.88%,2005-06-3.98% and 2006-07-3.65%.

CONCLUSION

The total area of this taluks is divided into two major classes 1, arable, and 2.non arable. The first category includes the land actually cultivated, fallow, cultivable waste, permanent pastures and grazing ground. All such lands, which are declared as forest, barren and other uncultivated land and land not available for agriculture. Are including the second category. Both these major classes are put together and studied as general land use classification of Thanajvur taluk. From the years of 2001-2007, The forest covered amount is not changes in every year. Barren land and uncultivated land uses has changes in .11% to .12% respectively. Land put to non-agricultural uses changes up to 9.5% to 10.8%. Cultivable land uses more than 3% to 4% respectively in Thanjavur taluk, permanent pasture and other grassing land about 3.8 % is the highest uses at 2001-02, land under miscellanea tree crops and grosses not include in net- area sown land uses has decrease from 2004-07. Current fallows and other fallow uses also had decrease from the year of 2004-07. net- areas sown uses changes up to 13% to 17%. Geo- area according to village papers, total cropped areas, and areas sown more than once land uses changes differ from year by year.

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