



Spatio-Temporal Assessment Of Land Use Change In Mangalwedha Taluka Solapur District, Maharashtra

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ABSTRACT:

The dynamic process by which humans use land resources to meet their requirements is known as land use. An evaluation of the land's allotted uses from the human perspective is called land use. A key determinant of whether land is being used appropriately or inappropriately is land usage. The Indian economy is still dominated by agriculture, and crop productivity is a key factor in determining sustainability and growth. There are various land use patterns in Mangalwedha Taluka. Situated 25 km southeast of Pandharpur city and 55 km west of the district headquarters in Solapur, it boasts a tropical climate and unique geographical features. The Karnataka states of Pandharpur, Sangola, Mohol, Jath, and Bijapur are all bordered by Mangalwedha. The Mangalwedha Sub district contains a large number of villages. In Mangalwedha Taluka, the study aims to analyze the spatiotemporal assessment of land use changes from 1970 to 2020. The study displays changes in agricultural land use in grazing land, non-agricultural land, net sown area, and current and other fallow land. Due to changes in the climate, unpredictable monsoon, and developmental activity, among other reasons. Therefore, improved agricultural land use planning is desperately needed to maintain it.

KEYWORDS: Land use, Land use pattern, Land use change, spatio-temporal assessment.

INTRODUCTION:-

Land is the most valuable resource in any nation's economy, and agriculture has played a pivotal role in the development of human civilization by enabling people to dwell in specific locations. Land is an essential natural resource and a key factor in determining a nation's socioeconomic standing. The two most prevalent land use classifications are agricultural and urban. The management and alteration of the natural environment, including pastures, arable land, and settlements, is referred to as land use. "Land use Patterns" refers to the configuration or arrangement of the land usage. The vast rise in the human population has led to a complexity in their needs. The pattern of land use is changing as a result of the growing pressure from the population.

Due to the pressure of a growing human and animal population on the land, as well as the excessive demand for food and raw materials, it is imperative that every parcel of land be used in a scientific, sensible, and economical manner without negatively impacting the area's socioeconomic or ecological conditions.

LITERATURE REVIEW:-

Numerous geographers have conducted extensive research on land usage across the globe. It was CARL O SOUR who proposed the notion of a map illustrating how land is used. Since 1930, land use has been a significant area of study in geography. Petrick Gaddis conducts the initial land use survey and mapping, but L.D. Stamp in Britain does the actual land use study work. Using an inter conceptual relationship model, Singh, S.K. (2015) presented theoretical and conceptual understanding of land, land use, land use change, and land use pattern. In 2014, Devi, L.M., Naqvi, H.R., Siddiqui, L., and Siddiqui, M.A. conducted an analysis and identified Manipur's land use and land cover. Singh

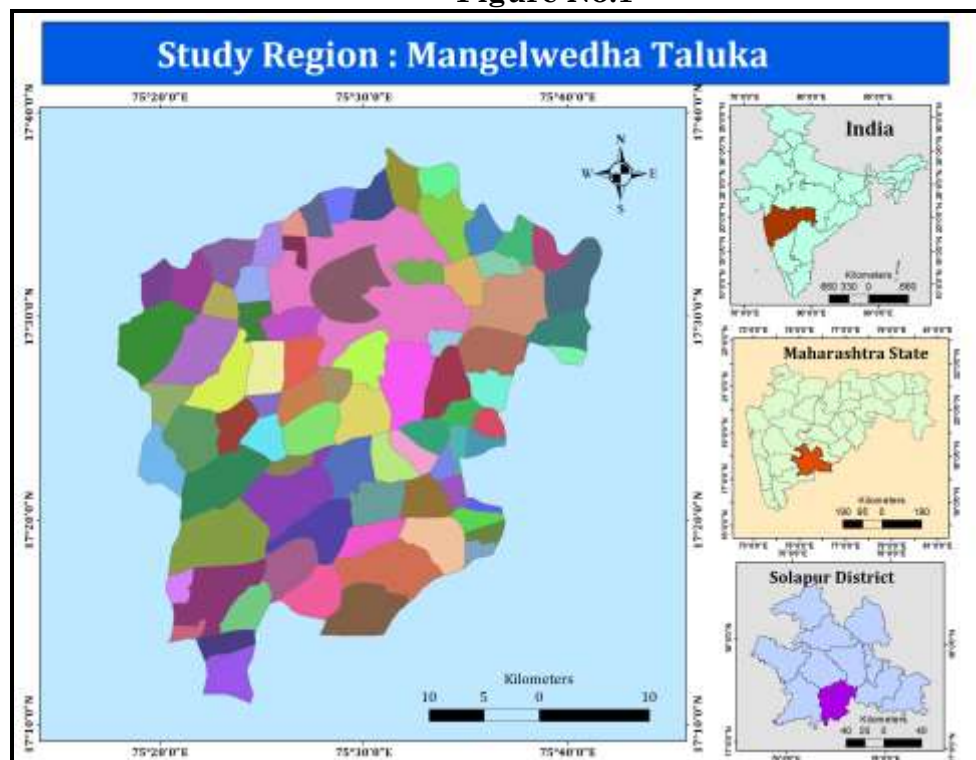
Gottumuikkalaanda (2010): He has anatomized micro irrigation technology on yield, saltiness, and nitrate quantification in groundwater in Rangareddi quarter of Andhra Pradesh. He assesses irrigation sources and impact of drip irrigation on crop yield, power force, toxin saving, cost benefit analysis, etc. He also studies advantages and disadvantages of drip irrigation in husbandry development.

M.V. Reddy and N.B.K Reddy (1992) They've bandied the changing pattern of irrigation in Andhra Pradesh. They've also explained irrigation as a decisive factor in Indian husbandry due to high variability and inadequacy of downfall. Irrigation is imperative for successful husbandry particularly the arid, semi-arid and sub-humid areas which are prone to failure and shortage conditions due to partial failure and delayed Arial or beforehand with drawls of the showers. The study area of Andhra Pradesh has substantial area under semi-arid climate; husbandry is an adventure with thunderstorm.

STUDY AREA:-

Geographically the Mangalwedha Taluka consists of 79 villages masking a complete region of 1140.9 Sq. Kilometers, and is located in the excessive phase of Solapur District. Further, it is on the Maharashtra facet of the Maharashtra, Karnataka Border, in the deep South-East. Bijapur District of the Karnataka State types a congruent area, North-East of Mangalwedha; and to the West and South-West are situated Sangali and Sangola; to the North, North-East land West is the Solapur District. The altitude of Mangalwedha is 458 meters above sea level. Mangalwedha is a central zone/ transitional town in the Solapur district in state of Maharashtra its lies between 17° 30' N latitude and 75° 27'E.

Figure No.1



OBJECTIVES:-

1. To dissect the spatio-temporal variation of land use change in the study area.
2. To probe the factor impacting of agrarian land use pattern in the study area.

METHODOLOGY:-

The work has been carried out with the help of secondary data collected from District Statistical Handbook published by Economic and Statistics Division, State Planning Institute and Internet. All the collected data analysed or tabulated by using

EXCEL- 13 software to gain the relative proportion of different land use orders at the quarter position during 1970 to 2020.

RESULTS & DISCUSSION:-

The land use changes of a place are largely determined by the physical profile, population pressure, position of industrialization and the situations of development of that place. The aggregate reported area of the Mangalwedha Taluka during 2019- 20 was 114169 hectares.

Table.1
Spatio-temporal study of land use changes in Mangalwedha Taluka During 1970-2020
(Area wise in hectares).

Year	Total reporting area (in hect.)	Forest	Barren and unculturable land	land put of non agri uses	Cultivable waste	Pastures and other land	Land under misc tress crops and groves	fallow current land	other fallow land	net sown area
1970-71	114169	708	1563	1583	230	320	672	211	134	67209
1980-81	114169	708	1563	1583	230	320	672	211	134	67209
1990-91	114169	708	1563	1583	230	320	672	211	134	67209
2000-01	114169	708	1563	1589	230	320	672	211	134	67146
2010-11	114169	708	1563	1589	230	320	672	211	176	67146
2018-19	114169	708	1563	1589	230	320	672	211	176	67146

Source:-Compiled from District Statistical Handbook of Solapur District, 1970 to 2018

Table.2
Spatio-temporal study of land use changes in Mangalwedha Taluka during 1970-2020 (percentage wise).

Year	Total reporting area (in hect)	Forest	Barren and unculturable land	land put of non agri uses	Cultivable waste	Pastures and other land	Land under misc tress crops and groves	fallow current land	other fallow land	net sown area
1970-71	114169	0.62	1.37	1.39	0.20	0.28	0.59	0.18	0.12	58.87
1980-81	114169	0.62	1.37	1.39	0.20	0.28	0.59	0.18	0.12	58.87
1990-91	114169	0.62	1.37	1.39	0.20	0.28	0.59	0.18	0.12	58.87
2000-01	114169	0.62	1.37	1.39	0.20	0.28	0.59	0.18	0.12	58.81
2010-11	114169	0.62	1.37	1.39	0.20	0.28	0.59	0.18	0.15	58.81
2019-20	114169	0.62	1.37	1.39	0.20	0.28	0.59	0.18	0.15	58.81

(Source:-Compiled from District Statistical Handbook of Solapur District, 1970 to 2020)

SPATIO-TEMPORAL ASSESSMENT OF LAND USE CHANGES: -

Present spatio and temporal variations of agrarian land use have studied for net sown area, area not available for civilization, cultivated waste, free land and timber etc. Temporal variation is the change in general land use in a given period of time. The agrarian land use was studied for time 1970 to 2020. In order to find out general land use change in 1970-71 total net sown area was 58.87percent after 48 time in 2019-2020 net sown area has reduced 58.81, showing drop of 0.06percent. The net sown area has dropped by 0.06percent from 1970-71 to 2019-20 due to urbanization and industrialization and adding pasturage land, free land etc. The cropping pattern in the quarter has extensively changed during the last 49 times. Because of climate change, adding global warming, irregular thunderstorm, changing climatic conditioned. that effect on agrarian land use. Present script of land use substantially determines by

environmental survival. The significance of husbandry has been study, the population of country is adding at a veritably fast rate plying a great pressure on land and negatively affecting the man land rate and agrarian product. The study of land uses presents a clear picture to the possibilities of land use and gives a fruitful planning for a massive husbandry development.

Figure.2

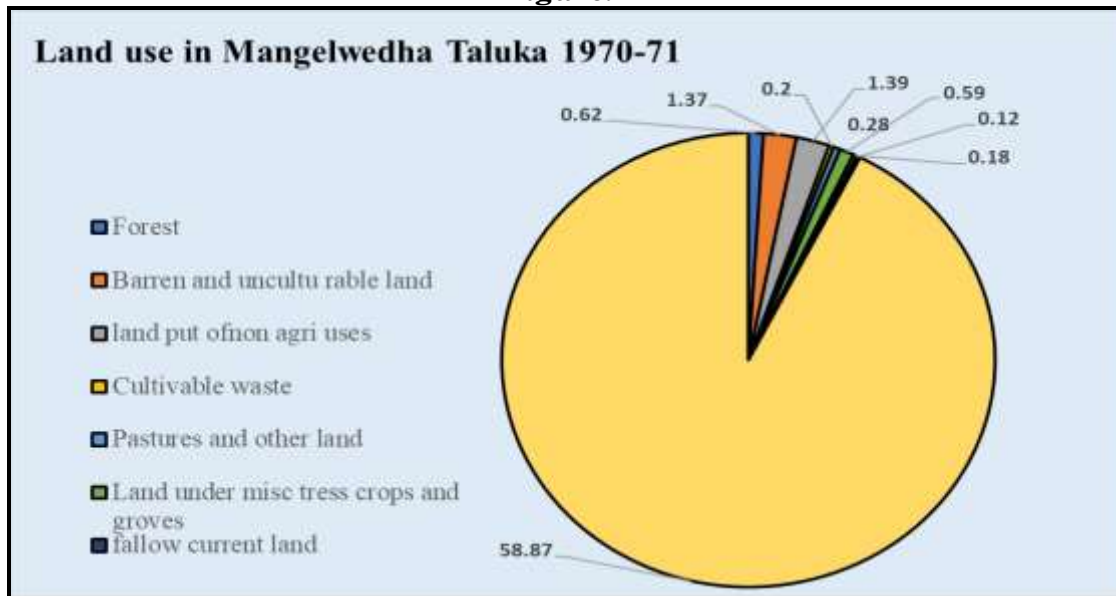
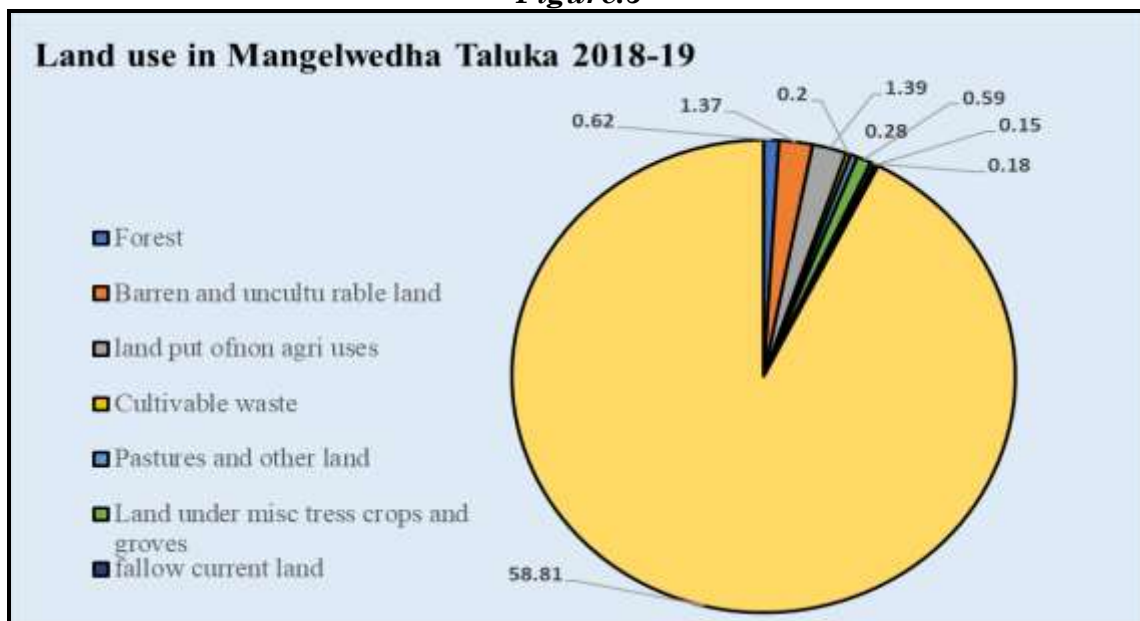


Figure.3



CONCLUSION

Growing population and limited of land resource is egregious the study of land use planning. Land has limited carrying capacity beyond which there will be declination and loss in productivity due to inordinate use. Mangalwedha Taluka has witnessed a significant change in land use in once five decades from between 1970-71 to 2019-20. The slightly changes in net sown area which has 58.87percent declined from 1970-71 to 58.81percent in 2019-20 at Taluka position. It's substantially due to increase in area under current free land, other free land and timber area. So, there's a critical need of comprehensive and intertwined land use planning for better agrarian land use to allocate the agrarian land for the better operation.

Suggestions: -

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Irrigation installations are the major limiting factor for the development of husbandry in Solapur. Thus, the development of irrigation installation should be given top precedence in the quarter. Solapur comes under the failure prone area thus there's need to increase the irrigation design. Also, there is need to increase the micro irrigation like drip and sprinkler irrigation. Area under the waste land should be brought under horticultural civilization to promote development of quarter as there is further compass for processing in this quarter. Timber area of the quarter is less, so there's need to increase the area under timber.

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