



## **THE ROLE OF GEOSPATIAL TECHNOLOGY IN SOCIAL AMENITIES FOR RURAL DEVELOPMENT**

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### **ABSTRACT**

*The present study is to apply Geospatial technology applications in various stages of sustainable planning, implementation and monitoring of the research area. The role of social amenities is important for sustainable rural development. Hence, to achieve desired development from economic and social angle maintaining good quality living conditions on the other. Today the Geospatial techniques and its scope of applications have change. It has been universally accepted as a most important and modern tool for mapping and monitoring of various disciplines as well as amenities and infrastructure. The huge and voluminous spatial database generated from various Remote Sensing, GIS & GPS platforms needs proper management like storage, retrieval, manipulation and analysis to extract desired information. This is where the computer aided GIS technology came into existence. A GIS & GPS with major input from Remote Sensing satellites for the different applications must be able to handle the spatio temporal data, quarries and other spatial operations. Software and the computer-based tools are designed to make things easier to the user and to improve the efficiency and quality of information processing data (Tiwari M.K.2012).*

*The study aims at need of social amenities in rural development and to know the progress of social amenities in Shrigonda tahsil. This concept focuses on tahsil wise identification of circlewise study for suitable to the same with consideration for region. This Research is beneficial for sustainable rural development. The plan has been prepared for village-wise analysis.*

**Keywords:** *Geospatial Technology, Social Amenities, Rural Development, Planning & Development.*

### **Introduction**

Every discipline in geography subject has a centre of study. In the same way the centre of study of rural geography is chiefly the village with its problems. The village is an



independent unit of revenue with fixed boundaries within the boundaries of a village several houses are either clustered together or scattered. The present study focused on social amenities in rural area in Shrigonda tahsil of Ahmednagar district. The study is useful in understanding the importance of social amenities for rural development. This understanding certainly helps in the planning for integrated information of rural areas and in deciding policies. The study based on secondary data. Collected from census and Government documents.

The information on this aspect considered basic amenities like education, medical, drinking water, electricity, transportation, communication. Educational facility at the minimum level of primary education, highschool and college level situation. Medical facilities considered primary health centre, dispensary, family planning centre and hospital. Water is basic amenities studies river tap water, well water and tube-well water. Communication is important with post offices, telegraph office and telephone connections. Electricity supply is considered for agricultural, domestic and industrial purpose. It is considered and analyse the situation of rural areas in Shrigonda tahsil households.

It is concluded that in future there are much requirement of various amenities to uplift the standard of living and for progress of rural areas.

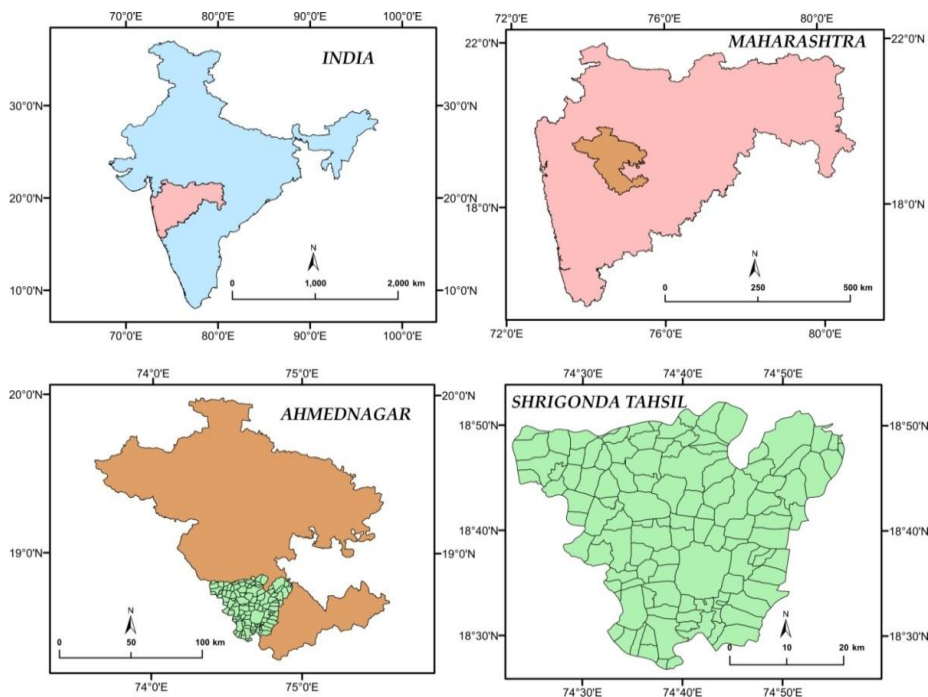
The main objective of present work in to apply Geospatial technology to prepare a sustainable rural development applying sustainability Co-efficient Index of social amenities models by given weightage to, infrastructure, socio-economic conditions, facilities and amenities. It has been made to computer based approach by using GIS and QGIS software to find the problem and prepare a data base-for the research area. It can be efficiently retrieved for the future monitoring and planning purposes. Shrigonda is the third largest tahsil in the Ahmednagar district with geographical area about 1629.94 km<sup>2</sup> and occupies 9.56 percent of the total area of the district. The total population of the Shrigonda tahsil is 315975 as per the census of 2011.

### Study Area:

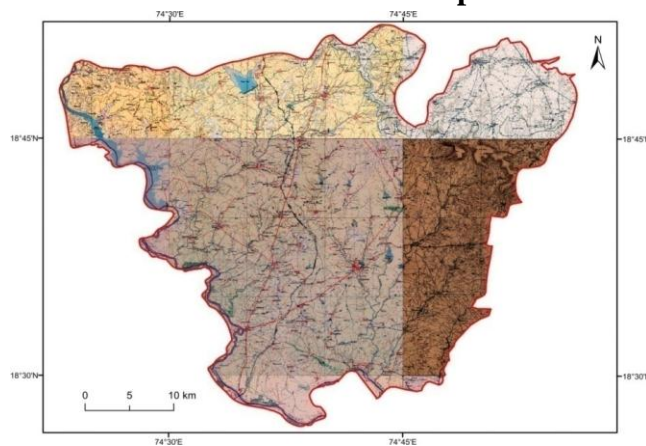
Shrigonda tahsil is located in the southern drought prone zone of Ahmednagar district. The tahsil situated partly at Bhima, Ghod and Kuakdi river and canal basin. Tahsil length is 60 Km. from East to West and 51 Km. from North to South. The height of tahsil is recorded 600 Mtrs. above the sea level. Generally slope of tahsil is North to South.

The latitudinal extend is 18<sup>0</sup> 27' 18" to 18<sup>0</sup> 51' 54" North and longitudinal extend is 74<sup>0</sup> 23' 24" to 74<sup>0</sup> 52' East. It is surrounded by Parner and Nagar tahsil to the northern part, Pune district to the west and south - east Karjat tahsil. It's an area of 1630 Sq. Km. is the third rank

of tahsil in Ahmednagar district. It is historical and religious which is situated on the bank of river Saraswati.



**Location Map of Shrigonda Tahsil**  
**Location Map**

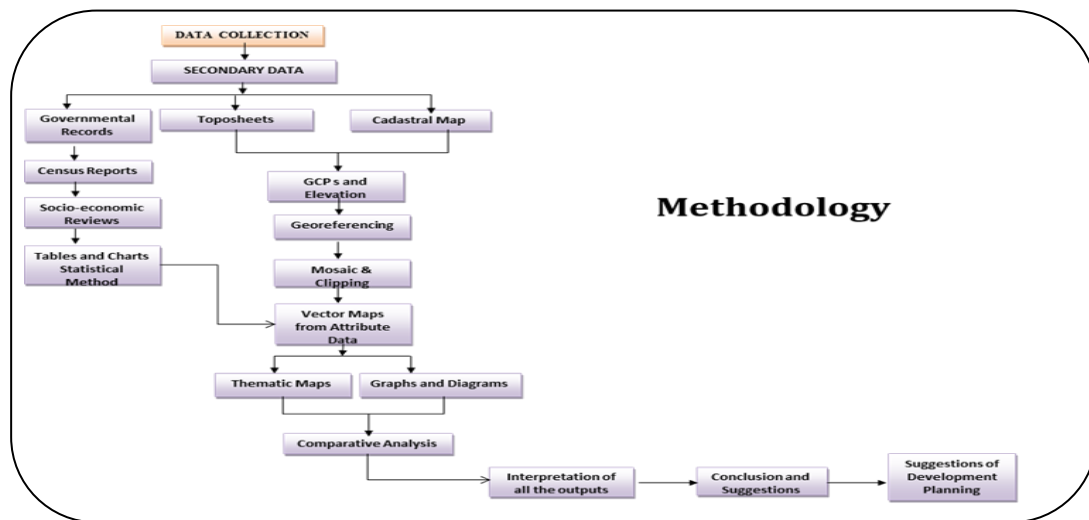


**Toposheet Map of Shrigonda Tahsil**

### Methodology:

The study is based on secondary data. Since the study area is large enough for detailed social amenities and analysis it has not been possible to study on village level data. Primarily the study is based on block level **published** and **unpublished** data and detailed study of revenue villages has been made on the **sample survey** of villages. We are studying the micro-level, which means the study area is divided for six village groups and they have included sub-villages i.e. circles. The socio-economic study included in this topic is main important

parameter of development in various villages as compare to another villages, as well as circles. Therefore the important part of micro-level study in rural area for development of any region.



**Fig.: Flow Chart of Methodology.**

General social situation and distribution of amenities in rural areas of Shrigonda tahsil are unevenly distributed. Data of amenities such as education, medical, drinking water, post and telegraph, transport and communication number and availability take into account and calculate the rank score value per unit as co-efficient index. It is considered that the low co-efficient index is high potential region and high co-efficient index is low potential region it shows lower levels of social amenities development.

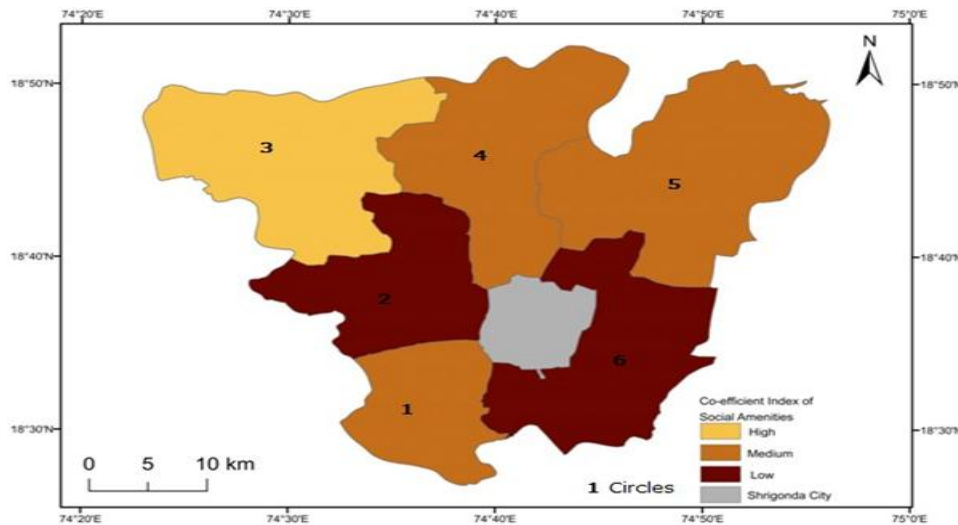
**Result and Discussion:**

**Shrigonda Tahsil : Co-efficient Index of Social Amenities**

**Co-efficient Index of Social Amenities**

Sr . No .	Village Group	P D R <sub>1</sub>	P G R <sub>2</sub>	Ed u. R <sub>3</sub>	Me d. R <sub>4</sub>	D W R <sub>5</sub>	Com m. R <sub>6</sub>	Tra ns. R <sub>7</sub>	SR R <sub>8</sub>	LR R <sub>9</sub>	To tal	Co-efficient Index
1	Limpangaon	1	1	5	1	6	6	4	3	4	31	<b>3.44</b>
2	Belwandi Bk.	2	6	4	2	5	5	5	6	1	36	<b>4.00</b>
3	Yelpane	3	4	1	6	1	1	2	2	5	25	<b>2.77</b>
4	Kolgaon	4	2	2	3	4	2	6	4	2	29	<b>3.22</b>
5	Mandavgan	6	3	3	4	2	3	3	1	6	31	<b>3.44</b>
6	Adhalgaon	5	5	6	5	3	4	1	5	3	37	<b>4.11</b>

(Source: Compiled by the researcher)



**Fig. Co-efficient Index of Social Amenities of Shrigonda Tashil.**

### Co-efficient Index of Social Amenities:

Table shows the ranks for each village group for all social amenities. For the present study socio-economic development in Shrigonda Tahsil in terms of different variables which is shown in the table. This method has been adopted for all variables to find out ranking co-efficient index formula (Kulkarni M.J.2013).

$$Co - efficient Index = \frac{OR}{N}$$

Where,

OR = Sum of Ranks

N = Number of variables

Above formula used for all variables and calculated social amenities co-efficient index, it shows in above table.

The ranking co-efficient index result shows that the study region has low index in 2.77 shows Yelpane and in higher index shows 4.11 Adhalgaon group of villages shows lower levels of social amenities development. It is classified into their three types of regions.

#### 1) High Potential Region (Index below 2.9):

High potential region is known as sufficiently region. Yelpane group of villages is in this category. This village group covers 301.01 sq.km. of the tahsil area and 52973 which is highest population in this group according to 2011 census. In this village group is near to the Shirur, Ranjangaon, Supa MIDC, Saikrupa Sugar factory located at Dhawalgaon. Therefore in this village group education, drinking water and communication facilities show first rank

in all groups. Most of the villages are joining together urban centers behind the area. A transportation facility of this village group is shows second rank. It is indicator of high developed region. Medical facility and literacy shows 6 and 5 score value of this group it is impact of surrounding region in urban centers and industrial area. In this group of villages high potential region of social amenities than other group of villages in the study region.

## 2) Medium Potential Region (Index 3.0 to 3.99):

Medium potential region is known as expected region. Expected region means the region which denotes medium availability of social amenities. Means developing stage of region. Map 4.20 showing Limpangaon, Kolgaon, and Mandavgan group of villages remaining 3.44, 3.22 and 3.44 co-efficient index of social amenities are respectively. This region covers 749.08 sq.km. area and 139015 population of tahsil. Kolgaon and Mandavgan groups impact of geographical situation. Limpangaon group of villages shows high score value of drinking water and communication i.e. 6 respectively. Education is 5 and transportation is showing 4 score value. This is indicator of relative location of surrounding area. Kolgaon and Mandavgan group of villages showing 3.22 and 3.44 co-efficient index respectively. It is essential for planning to increase the social amenities in expected region of Shrigonda tahsil.

## 3) Low Potential Region (Index above 4):

Low potential region is known as underdeveloped or backward region. It lacks facilities; less contact with developed region are the main problems of some areas of this region. As per co-efficient index of social amenities show Belwandi and Adhalgaon group low index as compare to other groups (4 and 4.11 respectively). This underdeveloped region occupies 445.07 sq.km. area and 92853 population of the tahsil. This lack of amenities is more than three. Because increasing the population growth rate as compare to other groups. Therefore in these two groups are not dynamic region. Due to lack of all the parameters of underdeveloped region. It faces the problem of less social amenities, infrastructural facilities, less urbanization and industrialization as a effect of geographical situation. Therefore facilities should be developed. The facilities should be provided to integrated development planning in this region.

## Conclusion:

Shrigonda tahsil belongs to drought prone area; hence there is scarcity of water. North east and eastern part of the tahsil (Mandavgan , Adhalgaon and Kolgaon group of villages) is more scarcity of water as compare to other study region. The study area needs develop in road transportation, particularly in Mandavgan, Kolgaon and Adhalgaon group of villages.

The distribution of social amenities is uneven like as education, drinking water, medical, transportation etc. It is necessary to these amenities to provide or develop in Mandavgan and Adhalgaon group of villages. The provide modern medical facilities by taking the percentage of villages and population, served by medical facilities.

The less canal irrigation in Mandavgan, Kolgaon and Adhalgaon group of villages. Therefore watershed development programme or canal irrigation programme is essential for these dry villages for agriculture and economic development.

It is concluded that in future there are much requirement of various amenities to uplift the standard of living and progress of rural areas in district. The study is useful in understanding the importance of social amenities for rural development. This understanding certainly helps in the planning for integrated information of rural areas and in deciding policies.

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