

Rural Settlement System in Kolhapur District: A Geospatial Analysis

Dr. P.B.Achole*
Assit Prof.
Head Department Of Geography
Azad Mahavidyalaya, Ausa, Latur

Shri.Sunil G. Bhosale
Assit. Prof.
DKASC College, Ichalkaranj, Research Student
SRTM University, Nanded

Abstract

Settlements of the countryside are the mainstay of the human society. Rural settlement is the only elements in human geography where we may really search try to locate the genesis of settlement geography. In this way rural settlements are the topographic expression of the grouping and arrangement of two fundamental elements of human geography, houses and highways. Here an attempt has been made to study the rural settlement system on the basis of spacing. According to the 2011 census there are 1195 inhabited villages' in the Kolhapur District, having a population of 2645992. Using spacing formula, the region has an average spacing (r) of rural settlement of 2.81 kms among 1195 inhabited villages. The Present study is mainly based on secondary data which is collected from the District Census Handbook of Kolhapur District 2011. The formula used by Mukherjee for the computation of spacing of rural settlements in a tehsil. GIS techniques have been applied to measure settlement pattern in study area.

Key Words: Spacing of rural Settlement, Density of Settlement, Size Settlement.

INTRODUCTION

The Indian settlement system is typically a village system. The village community has been essentially an agro-craft community the economic organization based on the local soil, animal and plant world and their simple utilization at direct subsistence level. Here an attempt has been made to understand the settlement system and its evolution to the present context. The most conspicuous physiographic feature of Kolhapur district, which have not only influenced the availability of various natural resources within the region but also influenced economic and demographic patterns as seen today. Rural landscape in India is dominated by the Villages and the Primary activities carried out by the inhabitants of those villages. Over 5.9 lakh villages are spread all over the country (Khullar, 2007, P.p 415). According to Blache, "India is per excellence, a country of villages". Agriculture is the most important of all the primary activities carried out by villagers. Thus villages are par excellence characteristic of agricultural landscape of the rural India. Settlement of the countryside is the mainstay of the human society. Rural settlement is the only element in human geography where we may really search and try to locate the genesis of settlement

geography. In this way rural settlements are the topographic expression of the grouping and arrangement of two fundamental elements of human geography, houses and highways.

There are two sets of variables which effect settlement types in rural areas. We may call them agglomerating and deagglomerating factor. These parameters are both physical and cultural and lead to compact and dispersed settlements according to the relative influence of centripetal and centrifugal forces. History of settlement is as old as history of man himself. Since the appearance of man on the surface of the earth, he started looking for a place to settle for his safety and where he had to do minimum efforts to gain his food. In that stage man was dominated by nature, with the course of time he started interacting with nature and as a result the modern man has come up with highly complex settlement system.

OBJECTIVES

1. To study spacing of rural settlement within tehsil in Kolhapur district.
2. To study density and size of rural settlement in Kolhapur District.

DATA BASE AND METHODOLOGY:

The spacing of rural settlement is basically based on number of rural and total geographical area. According to the 2011 census there is inhabited villages (Grampanchayat) 1195 in Kolhapur District, having a population of 2645992. The formula used by Mukherjee for the computation of spacing of rural settlements in a tehsil. GIS techniques have been applied to measure settlement pattern in study area. The spacing of rural settlements of the region have been categorized in three groups from less than 2.5 kms low spacing, medium spacing 2.6-3.00 and high spacing more than 3.1 kms. Present study is mainly based on secondary data which is collected from 2011 District Census Handbook of Kolhapur District. Statistical methods and GIS technique have been applied to measure settlement pattern and distribution in study area.

The spacing within tehsil or region has been analyzed on the basis of tehsil wise data for area under number of inhabited villages. Using the formula mention below,

$$*S = 2\sqrt{\frac{A}{N * \pi}}$$

Here,

S = is Spacing in kms.

A = is the Area of an Tehsil

N = is the Number of Rural Settlement

STUDY AREA

Kolhapur district is situated in the extremesouthern part of Maharashtra State. It lies between $15^{\circ} 43'$ and $17^{\circ} 17'$ north latitudes and $73^{\circ} 40'$ and $74^{\circ} 42'$ east longitudes. It is surrounded by Sanglidiistrict to the north, Karnataka State to the east andsouth and Ratnagiri and Sindhudurg districts to thewest. The Sahyadri ranges to the west and VarnaRiver to the north form the natural boundaries.The district has an area of 7,685.00 Sq.kms. anda population of 3876001 (3.45) persons as per Census 2011.While the area of the district accounts for 2.5 percentof the total area of the State, the districts populationconstitutes 3.45 percent of the total population of theState. The headquarters of the district is at Kolhapur.Kolhapur was the capital of the former KolhapurState, a premier State of the Deccan and was alsothe seat of the Residency for Deccan States. Itderives its importance from its past politicalassociations and its present position as a greatcommercial, religious, cultural and educational centre.It is well connected both by road as well as by rail.

RESULT AND DISCUSSION

Spacing of Rural Settlement in Kolhapur District 2011

The spacing within tehsil or region has been analyzed on the basis of tehsil wise data for area under number of inhabited villages. Using the formula mentioned above, the region has an average spacing (r) of rural settlement of 2.81kms among 1195 inhabited villages. The above district average there are 07 tehsil, highest spacing is found in Hatkanangale (3.48 kms) tehsil and lowest in Panhala (2.37 kms).The tehsil wise results were categories into three groups in depending upon average spacing viz. high (Above 3.01), Medium (2.51-3.00) and Low (Below-2.50). The fig. no. 1 revels that spacing of rural settlement in district.

High Spacing Settlement

The distance between of two settlements is above 3.01 kms it is called as high spacing. The high spacing of rural settlement is called as dispersed type of settlement. There are four tehsil are recorded in high level of spacing categories viz. Hatkanangale (3.48 kms), Shirol (3.46 kms), Bavda (3.11 kms) and Shahuwadi (3.00 kms). In Hatkanangale and Shirol tehsil having high spacing among 58 and 54 villages because of these two tehsil are located in low land area. The low land area is facing every year flood problem at hence settlement are located dry point area. As far as in Shahuwadi and Bavda tehsil rural settlement having high spacing because of these area is hilly area and settlement are located near source of

water. It means that water is a determining factor of rural settlement and its effect is also favourable either unfavourable.

Medium Spacing Settlement

The distance between two settlement 2.51 to 3.00 kms is considered as medium spacing of rural settlement. There are six tehsil having medium spacing viz. Kagal (2.41 kms), Gadhinglaj (2.59 kms), Radhanagari (2.92 kms), Bhudargad (2.72 kms), Ajra (2.67 kms) and Chandgad (2.81). These tehsil are located in southern part of district. In this region major river are flows towards west to east direction at hence settlement are located in bank of river as well as foot hill area.

Table No: 1

Kolhapur District: Size, Spacing and Density of Rural Settlement

Sr.No	Tehsil	Total Inhabited Villages	Total Area of Rural Settlements	Spacing in kms	Average Size of Settlements	No. of Villages per 100 kms
1	Shahuwadi	133	942.36	3.00	1356	14
2	Panhala	129	568.30	2.37	1950	23
3	Hatkanangale	58	551.57	3.48	7021	11
4	Shirol	54	507.49	3.46	5928	11
5	Karvir	121	549.98	2.41	3157	22
6	Gaganbawada	45	342.08	3.11	795	13
7	Radhanagari	114	762.64	2.92	1752	15
8	Kagal	84	528.90	2.83	2739	16
9	Bhudargad	114	661.84	2.72	1319	17
10	Ajra	97	541.42	2.67	1062	18
11	Gadhinglaj	90	473.66	2.59	2206	19
12	Chandgad	156	965.09	2.81	1200	16
Kolhapur District		1195	7395.34	2.81	2214	16

Source: Compiled by researcher

Low Spacing Settlement

Clustered types of settlement are found in Karvir (2.41 kms) and Panhala (2.37 kms) tehsil. The distance between two settlements is less than 2.5 are considered as low spacing of rural settlement. In the time of Maratha Empire Karvir and Panhala are administrative place. As compare to number of settlement total geographical area of tehsil is very less, at hence in these tehsil settlement are found clustered type.

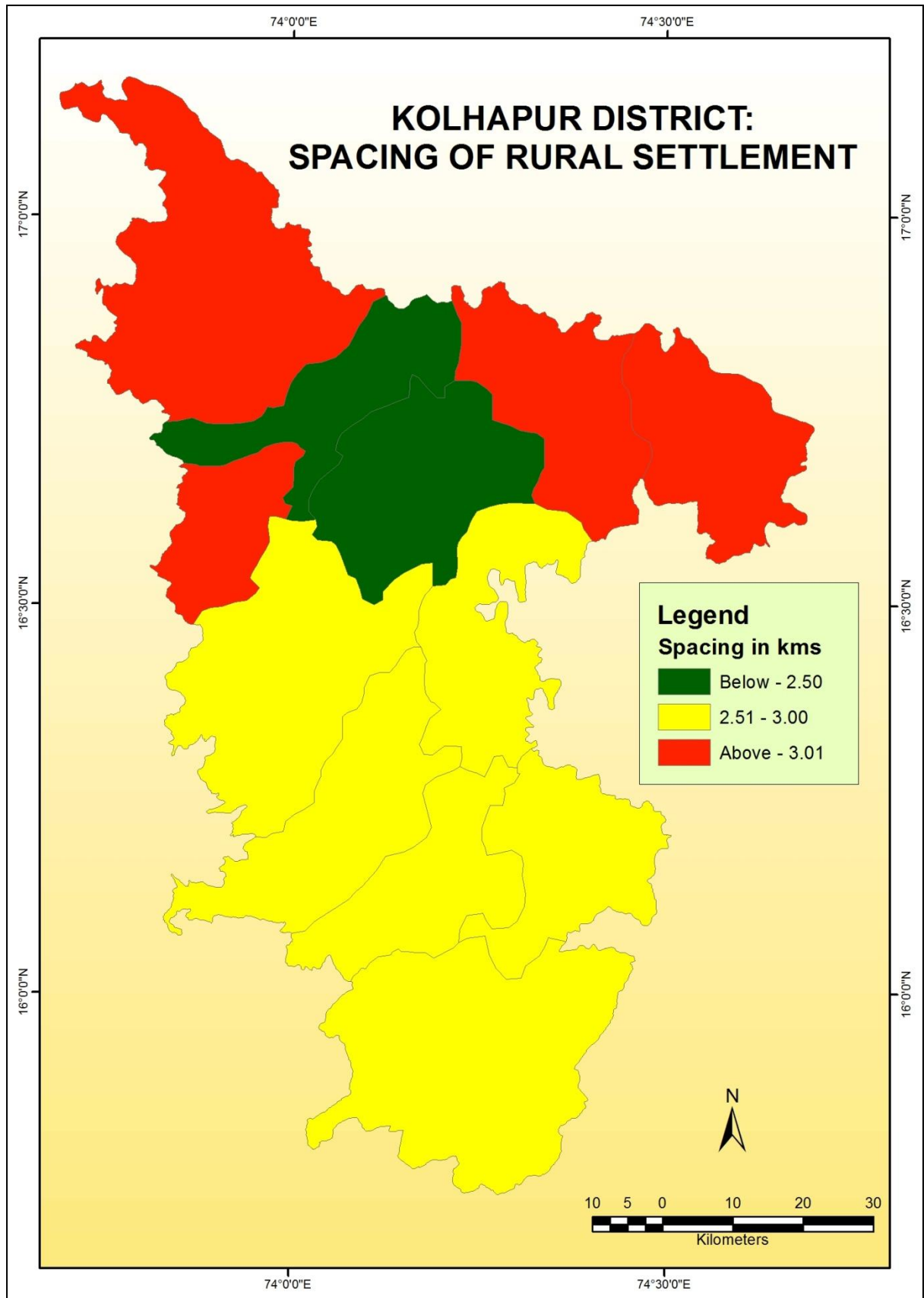


Fig.1

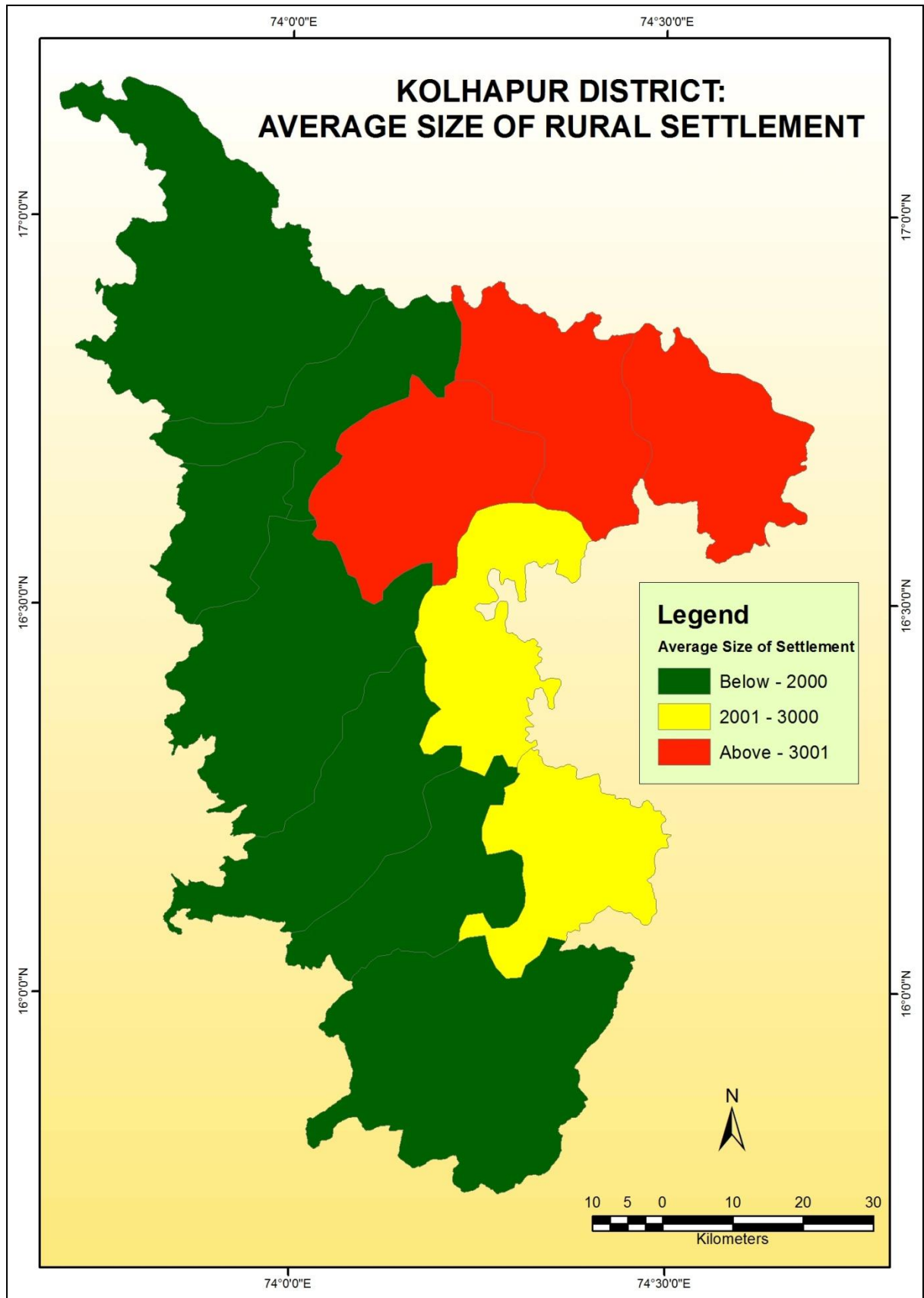


Fig. 2

Distribution of Mean Size of Rural Settlement

The table no 1 and fig no. 2 shows that distribution of mean size of rural settlement. It will be interesting to study the relationship between average spacing and average size of the settlement, to get an idea to what extent size may govern the space. In Kolhapur district relief determines, not only location but also size of settlement. Other factors also influence the size of settlement for example drainage, transport routes, location of urban centres in the region. The average size of rural settlement in Kolhapur district is 2214 persons. The above district averages there are four tehsil viz. Karvir, Hatkanangale, Shirol and Kagal tehsil. The highest average size of settlement found in Hatkanangale tehsil which is 7021 persons and lowest average size of rural settlement is found in Gaganbavda tehsil which is 795 persons. The mean size of settlement have been categorised into three categories viz. High above 3001 persons, Medium 2001 – 3000 persons and Low below 2000 persons.

High Mean Size

The high mean size has been found in three tehsil viz. Hatkanangale 7021 persons, Shirol 5929 persons and Karvir 3157 persons. These tehsil are found in Panchaganga River basin area. These three tehsil area is low land area and it is rich to fertile soil. It has been seen that urban centres have much influence on the size of villages. In general those villages which are located in the vicinity of urban centres are large in size in comparison to interior villages. The areas where resources are available and accessible to open plain topography have high and medium size villages. The tehsil of Hatkanangale, Karvir and Shirol are the plain area of Panchaganga and Krishna River. Consequently the topography allows the medium and large size settlement.

Medium Mean Size

The medium size settlements exist in the eastern boundary of Kolhapur tehsil. There are only two tehsil with medium size of settlement varies from Kagal 2739 persons and Gadhinglaj 2206 persons in Dudhganga and Hiranyakeshi River plain area.

Low Mean Size

There are 7 tehsil out of 12 in Kolhapur district fall low average size of settlements viz. Gaganbavda 795 persons, Shahuwadi 1356 persons, Panhala 1950 persons, Radhanagari 1752 persons, Bhudargad 1319 persons, Ajra 1062 persons and Chandgad 1200 persons. It is shows that the size of villages is largely determined by the topographic factors, social structure of the society and the productivity of land. Hilly and dissected forested tracts have generally small size villages, which are largely inhabited by the Nomadic Tribe. The tracts, inaccessible by road and railways, cannot support large villages. The western parts of

Kolhapur district which have undulating topography are inaccessible due to absence of railway and to some extent Major State and National Highway.

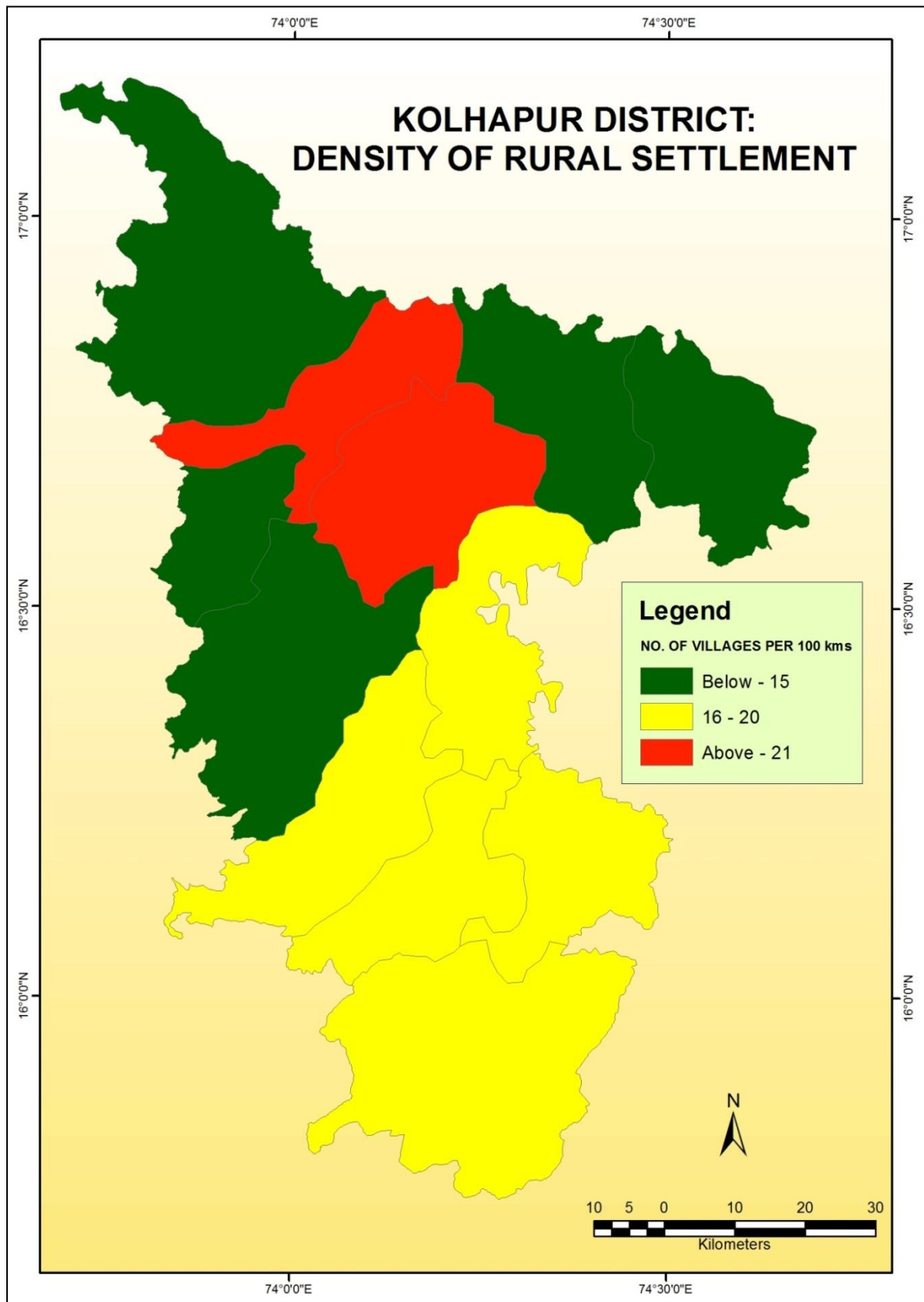


Fig. 3

Density of Rural Settlement

Table no. 1 and fig. no 3 is reveals that density of rural settlement in Kolhapur district. The density of village varies from Hatkanangale and Shirol (11villages) to Panhala (23 villages) per 100 kms. The density of rural settlement is categorized in to three category viz. High (Above 21 Villages), Medium (15-20 villages) and Low (Below 15 villages) per 100 kms. The average rural settlement density of Kolhapur district is 16 villages per 100 kms. The above district averages there are 7 tehsil out of 12 viz. Panhala, Karvir, Kagal, Bhudargad, Ajra, Gadhinglaj and Chandgad. It has been observed that in western and eastern tehsil of district settlement is low density.

High Settlement Density

Above 21 villages per 100 kms are shows high settlement density and it is found in Panhala (23 Villages) and Karvir (22 villages) tehsil. These two tehsil are located in central part of district. The total geographical area of Panhala and Karvir tehsil is very less as compeer to other tehsil and observed more Number of settlements.

Medium Settlement Density

Medium settlement density 16-20 villages per 100 kms are found in five tehsil viz. Kagal (16 villages), Bhudargad (17 villages), Ajra (18 villages), Gadhinglaj (19 villages) and Chandgad (16 villages). These all villages are located in southern side of district.

Low Settlement Density

There are five tehsil recorded in low (Below 15 villages) settlement density, viz. Hatkanangale, Shirol (11 villages), Bavda (13 villages), Shahuwadi (14 villages) and Radhanagari (15 villages) per 100 kms. Western side of tehsil are located in hilly area as well as Hatkanangale, Shirol tehsil are 'dry point' settlement at hence settlement density is low.

Conclusion:

In Kolhapur district Hatkanangale, Shirol Shahuwadi and Bavda tehsil having high spacing. The low land area of Hatkanangale and Shirol tehsil is facing every year flood problem at hence settlement are located dry point area. As far as in Shahuwadi and Bavda tehsil rural settlement having high spacing because of these area is hilly area and settlement are located near source of water. It means that water is a determining factor of rural settlement and its effect is also favourable either unfavourable. In the time of Maratha Empire Karvir and Panhala are administrative place. As compeer to number of settlement total geographical area of tehsil is very less, at hence in these tehsil settlement are found clustered type.

In Karvir, Hatkanangale and Shirol villages which are located in the vicinity of urban centres are large in size in comparison to interior villages. The areas of these tehsil resources are available and accessible to open plain topography have high and medium size villages. The tehsil of Hatkanangale, Karvir and Shirol are located in plain area of Panchaganga and Krishna River. Consequently the topography allows the medium and large size settlement. It is shown that western side of Kolhapur district the size of villages is largely determined by the topographic factors, social structure of the society and the productivity of land. Hilly and dissected forested tracts have generally small size villages, which are largely inhabited by the Nomadic Tribe. The tracts, inaccessible by road and railways, cannot support large villages. The western parts of Kolhapur district which have undulating topography are inaccessible due to absence of railway and to some extent Major State and National Highway.

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