

**AN ANALYSIS OF SPATIO-TEMPORAL DISTRIBUTION OF TRIBAL POPULATION IN
PALGHAR DISTRICT*****Dr. Pranoti Bhimrao Sonule, ** Dr. Ramesh Hari Gavit & *** Dr. Rajendra O. Parmar****Research Scholar, **Assistant Professor, Department of Geography University of Mumbai, Mumbai, Maharashtra.***** Changu Kana Thakur Arts, Commerce and Science College, New Panvel, Raigad, Maharashtra.***Abstract:**

The analysis of density and distribution of population is fundamental for understanding the population geography of any area. The population distribution is a spatial arrangement of people in a region, which is mainly based on the aggregate of investigation about the people within small areal units of region. Population distribution is a dynamic which is ever changing, and its causes and effects vary in spatio-temporal frame. Keeping this aspect in view the present study focuses on the status of distribution, density, and concentration in the newly formed Palghar district of Maharashtra state which is largely dominated by tribal population. The present work is an attempt to study spatio-temporal distribution of tribal population at taluka level in Palghar district based on census data of India from 1991 to 2011.

Keywords: *Spatio-Temporal Distribution, Density of Population.*

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Introduction:

The distribution of population is the dispersion of population in study area. Population distribution is an important aspect while studying population density and other implied socio-economic problems in geographical area. Similar to the distribution of any other natural resources, the distribution of population on the surface of the earth is uneven. The studies related to distribution tell us how many people live in which area, which area has high concentration of population and which area has low concentration of populations. Political, economic, and social aspects of life are influenced by distribution of population. The various geographical factors like nature of relief, amount of rainfall, agricultural productivity, availability of water, accessibility etc. influence the distribution of population. The influence of these factors is clearly seen in the socio-economic development of the region.

Distribution of population is studied in terms of the density, i.e., number of people per sq.km. assuming that the population is evenly distributed over a given territory. The density varies not only from country to another within a continent, but also from one part to other within a country. The regional variation in the distribution and density of population is largely affected by various physical, economic, social, and cultural factors.

Objectives:

To analyze the spatio-temporal variations in the distribution and density of tribal population at tahsil level in Palghar district

Data base and Methodology:

The present study is based on census data of two decades from 1991 to 2011. Analysis of data is done using quantitative techniques and depicting the same through appropriate cartographic applications for bringing out the nature of spatial distribution. Population density has been calculated to analyze man -land ratio by using density equation given below: -

$$1) \text{ Density of Population} = \frac{\text{Total Population}}{\text{Total Area}}$$

Study Area:

Palghar district is in the northern part of Maharashtra state in Western India. Government of Maharashtra has announced the formation of this 36th district on 1st August 2014, with a new Palghar district carved out from the old Thane district [1]. The newly formed Palghar district has eight talukas. These are Mokhada, Talasari, Vasai, Vikramgad, Palghar, Dahanu and Vada. The Palghar district extended between 19° 17' 15” north and 20° 13' 45” north latitudes and 72° 38' 35” east and 73° 30' 25” east longitude (Fig.1.).

Location Map

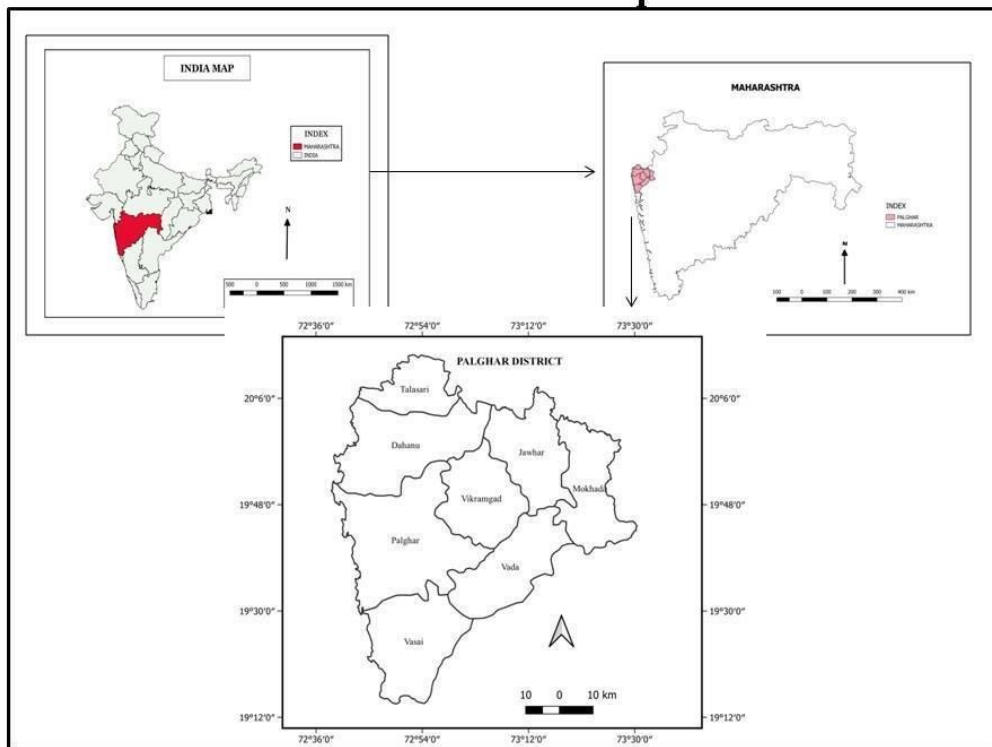


Fig.1: Location of Study Area

Analysis of Result and Discussion:

Distribution and density of population is one of the important aspects of population in any region. The present study attempts to understand the changes in the distribution of tribal population during the period 1991 to 2011 of Palghar district given table 1.

Distribution of Tribal Population:

Table No.1 shows the tehsil wise distribution of tribal population and its variation in Palghar district of Maharashtra during 1991 to 2011. More than 10 percent of tribal population exists in central and northern part of study region. The highest percentage of tribal population are in Dahanu tahsil (25.35) followed by Jawhar (17.80) Palghar (16.89) and Talasari (12.06). The availability of employment, industrial development, educational facilities, and urbanization are main factors for population concentration. Tribal populations below 10% in 1991 are in Vada (8.67) and Vasai

(8.31) tahsil. These two tahsils have minimum rainfall and irrigation and cultivation and related agricultural activities are barely possible by the tribes. Transport and communication network are not well developed in these Two tahsils therefore urbanization process was not initiated. Population distribution is relatively less.

Table 1

Palghar district: Percentage of Tribal Population Distribution (1991-2011)

Sr. No	Name of Tahsils	Total Population			Variation 1991-2001
		1991	2001	2011	
1	Talasari	12.06	12.81	12.54	0.48
2	Dahanu	25.35	24.38	24.85	-0.5
3	Vikramgad	0	12.31	11.30	0
4	Jawhar	17.80	11.49	11.49	-6.38
5	Mokhada	10.89	7.27	6.87	-4.02
6	Vada	8.67	8.48	9.09	0.42
7	Palghar	16.89	15.10	15.04	-1.85
8	Vasai	8.31	8.12	8.79	0.48
District Total		100	100	100	0

Source -District Census Handbook, Thane District (1991, 2001, 2011)

In 2001, three tahsils in the study region have below 10% tribal population namely, Vada (8.48), Vasai (8.12) and Mokhada (7.27). The population between 10-15 percent was observed in Talasari (12.81) Vikramgad (12.31) and Jawahar (11.49) tahsils. Population more than 15% was observed in Dahanu (25.38) percent and Palghar (15.10) tahsils in Palghar district. Transport facilities are the significant factor for distribution and clustering population. Employment opportunities also had an impact with respect to population distribution. People settled in regions where provision of employment existed.

Dahanu tahsil has highest percent of tribal population accounting for 24.85% in 2011 followed by Palghar (15.04), Talasari (12.45), Jawhar (11.49), and Vikramgad, (11.30). According to 2011 census, the lowest percent of distribution of tribal population was observed in Mokhada (6.87) tahsil. Below 10% population was observed in Vada (9.09) and Vasai (8.79) in the study area. Population variation during 1991-2011 varies from highest percent in Talasari (0.48) tahsil and lowest percent in Vada (0.42) tahsil. Remaining tahsil recorded minus variation in population during 1991-2011 in the study region.

Density of Scheduled Tribe Population (1991):

Arithmetic density is a ratio between total tribal population and total area of the area. This is useful in understanding the relationship between man and land. Table 2 shows the arithmetic density for Palghar district for 1991. It has been observed that the study area has 272 tribal persons per sq.km. However, there is wide variation in density of tribal population at tahsil level in Palghar district. The highest density was recorded in Jawhar tahsil accounting for 757 persons per sq km followed by Dahanu (648) tahsil. The density between 150-350 persons was observed in Talasari (245) and Palghar (297) tahsil in the study region. The density below 150 persons was identified only in Vasai (54) tahsil. The density above 350 persons was found in Dahanu (648), Jawhar (757), Mokhada (447) and Vada (405) tahsils of Palghar district (Fig 2 A). Table no 2 exhibits arithmetic density for tribal population in 2001 for the study region. It has been observed that the study area has (145) persons per sq. km. Highest arithmetic density was recorded in Talasari tahsil accounting for 369 persons per sq km. The density between 150 to 350 persons was in Dahanu (171), Vikramgad (189) and Jawahar (150) tahsils lying in the central part of study area.

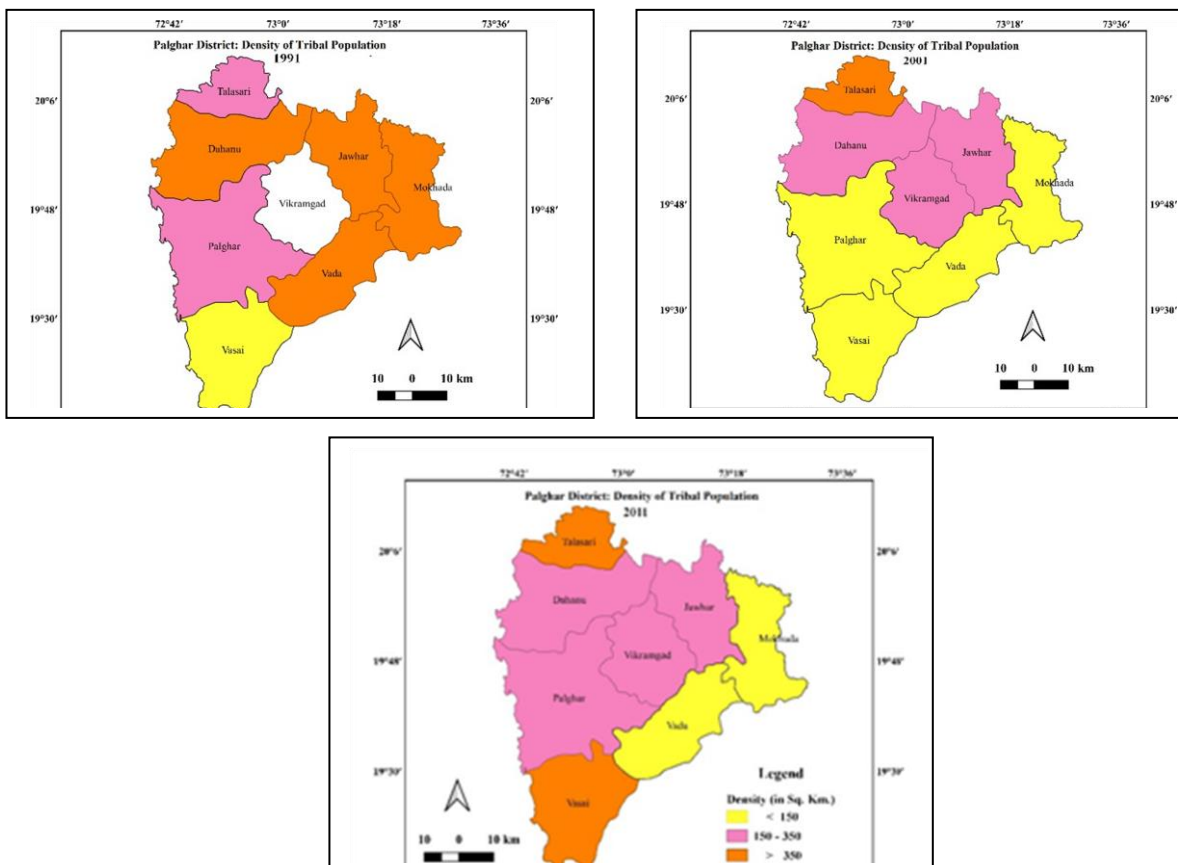
Table: 2
Palghar District: Density of Tribal Population (1991-2011)

Sr. No.	Name of Tahsils	Year 1991	Year 2001	Year 2011	Variation 1991-2001	Variation 2001-2011
1	Talasari	245	369	549	124	225
2	Dahanu	648	171	294	-477	123
3	Vikramgad	0	189	239	0	50
4	Jawhar	757	150	208	-607	58
5	Mokhada	447	125	149	-322	24
6	Vada	405	92	136	-313	44
7	Palghar	297	101	172	-196	71
8	Vasai	54	120	437	66	317
District Total		272	145	232	-127	87

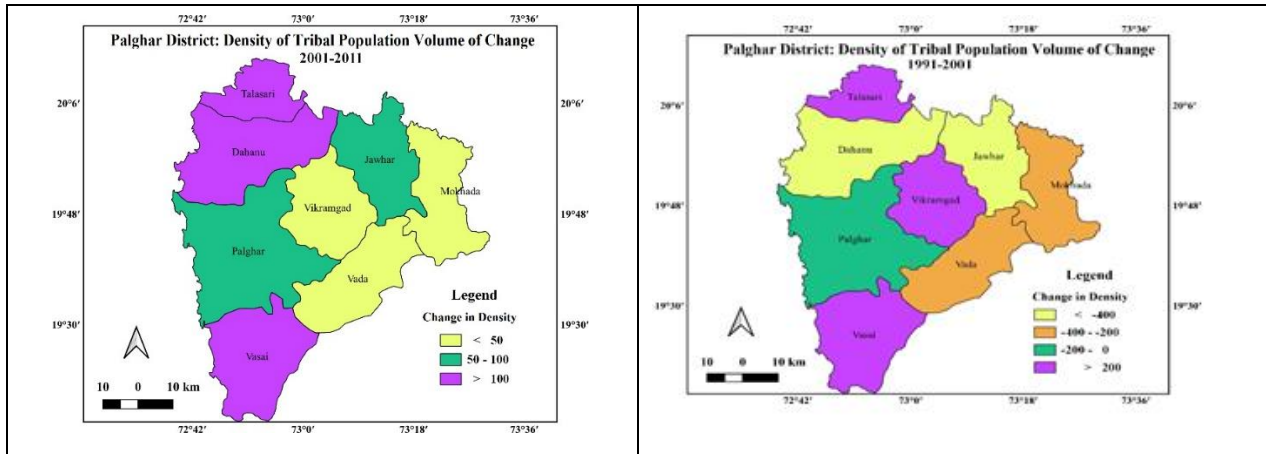
Source: District Census Handbook, Thane District, 1991,2001, 2011

The density below 150 persons was identified in Mokhada (125), Vada (92), Palghar (101), Vasai (120) tahsils in Palghar district of Maharashtra.

According to 2011 census Talasari has the highest density (549), person per sq km. followed by the Vasai (437) tahsil. The arithmetic density between 150 to 350 persons was observed in Dahanu (294), Vikramgad (239), Jawhar (208), and Palghar (172) tahsil in the study area. The density of tribal population below 150 persons was identified in Mokhada (149), and Vada (136) tahsils which are in southeastern part of the study region. Table .2 fig 2 A explains the density of ST population per sq km for Palghar District for the year 1991 to 2011 and its variation during this period. Talasari tahsil has highest variation in population density of 124 persons in 2001 and Vasai 317 persons in 2011 and the lowest variation was in Vasai (66) tahsil in 2001 and Mokhada (24) in 2011.



The minus variation in density was recorded in Dahanu (-477), Jawhar (-607), Mokhada (-322) Palghar tahsil (-196) and Vada (-313) tahsil in 2001. The variation in density below 150 was recorded in Dahanu (58), Mokhada (24), Vada (44) and Palghar (71), tahsil in 2011. Talasari tahsil has more than 150 in density variation in 2011. The growth of Arithmetic density was found declining in the central part of study region in 2001 and 2011. These tahsils are agriculturally prosperous along with industrial and allied growth (Fig.2B).



Conclusions:

Distribution of population means the dispersion of population in the study region. In 1991 census, Dahanu tehsil has recorded the highest population (178878), and Mokhada has recorded lowest tribal population (58641) in the study region. The distribution of tribal population is directly influenced by availability of transport, industrial development, irrigation, fertile soil, and education facilities in the study region.

It is observed that the study region shows density of tribal population 273 persons per sq.km. In 1991. There are, however, wide variation in density at taluka level in the study region. The highest density was recorded in Talasari (549) tahsil in 2011. The density of Scheduled tribe population is influenced by altitude. Talasari tahsil has highest variation in tribal population density in 2011 as compared to 2001 census.

Tribal population concentration index is quite uneven in the study region. It varies from tahsil to tahsil throughout the region. According to 1991 census, Jawhar tahsil was the most thickly populated with PCI of 1.58 and Vasai was the most thinly populated with PCI of 0.45 only. According to 2011 Dahanu tahsil recorded highest PCI (2.89) and Vasai tahsil recorded lower (0.20) concentration index.

Tribal population is highly concentrated in the Northern and eastern part of the study area. Talasari, Dahanu, Vikramgad, Jawhar and Mokhada have increased tribal concentration during 1991-2001 and decreased in 2001-2011 in the same tahsils of the study region except Dahanu tahsil.

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