Sustainable Development for Empowerment of Tribes in Nashik District using Geospatial Techniques

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Abstract: The present paper based on the 30 years census data insights into the distribution of tribal population and growth rate of tribal population in Nashik district. Apart from this, the percentage distribution of tribal population has also been worked out and depicted on the map to highlight their concentration in different districts, both for 1981 and 2011. According to the 1981 census in Nashik district, there are 23.45% Tribal people out of them 25.95% male and 23.99% female. According to the 2011 census in Nashik district, there is 25.61% tribal population in it the male percentage is 25.10% and the female percentage is 26.16%. In Nashik district the population growth rate is 122.95 Percent. This sort of study of distribution and regarding their core and peripheries is useful for the tribal planning.The present research paper is an attempt to distribution of Tribal Population ,analyze the growth rates of tribal population, Tribal Literacy, Tribal Sex Ratio, Occupation structure of Tribal Population , tribal concentration, Sustainable Development Planning Strategy, Tribal development Schemes etc.

Keywords: *Geospatial techniques, Tribal development, Nashik District.*

Introduction

'Adivasis' is a popularly name of the tribal people; in fact, it is almost equal to the tribal population of nineteen countries with substantial population (Stewart 1992; Toppo et al. 2016; Tang and Tang 2001). The population commission of United Nations considers the ability of both read and writes a simple message with understanding in any language a sufficient basis for classifying a person as literate. Simons and Malmgren (2008) considers the basis of length of schooling not a valid measurement of educational accomplishment. Panda (2017) he also disapproves of the ability to read and write ones name in the language of his country as the criterion for defining a literature. Jackson (1999) observed that of the rate of literacy transition was low. Dockry (2016) rightly observes that sex ratio was an index of economy prevailing in an area and was a useful tool for regional analysis. Rightly remarked that the proportion of the two sexes is fundamental to the geographic analysis of an area because it is not only an important feature of the landscape, but it also influences the other demographic elements significantly and as such provides and additional means for analyzing the regional landscape. The changes in gender composition largely depend on social, economic and cultural pattern of the society. The sex ratio influences the economic conditions migration, occupation structure, marriage status fertility, and mortality and growth rate of population (Aasland and Flotten 2001; Dercon and Krishnan 1996).

The government agency has identified the tribal zone of the district for the purpose of implementation of various schemes there are several schemes of government for achieving sustainable development of the tribes (Wiek et al. 2011; Backstrand 2003; Balakrishnan and Kumar 2017; Baijulal 2017; Luo and Qi 2009). It has been observed that the farmers get very low output from agricultural activity. Taking into account the difficulty, lack of capital for agricultural activity (De 2017; Jannat et al. 2019; Welsh and Murray 2003) the government has designed the scheme to give subsidy for the purchase of farm implements under this scheme farmers are provided with farm equipment, PVC pipes, irrigation equipment and pair of bulls and an aid for purchasing seeds and fertilizers etc, (Barth et al. 2017; Mishra 2019; Barrett et al. 2001).

The tribal population of India is more than the total population of France and Britain and four times that of Australia. If all the Tribals of India had lived in one state, it could have been the fifth most populous state after Uttar Pradesh, Bihar, West Bengal and Maharashtra. There are about 427 tribal communities scattered all over the country (Vora 2015; McGrail and Humphreys 2014; Mallick and Routray 2001; Islam et al. 2014; Yin, et al. 2018; Agoramoorthy and Hsu 2009; Yang et al 2006).The largest concentration can be found in the African continent and the second largest concentration is in India. The total population of tribals in India is more than 67.6 million, which is nearly 8.6 percent of the

total population of India. The largest group comes from the Gonds, Santhals, Bhils, Orans, Hols, Mundas, Boro- Kacharis, Bhotias, Tharus, Kharwars, Jaunsaries and the Nagas, concentrated in the states of Assam, Andhra Pradesh, Bihar, Orissa, Gujarat, (Shaw 2020) Madhya Pradesh, Rajasthan, Tripura, Maharashtra, Manipur, Arunachal Pradesh, Meghalaya, Uttar Pradesh, Nagaland and West Bengal.

This present study of distribution and regarding their core and peripheries is useful for the tribal planning. The present research paper is an attempt to distribution of Tribal Population; analyze the growth rates of tribal population, Tribal Literacy, Tribal Sex Ratio, Occupation structure of Tribal Population, tribal concentration, Sustainable Development Planning Strategy, Tribal development Schemes etc.

Study Area

Nashik dist. of Maharashtra has been selected as the study area. Nashik District is situated partly in the Tapi basin and partly upper Godavari basin. It lies between 19^0 33' to 20^0 53' North latitude and 73^0 15' to 75^0 16' East Longitude (**Fig.1**). Nashik

District has an area of 15,530 sq. km and population of 61, 07,187 as per the 2011 census. There are 15 tahsil were included in the Nashik District. The fifteen tahasils of the district include Satana, Deola,(created on 26.06.1999) Malegaon, Surgana, Kalwan, Peint, Dindori, Trimbakeshwar, (created on 26.06.1999) Igatpuri, Sinnar, Nashik, Yevala, Niphad, Chandvad Nandgaon. Among these Malegaon is largest tahashil with 12% area and Peint is smallest tahasil with 3.63% area in the district.(**Fig.2 and 3**) In the extreme north is selbari range, which approximately forms and boundary between Nashik and Dhule district. Next is the Satmala range which runs right across district. Kalsubai range is located in the south part of the district. The district is surrounded by Dhule district in the north. Jalgaon and Aurangabad district in the east. Ahmednagar district in the south and Thane district in the south-west and Gujarat state in the north-west. The district is drained by two chief rivers the Girna and the Godavari and their tributaries the watershed between these being the satmalas range. Apart from these there are a number of small konkan rivers draining west wards into the Arabian sea.
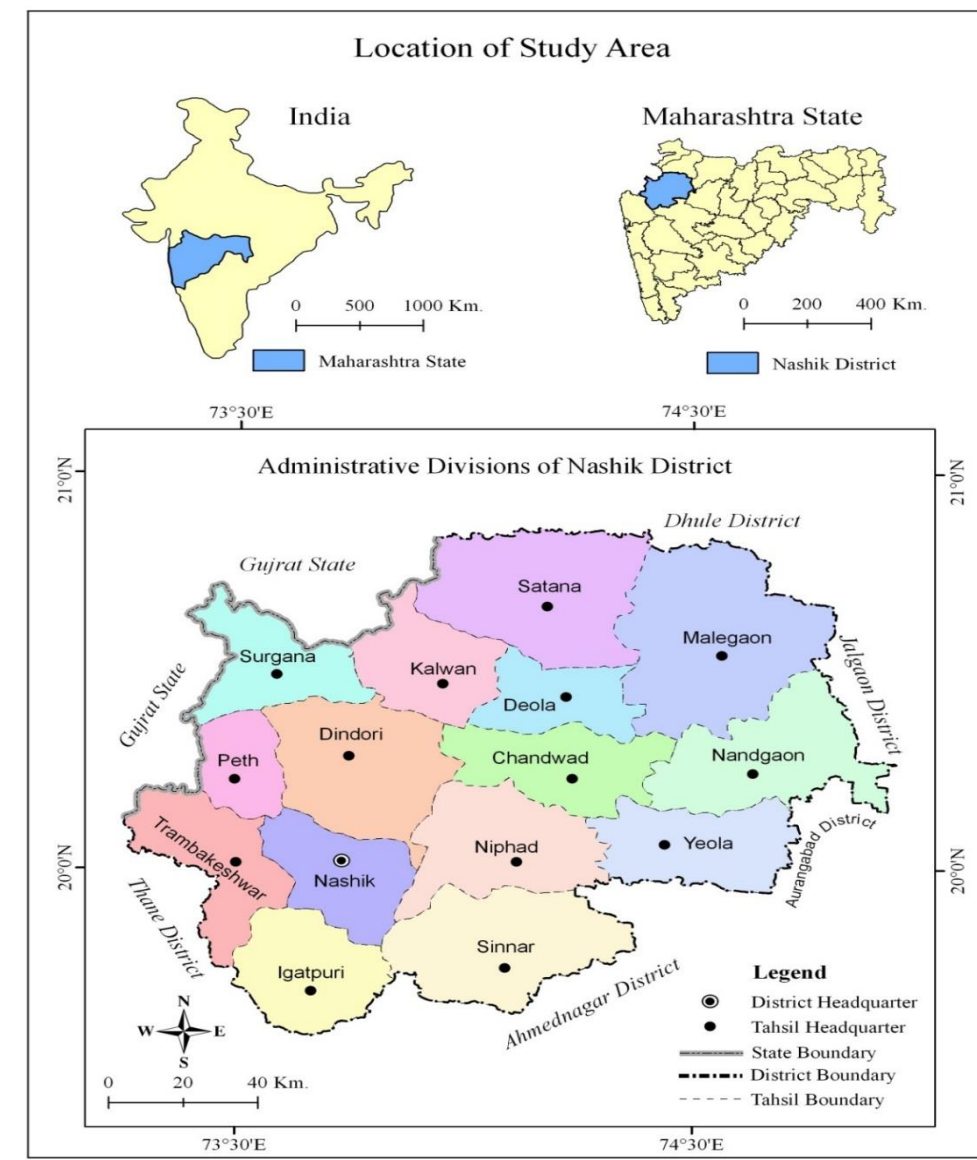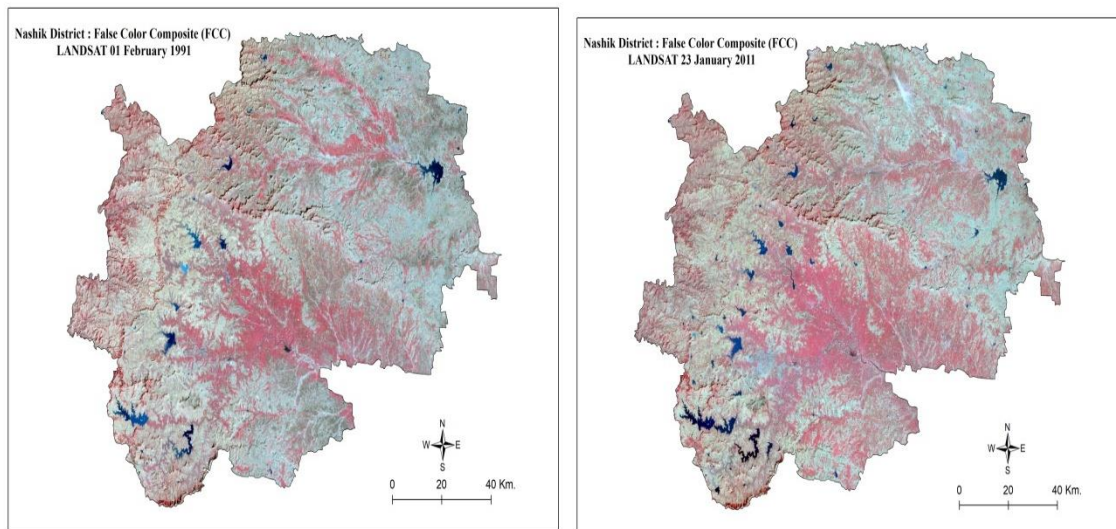

Fig.1: Study Area
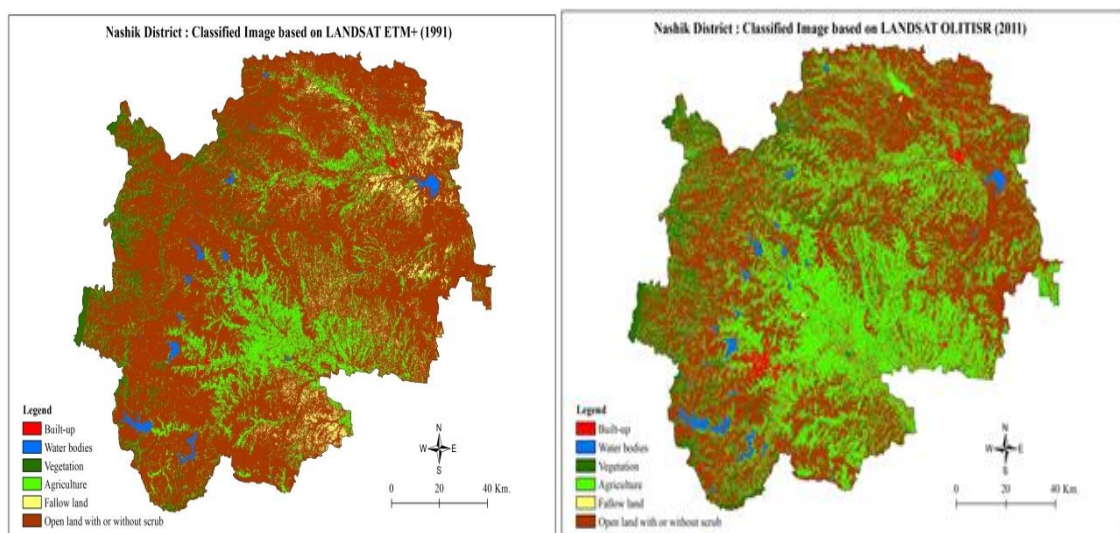
Fig.2: FCC 1991, 2011

Fig.3: LANDSET ETM 1991, 2011

3. Sources of data and Methodology

For present study data regarding population have been collected at tahasil level for total and tribal population for the year 1981 and 2011. The data for study have been collected from District Census Handbook Nashik district for the year 1981 and 2011. Population growth is one of the important aspects of population study. The changes in population were found out because of birth, death and migration any change in population over a given period with reference to a region, respective of increase or decreases in population is called population growth (Candana R.C).

The population growth rate can be computed by following formula:-

$$population\ growth\ rate: R = \frac{P_2 - P_1}{P_1} \times 100$$

Where, P_1 = population of previous decade

P_2 = population of current decade

Volume of change has been calculated among different demographic characteristic

Ramotra(2011)The index of concentration of Tribal population is also calculated by using the location   quotient Method (Mahmood 1977) as given below

L.Q = <u>Percent of tribal population to total population in a Tahsil</u>

Percent of tribal population to total population in a District

Where the value of location quotient is beyond 1, the concentration of tribal population would be high and dispersed in the area where the value is less than 1 and where the value is exactly 1, and then it is balanced one. Tribal Concentration Index in Nashik District:

Result and Analysis

Distribution of ST population in Nashik District (1981-2011)

According to the 1981 census in Nashik district the tribal people is 23.45 percent. Peth (93.68) and surgana (91.77) tahsils has a highest tribal population in the district on the contrary the same percentage is less than 50 percet , in the remaining tahsils which is kalwan (49.45), Dindori (49.28) & Baglan (29.84). The lowest tribal population is in Yevola (6.81) tahsil . According to the 2011 census in Nashik district there are 25.61 percent tribal

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people. Peth (96.44) and Surgana(96.51) tahsils have a highest tribal population, which is greater than 90 percent. Trambakeswar and Kalwan tahsil tribal people having 80.20 percent and 68.95percent respectively (**Table.1,Fig. 4**).

Table 1: Distribution of ST population in Nashik District (1981-2011)

Sr.No.	Name of Tehsils	1981 Census			2011 Census		
		Total	Male	Female	Total	Male	Female
1	Baglan	29.84	29.34	30.35	40.02	39.43	40.63
2	Chandwad	13.95	13.61	14.30	19.98	19.57	20.43
3	Devola	N.A	N.A	N.A	20.84	20.37	21.34
4	Dindori	49.28	48.96	49.61	55.57	55.07	56.10
5	Igatpuri	39.82	39.59	40.5	40.47	40.19	40.76
6	Kalwan	49.45	49.06	49.84	68.95	68.06	69.87
7	Malegaon	8.71	8.54	8.88	10.14	10.10	10.19
8	Nandgaon	10.20	9.97	10.42	15.27	15.07	15.49
9	Nashik	13.05	12.48	13.71	10.42	10.26	10.59
10	Niphad	14.92	14.64	15.21	19.42	19.05	19.81
11	Peth	93.68	93.51	93.84	96.44	96.31	96.37
12	Sinnar	10.08	10.08	10.07	13.35	13.17	13.54
13	Surgana	91.77	91.51	92.04	96.51	96.34	96.67
14	Trimbak	N.A	N.A	N.A	80.20	79.52	80.89
15	Yevola	6.81	6.73	6.00	10.72	10.41	11.04
	Nashik	23.45	22.95	23.99	25.61	25.10	26.16

Source: District census handbook of Nashik for 1981 to 2011,Note-i) N.A- Data not available

However below 50 percent there are various Tahsil these are Baglan, Malegaon, Chandwad, Nandgaon, Nashik, Niphad, Yevola, Igatpuri, Sinnar and Devola etc

4.2 Distribution of male and female ST population

According 1981 census Peth Tahsil has 93.68 perent male tribal population.It followed by Surgana has 91.77 percent and other tehsil have this ratio below 50 percent. According to 2011census the male tribal population is above 90 percent in Surgana, Peth and Ttrambakeswar is Tahsil. It is (96.34), (96.31) and (39.52), respectively. According to 1981 census the Nashik district has 22.93 percent female populations however according to 2011 census the ratio is 26.16 percent.

4.3 ST Population Growth Rate in Nashik District (1981-2011)

According to the 1981 census, there are 701647 tribal people in Nashik District. In 2011 the same population is 1564369. In 1981-2011 the decadal tribal population growth rate is 122.95 percent in the study region . Yevola, Nandgaon and Chandwad have more than 150 percent population growth rate, which is (188.54), (155.38) and (151.76) respectively. In between 100 to 150 percent, There are various tahsils are sinner (137.71), Niphad (120.13), Nashik (123.65), Dindori (117.19), Surgana (123.20), Malegaon (115.27) and Bagaln (106.39) tahsils. In between 50 to 100 percent , there are Kalwan (86.13) and Igatpuri (54.10) tahsils on the other hand Peth tahsil has 18.28 percent which is below 50 percent .The male population growth rate is highest in Yevola tehsil which is 186.42 percent on the contrary Peth tahsil has 24.45 percent . The Nashik district has male population growth rate is 123.56 percent.In 1981-2011 decade the female population growth rate Nashik district is 122.23 percent. It is highest in Yevola tahsil which is 190.71 percent. it is followed by Nandgaon (151.29), chandwad (150.47) tahsil respectively. The lowest population growth rate is Peth tahsil whichis24.87percent,(**Table.2**)

Table.2 ST Population Growth Rate in Nashik District (1981-2011).

Sr.No.	Name of Tehsils	1981 Census			2011 Census			Volume of change		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
1	Baglan	72602	36610	35992	149846	76144	73702	106.39	107.98	104.10
2	Chandwad	18576	9297	9279	47140	23898	23242	153.76	157.05	150.47
3	Devola	N.A	N.A	N.A	30115	15344	14771	-	-	-
4	Dindori	80783	40826	39957	175454	88942	86512	117.19	117.85	116.51
5	Igatpuri	66582	33581	33001	102608	51851	50757	54.10	54.40	53.80
6	Kalwan	77179	38972	38207	143656	72228	71428	86.13	85.33	86.95
7	Malegaon	45047	22672	22375	96973	49542	47431	115.27	118.51	111.18
8	Nandgaon	17276	8686	8590	44121	22535	21586	155.38	159.44	151.29

9	Nashik	81816	41970	39846	182984	94667	88317	123.65	125.55	121.64
10	Niphad	43524	21901	21623	95810	48544	47266	120.13	121.65	118.59
11	Peth	97707	46656	46051	52976	51321	57508	18.28	24.45	24.87
12	Sinnar	19456	9896	9560	46249	23711	22538	137.71	139.60	135.75
13	Surgana	76024	38345	37679	169688	84655	85033	123.20	120.77	125.67
14	Trimbak	N.A.	N.A	N.A	135078	67836	67242	-	-	-
15	Yevola	10075	5091	4984	29071	14582	14489	188.54	186.42	190.71
	Nashik	701647	354503	347144	1564369	792547	771822	122.95	123.56	122.33

Source- District census handbook of Nashik for 1981 to 2011
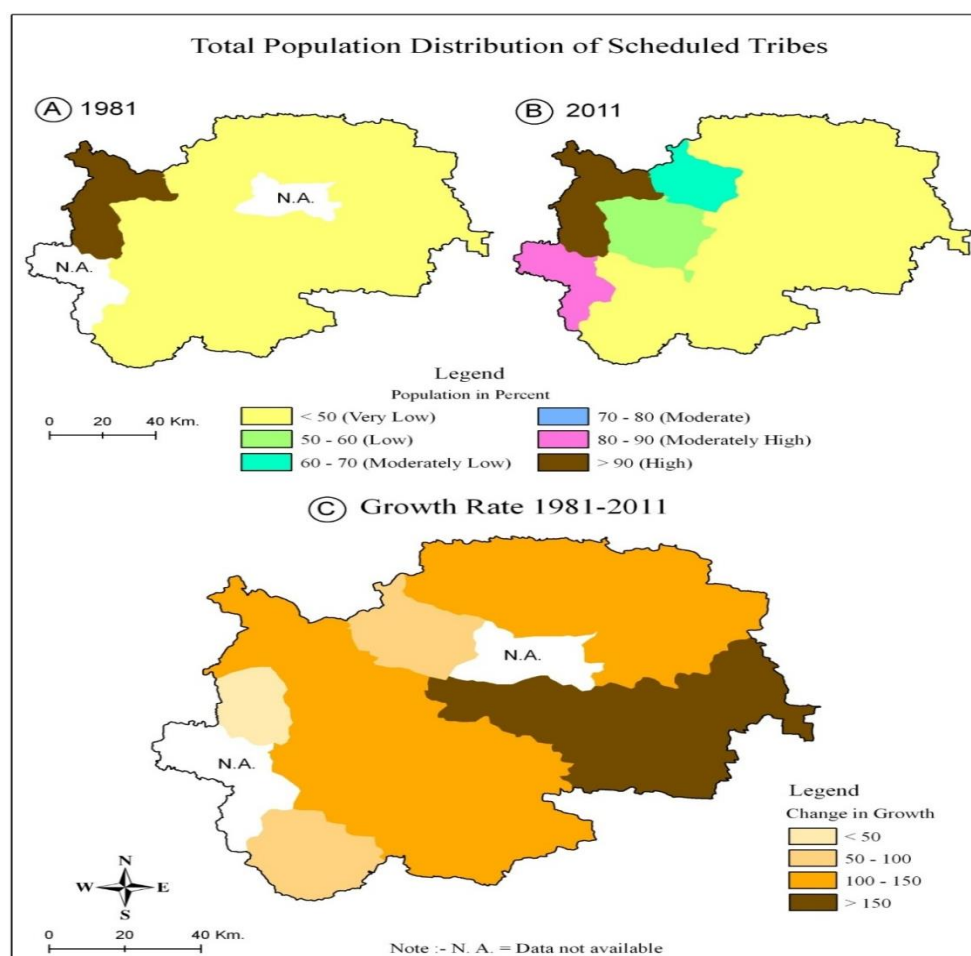

Fig.4: ST Population Growth Rate

Tribal Literacy:

Table.3 indicates total tribal population literacy in study region. According to the 1981 census in Nashik district the total tribal literacy is 16.74 percent. The highest tribal literacy is found in Dindori (41.67) Tahsil and in Chandwad (13.62), Malegaon (13.65), Peint (15.18), and Surgana (14.51) Tahsil it looks like lowest in percentage. This indicates tribal community is lacking behind in their life. Tribal literacy is very less as compared to general population literacy in study region (74.40).In 1981 the literacy between 40 to 50 percent is identified only Dindori (41.67) Tahsil, Baglan Tahsil having the tribal literacy between 20 to 30 percent, whereas other Tahsil have less literacy in the study region below 20 percent.

According to the 2011 census in Nashik district the total tribal literacy is 55.67 percent. In Peint tehsil this percentage is 59.61.It followed by Nashik, Dindori, having tribal literacy 59.30 and 59.25 percent respectively (Fig.).The lowest total tribal literacy is in Nandgaon Tahsil which is 41.72 percent. It followed by Malegaon (43.05), and Yevla (47.67) Bagalan (48.83) and Kalvan (50.33) tahsils respectively.Tribal literacy has increased mainly in tribal concentrated area and then it decreases towards non-tribal areas because of tribal people have migrated in cities for employment and impacting education. In decades 1981-2011 census the change volume in total tribal literacy is highest in Peint tahsil. The total tribal literacy change in volume percentage is 44.43 percent. It followed by Surgana and Chandwad tahsil having percentage 42.2 and 41.21 respectively. It observed that tribal

concentrated tahsils literacy volume of change is high in the study region. (**Table.3**).

Table .3 Literacy of Tribal Population in Nashik District (1981-2011)

Sr.No	Tahasils	1981 Census	2011 Census	Volume of change
1	Baglan	29.86	48.83	18.97
2	Chandwad	13.62	54.83	41.21
3	Deola	N.A	52.48	N.A
4	Dindori	41.67	59.25	17.58
5	Igatpuri	16.09	55.63	39.54
6	Kalwan	15.76	50.33	34.57
7	Malegaon	13.35	43.05	29.7
8	Nandgaon	15.07	41.72	26.65
9	Nashik	21.54	59.30	37.76
10	Niphad	17.97	55.67	37.7
11	Peint	15.18	59.61	44.43
12	Sinnar	16.44	51.96	35.52
13	Surgana	14.51	56.71	42.2
14	Trimbak	N.A	52.23	N.A
15	Yeola	16.95	47.67	30.72
	Nashik	16.74	55.67	38.93

Source- District Census Handbook of Nashik for 1981 to 2011.

Concentration Index

The concentration of tribal population for each Tahsil in study region is calculated (Table No.1) for 1981 and 2011. In 1981 the high concentration of tribal population was recorded in Peint Tahsil (3.99) followed by Surgana (3.91),Dindori (2.10) ,Kalwan (2.11), Igatpuri(1.76) and Baglan (1.27) tahsils indicating more tribal concentration. It is observed that tribals are found in hilly and forest area. The remaining tahsils, namely Niphad (0.64), Chandwad (0.59) Nashik (0.56), Sinner (0.43), Nandgaon (0.43), Malegaon (0.37) and Yeola (0.29) have value less than 1.It showing less tribal concentration (**Table 4**). In 2011 the high concentration of tribal population was recorded in Surgana Tahsil (3.77) followed by Peint (3.76) ,Trimbak (3.13) ,Kalwan (2.69) ,Dindori(2.17), Igatpuri (1.58) and Baglan (1.56) tahsils presenting very high tribal concentration and Deola ,Malegaon, Nandgaon, Chandwad, Nashik, Sinnar,Niphad and Yeola tahsils have found value less than 1 it showing less tribal concentration.

Table .6 Tribal Population Concentration Index in Nashik District 1981-2011

Sr.No.	Name of Tahsil	Concentration index 1981	Concentration index 2011	Volume of change
1	Baglan	1.27	1.56	0.29
2	Chandwad	0.59	0.78	0.19
3	Deola	N.A	0.81	-
4	Dindori	2.10	2.17	0.07
5	Igatpuri	1.76	1.58	-0.18
6	Kalwan	2.11	2.69	0.58
7	Malegaon	0.37	0.39	0.2
8	Nandgaon	0.43	0.59	0.16
9	Nashik	0.56	0.40	-0.16
10	Niphad	0.64	0.75	0.11
11	Peint	3.99	3.76	-0.23
12	Sinnar	0.43	0.52	0.09
13	Surgana	3.91	3.77	-0.14
14	Trimbak	N.A.	3.13	-
15	Yeola	0.29	0.41	0.12
	Nashik District	2.55	2.74	0.19

Source :District Census Handbook Nashik District.

It found slight increase of tribal concentration in Kalwan (0.58), Baglan (0.29), Chandwad (0.19), Nandgaon (0.16), Yeola (0.12), and Niphad (0.11) tahsils respectively.Peint (-0.23), Igatpuri (-0.18), Nashik (-0.16), and Surgana (-0.14) tahsils have decreased tribal concentration from 1981 to 2011. Tribal population is highly concentration in west part in the study region. (Table.6 Fig.9. C).Tribal population concentration index decrease in Nashik (-0.16) Tahsil because of separation of Trimbak Tahsil

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from Nashik Tahsil. Peint (-0.23), Igatpuri (-0.18), Surgana (-0.14) tahsils have also decrease concentration index because of tribal people migrated for job to urban area.

Tribal Sustainable Development Planning Strategy

The planning strategy suggested here is based on the novel that development of the environment and human resources should be achieved hand in hand. It is observed in the study that the tribal people are dependent on agricultural and forest resources. With the degradation of the environment, their resources have deteriorated. Therefore, it is accomplishing sustainability in economic activated bared on forest and agricultural resources. The present study has revealed that there is urgent need to develop human resources in the tribal people in achieving socio- economic development in the region. It would also be suitable to solve the problems. After solving the demographic problems it is expected that the development of their section of society may be geared up. With these two visions in mind an integrated planning strategy may be useful to resolve the problems of tribal peoples in the district. The integrated approach includes both government and non-government agencies to work for development of people and their environment in a sustainable manner. It is suggested here not to concentrate only on the problems of the people, but also on the strength of the people under study. The present investigation attempts to design, planning strategy in such a way that it would integrate the traditional strength of tribal to resolve their own problems, once the strings are properly understood and use in the development process. It becomes easy to identify areas in which support from outside agencies can be identified thus the strength of both given environment and the traditional behavior or tribal people must be taken into account while suggested various programs. Thus the planning strategy based on these notions has been discussed in the following paragraphs (Kudnar 2013, 2015, 2016).

Strength of the Region

The programme for achieving the development of tribal people in the district should be based on given environmental resources and human resources. The tribal zone of government supports has following assets.

- ➢ **High Rainfall**: In the west part of Nashik district, there is 2000 to 3000 mm. Rainfall. It has mountain area. The rainwater is going down. This water is not useful during summer days. It will helpful in only rainy season. So at this place, watershed management is must

- ➢ **Forest Resources**: The forest resources available in the tribal zone are in the form of grass, fuel, medicinal plants, timber, lake, drink, etc. utilization of these resources may be possible on a sustainable basis.

- ➢ **Traditional Knowledge As Well As Skills:** The tribal people have the traditional information regarding biomass resources around them. Livestock activity, medicinal plants. They have learned skills through their traditions regarding construction of huts, painting, hunting techniques and earthen pottery.

- ➢ **Hard Working Capacity**: Due to low levels of human resources development and the terrain of their occupation the tribes have very good physical strength. They have much more hard working capacity than the non-tribal people.

- ➢ **Equal Status of Women**: - There is no gender discrimination in almost all the tribes observed in the district. The statistical information has shown that the tribal sex ratio is high compared to non-tribal people.

Weakness of Tribal Area:

- ➢ **Rugged Topography**: The ruggedness of the terrain is on the high side in the western part of Nashik district and hence the advantage of water resources cannot be sought after the isolated village show poor farming techniques and low level human resources development. It has become very difficult to improve health and educational services in this type of terrain. The topographical factor has been responsible for erosion of soil resources, thus this negative factor has been responsible for reducing the positive of the favorable factors

- ➢ **Absence of Water**: Climatological studies have found that the tribal zone receives heavy rainfall confined to the period from first week of June to the last week of September. The maximum monthly rainfall is detected in the month of July. The rest of the period mainly from October to may be almost dry. The prevalence of hot and dry weather in the summer month has been responsible for low agricultural productivity, high proportion of irrigated and non-availability of drinking water. The forest is also dominated by monsoon deciduous trees. Thus because of high concentration of rainfall within the monsoon season there is a long dry period, which is responsible for creating some problems.

- ➢ **Weak Infrastructure**: The infrastructural facilities in the tribal Tahsils are inadequate, it such facilities are compared with the other Tahsils employing the techniques like inter institutional distance (Gupta and Sharma)Road density of amenities with reference to population, etc. The tribal Tahsils may show infrastructural status on comparison with the other tehsils of the district. However, taking into account condition of the roads, nature of the terrain frequency of busses etc. The infrastructure is maybe said be said to be very weak, therefore it is very difficult for the zone to develop the projects like agro-based industries of secondary economic activities.

- ➢ **Poor Occupational Structure**: The occupational structure of the tribal zone of the district has been dominated by primary activities. This indicates the poor status of occupational structure and the remote possibility of strengthening secondary and tertiary activities in near future.

- ➢ **Erosion of Forest Resources**: Traditionally tribal people have been dependent mostly on forest resources; however growth of population has disturbed the sustainable use of forest resources over grazing fragmentation due to construction of the dam, lake and roads, etc.. Has been responsible for deteriorating the quality biomass resources in the zone this is affecting the amount of collection of minor forest product. Thus the present forest resources are insufficient to support the growing population.

Planning Strategy for Tribal Region:

It is essential to start various industries in the tribal region. It can help in the development of the people in this region. The social and

economic development of tribal people is also possible if the industries are developed in this region.

1. **Small Scale Industries**: The tribal peoples in the sinner, Nashik and Igatpuri tehsils were getting sufficient employment through some small scale industries which have been already developed in their region in those regions such as Surgana, Peint and Trimbak, the small scale industries have yet not been developed. In these regions also the small scale industries on the basis of minor forest product may be started. In this way the tribal people in these regions may get more benefit in terms of employment.

2. **Export Market Linkages**: The international market for Grapes at Pimpalgon Baswant and for Onion at Lasalgaon in Nashik district is well known all over the world. There are a lot of requirements of laboures for different processes like sorting, packaging and labeling of the products of the Grapes and Onion. Hence the peoples in the villages of the surrounding areas got employment to increase the availability of employment. To increase the availability of employment in the region of Peint, Surgana and Trimbak Tahsils. It is needful to open export market linkage at these places.

3. **Agro-Based Industry**: There is a large production of Grapes, Onion and potato in the eastern region of Nashik district. While in the western region of Nashik district, there is the largest production of crops like Rice. The farmers in the region of Vani, Surgana and Trimbakeshwar use to take crop of Strawberry and Potato. After processing on Strawberry, Potato chips, sauce and jam like products can be produced. If the industries based on above products, may be developed in their regions. It can help to improve the situation in these regions and the farmers may get increased rate in the market for their products.

4. **Education**: There are 134 Ashram schools and 88 hostels in the whole Nashik district region in various tribal tehsils such as Surgana, Kalwan, Deola, Baglan, Dindori, Peint, Trimbak, Igatpuri and Nashik. As per population the population of these areas the ratio of schools and hostels is very least. There is a need to increase the number of schools and hostel in these regions and also to fill up all the teachers' vacant posts in these schools and hostels properly on the academic merit basis. In this way it helps to make illiterate the peoples in their region. We should make aware the peoples about the importance of education by organizing different social programmed.

5. **Forest Based Activities**: A lot of medicinal plants are found in the forests and mountains in the tribal region. The tribal peoples generally make the use of these medicinal plants for using the number of diseases. It is essential to aware the peoples about the proper use and importance of the medicinal plants. Also, it is again beneficial to start small scale industries which based on the medicinal plants.

6. **Role of NGO**: Nashik district Surgana, Kalwan, Baglan, Dindori, Peint, Trimbak, Nashik, Igatpuri in these tribal tehsils there are 333 SHG. So that tribal people got employment near about 119 families, 27 people get individual benefit. So government should promote SHG.

7. **Improve Medical Facility**: Surgana, Peint, Trimbak, and Igatpuri in these tehsils at Padas there was no any PHC. Today still the people went to 3 to 5 km for taking medical things. So that to develop the health care's things. Government should work accordingly.

8. **Housing Scheme Amended Effective**: Generally, under below poverty people get the housing scheme, but the percentage is so less. This amount is 30000 Rs. But it will be near about 1 lack, it is appropriate.

9. **Conservation of Water Resources**: In the west part of Nashik district, there is 2000 to 3000 mm rainfall. It has mountain area. The rainwater is going down. This water is not useful during summer days. It will helpful in only rainy season. So in this place, watershed management is must.

Conclusions

1) According to the 1981 census in Nashik district, there are 23.45% Tribal people out of them 25.95% male and 23.99% female. The highest population is in Peth (93.68%). It is followed by Surgana (91.77%) tehsil. The lowest tribal population is in Yeola (6.81%) tehsil.

2) According to the 2011 census in Nashik district, there is 25.61% tribal population in it the male percentage is 25.10% and the female percentage is 26.16%. According to this census the highest population is in Surgana (96.54%). It is followed by Peth (96.44%) tehsils. The lowest population is in Malegaon (10.14%) tehsils.

3) In Nashik district the Tribal population growth rate is 122.95 Percent. The Male population growth rate is 123.56% and the female population growth rate is 122.33Percent.In Yeola the tribal population growth rate is 188.54%. It is highest however the lowest tribal population growth rate is Peth (18.28%) tehsils.

4) It observed that tribal concentrated tahsils literacy volume of change is high in the study region. In decades 1981-2011 census the change volume in total tribal literacy is highest in Peint tahsil. The total tribal literacy change in volume percentage is 44.43 percent. It followed by Surgana and Chandwad tahsil having percentage 42.2 and 41.21 respectively.

5) According to 2011 census the tribal sex ratio of Nashik district is 973.It is highest in Surgana (1004) and it is followed by Peint (990), Kalwan (993), Trimbakeswar (991), Dindori (997), Chandwad (972), Niphad (973) and Igatpuri (978) tehsil respectively. Deola (962), Sinner (950), Nandgaon (957), Malegaon (957), Baglan (967), Nashik (932) these tehsil have less than 950 sex ratio.Table.4,Fig.6 In Nashik district in tribal community in 1981-2011 decade, this sex ratio is decreased by 6 however, it is decreased by 31 in Nandgaon tehsil. The same ratio is also decreased in Chandwad and Malegaon by 26 and 29 respectively on the contrary in Surgana (22), Yeola (15), and Kalwan (13) tahsils has increased sex ratio respectively.

6) Table.5 explains the Occupation structure of the tribals. According to the 1981 census, the proportion of main workers in Nashik district is 50.45 per cent. According to the 2011 census, the proportion of Main workers is 47.17 per cent. In 1981, the proportion of Marginal workers is 4.84 per cent, in 2011 it is 5.74 per cent. The Non

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workers is 46.72 per cent in 1981, 47.08 per cent in 2011.

7) It found slight increase of tribal concentration in Kalwan (0.58), Baglan (0.29), Chandwad (0.19), Nandgaon (0.16), Yeola (0.12), and Niphad (0.11) tahsils respectively.Peint (-0.23), Igatpuri (-0.18), Nashik (-0.16), and Surgana (-0.14) tahsils have decreased tribal concentration from 1981 to 2011. Tribal population is highly concentration in west part in the study region. (Table.6 Fig.9. C).Tribal population concentration index decrease in Nashik (-0.16) Tahsil because of separation of Trimbak Tahsil from Nashik Tahsil. Peint (-0.23), Igatpuri (-0.18), Surgana (-0.14) tahsils have also decrease concentration index because of tribal people migrated for job to urban area.

8) . The government agency has identified the tribal zone of the district for the purpose of implementation of various schemes there are several schemes of government for achieving sustainable development of the tribes. According to the constitution (46) the government took the responsibility of the welfare of a backward section of the society.

Conflict of Interest

The authors declare no conflict of interest.

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