A GEOGRAPHICAL STUDY OF TRIBAL POPULATION CHARACTERISTICS IN NASHIK DISTRICT, MAHARASHTRA

A Thesis Submitted to
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Faculty of Moral and Social Sciences

By

ANILKUMAR RAMDAS PATHARE
Research Student

Under the Guidance of

Dr. B. C. VAIDYA
Professor in Geography
Department of Geography
University of Pune, Pune-411007

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CERTIFICATE

This is to certify that the work incorporated in the thesis entitled, "A Geographical Study of Tribal Population Characteristics in Nashik District, Maharashtra" submitted by Mr. Anilkumar R. Pathare for award of Ph.D degree in Geography in faculty of moral and social science to the Tilak Maharashtra Vidyapeeth, Pune is his original work which was carried out by the candidate under my guidance and this work has not been submitted previously for any other degree or diploma to this or any other university. The materials obtained from other sources have been duly acknowledged in this thesis.

Place : Pune
Date :

(Dr. B.C.Vaidya)
Supervisor
Professor in Geography
Department of Geography
University of Pune,
Pune- 411007

DECLARATION

I hereby declare that the thesis entitled “A Geographical Study of Tribal Population Characteristics in Nashik District, Maharashtra” is the original research work carried out by me under the guidance of Professor B. C. Vaidya for the award of Ph.D. degree in Geography to the Tilak Maharashtra Vidyapeeth, Pune. This has been not submitted previously for the award of any degree or diploma in any other university.

Place : Pune
Date :

(Anilkumar R. Pathare)
Research student

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(Anilkumar R. Pathare)
Research Student

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CHAPTER-I
INTRODUCTION

1.1 General Introduction

The human being is most precious resource on the Earth as being architecture for adopting and creating existing environment. Therefore, it is essential to understand the evolution of demography of region both in qualitative and quantitative terms. The regional imbalance in distribution of population and their racial and social characteristics are studied in geography. Population geography is recent discipline in geography studying regional differences of population distribution on the earth and is concerned with spatial analysis of population which involves the magnitude of human population and different characteristics of growth and mobility. In some regions, human beings are still learning to live in dispersed, nucleated communities while others created new socio-economic planned communities. "Tribal population" is a social group of human being which lives in a common territory having a common dialect, uniform social organization, possess cultural homogeneity having common ancestor, political organization and religious pattern. These communities belong to different entho-lingual groups professing diverse faiths. The tribal groups are recognized by Government of India and renamed as "Scheduled Tribe" (Census, 1981). The levels of socio-economic development and evolution of scheduled tribes can be studied in terms of social, historical, cultural, political, economic and technological points of view. The presence of tribal is in old world from the last several thousands years. Tribal were the earliest among the present inhabitants forming integral part of civilization. The references about tribes have found in Vedas, Puranas, Mahabharata and Ramayana. Tribal are called *vanyajati* (Castes of forest), *adijamati* (Primitive people), *janjaati* (Folk people) and *anusuchit janjati* (Scheduled Tribe). Principally, adivasi and anusuchit janjaati are commonly used.

Beside these, terms atavika, vanavasi "forest dwellers" or girijan "hill people" are also used for the tribes of India, adivasi carries the specific meaning of being original, autochthonous inhabitants of a given region and was specifically coined for that purpose in 1930. Over a period of time, term "tribes" and "adivasi" has developed during the British period in India. The Constitution of India, Article 366 (25) has defined Scheduled Tribes as "such tribes or tribal communities or part of groups

within such tribes or tribal communities as are deemed under Article 342 to the Scheduled Tribes for the purposes of this Constitution". In Article 342, the procedure to be followed for specification of scheduled tribe is prescribed. However, it does not contain the criterion for the specification of any community as scheduled tribe. An often used criterion is based on geographical isolation, backwardness, distinctive culture, language, religion and shyness of contact (Lokur Committee, 1965). As per 2001 Census, tribal population in India is 8.43 crores constituting 8.2 percent of total population and mainly concentrated in Madhya Pradesh (14.51) percent, Maharashtra state (10.17), Orisa (9.66), Gujarat (8.87), Rajasthan (8.42) and Jharkhand (8.4). These tribal populations have found unique characteristics like pre-agriculture level of technology, stagnant population, low literacy and subsistence level of economy. The tribals study has carried out by Anthropologists, Sociologists, Geographers, Economists and Planners with variety of approaches.

1.2 Literature Review

The geographers have attempted to study the demographic issues of tribal population considering spatial and environmental aspects. Indian geographers have made notables contribution on tribal study by Boss (1969), Diksha Barai (1975), Buddhadeb Chaudhary (1982), Govind Gare (1989) Sateysh Chakraborty (2001) and K. C. Ramotra (2009) and have focused on distribution pattern and unique geomorphology of tribal areas. Boss has studied the tribes and tribal societies in India in general while Dakasha Barai has studied the tribes of Andaman and Nikobar islands. Sateysh Chakraborty has described tribal problems. In India, tribal society is unique society having diversity of nature. Poverty, poor health and sanitation, illiteracy and other social problems prevail among tribals are exert effect on economy of nation. The many tribal study in India have focused on tribal economy, land alienation, socio-economic development, tribal culture and population. Moreover, assessment of tribal population have made by various anthropologists, sociologists, economists, geographers and research scholars. The trend of ethno-methodology during British period was studied by Verrier Elwin in 1943 and which he suggested that tribals should be kept isolated in hills and forests. Elwin's theory is known in social anthropology as ‘Public park theory’ and non-tribal people should be restricted for entering into tribal pockets without permission of state Government. This system would get guarantee the isolation of tribals.

Ghurye, G. S. in 1943 has put forth the theory of Public Park where tribals are nothing more than backward caste Hindus. Hence, tribals should be treated as part of Hindus. D. N. Majumdar in 1944 took slightly different opinion that the cultural identity of tribals should be retained. The scientific study of tribal economy in India was first undertaken by Nag, D. D. and R. P. Saxena. Nag D. D. in 1958 has made an extensive fieldwork of tribal dominant area in Mandla, Bilaspur, Durg, Balaghat and has studied the Baiga economy in the context of general economic theories emphasising on sources of economy of Baigas. Verma (1959-1960) has discussed the socio-cultural organizations of Sanria Paharias, Mal-paharias and Knmarbhag. He has examined various phases of tribal life, pregnancy and birth, adolescence, widow remarriage, place of women in society, religion, village council and institutions. N. N. Yyas in 1967 has studied the historical, social and economic life of Baniyas of Rajasthan, Andhra Pradesh, Punjab and Gujarat. He pointed out customs and practices of Baniyas in different states in India.

Vidyarthi, L. P. (1970) has examined impact of urbanization on tribal culture and has studied impact of emergence of heavy engineering complex in tribal belt of Chhota Nagpur by analyzing the pattern of socio-economic changes owing to large scale industrialization. Roy Burman (1973), Dean Joros (1973), S. L. Doshi (1978), R. S. Sharma (1980), Devendra Thakur (1986), Geetha Menon (1987), V. S. Ramamani (1988), Rarnakant Prasad (1988), L. C. Mohanthy (1989), S. L. Doshi (1990) and Nirmal Sengupta (1990) have assessed the process of rapid industrialization after independence and have found rich natural resources in tribal areas. The establishment of resource-based industries in such areas is inevitably led to displacement of tribals. Naidu in 1981 has studied the tribals condition living in Tumkur district in Karnataka, Thakur (1986) conducted a study on Santhal tribe of Bihar. Saibaba and Rajendra Naidu (1992) focused on tribal development strategies in Andhra Pradesh. Mohana (1993) analyzed the living conditions of the Gonds, Koyas, Ehenchus and Hambads in Andhra Pradesh. These studies have focussed on poverty of tribals. A. K. Singh (1993) revealed high infant mortality, low nutrition status, low life expectancy and higher fertility in tribes. Buddudeb Chaudhaudi has written book in 1992 on "Tribal Transformation in India" in five volumes and has presented changing tribal scenario and issues related to tribal economy, agronomy, politics, ethnicity, ecology, education, technology transfer, social political movements, religious faiths and rituals in an indigenized. P. Sudhakara Reddy (1995) has attempted to assess the processes

and problems of displacement, rehabilitation and socio-cultural changes occurred among the displaced scheduled tribe, Yanadis of Shriharikota Island in Andhra Pradesh. P. C. Jain in 1999 has studied Bhils and Minas tribes of Rajasthan and has found out that development of tribal groups through Five Year Plans. S. R. Bakshi and Kiran Bala (2000) have focused on socio-economic condition of scheduled tribes of sub-continent. Prakash Chandra Mehta (2000) has reviewed tribal development measures adopted during the 20^{th} Century and has found basic minimum needs for their subsistence. Ramotra K. C. (2009) has analyzed status of tribal well-beings in northwest part in Maharashtra. In his study he has lighted on status of tribal concentrated tahsils of Nashik district. The review of tribal studies have conducted on general living conditions, health, education, implementation, impact of developmental programmes and social charge have been reviewed to understand the different dimensions of tribes by various researchers.

1.3 Choice of Study Region

The study region under investigation is influenced by many considerations. Firstly, tribal population of study region is typically backward and has not been so far studied particularly by geographers; hence, this topic has remained untouched for indepth study. Secondly, demography of tribal population has not studied for planning purpose specially. This has attracted researcher to assess tribal population and their characteristics. Further, study region is familiar to researcher and hence this becomes easy for data collection and references.

1.4 Study Region

Nashik district is located in northwest in Maharashtra state. This district extends from 19^0 33' to 20^0 52' north latitudes and 73^0 16' to 74^0 56' east longitudes (Fig.-1.1). The study region spreads over 15530 square kilometers and ranks fifth in Maharashtra state accounting 5.04 percent area. The study region is Rhomboidal in shape with longer diagonal of about 170 kilometers from southwest to northeast and an extreme breadth of about 120 kilometers from north to south. Administratively, this region consists of fifteen tahsils, namely Chandwad, Devala, Dindori, Igatpuri, Kalvan, Malegoan, Nandgaon, Nashik, Niphad, Peint, Baglan, Sinnar, Surgana, Trimbakeshwar and Yevla. Among these, tahsils Malegaon is largest tahsil occupying 12 percent area whereas Peint is smallest tahsil (3.63 percent) in study region. The district headquarter is located at Nashik. 18 towns and 1931 villages lie in study

region (2001). Nashik district is surrounded by Jalgaon district in east and northeast, Dhule in north, Gujarat state in northwest, Thane district in southwest, Ahmednagar district in south and Aurangabad district in southeast. There are three major geographical regions, namely, western region, central region and eastern region. The average height from mean sea level is 600 meters. The study region consists of Vani range, Ramshej range, Anjaneri range, and Kalsubai range. Girana, Kadva, Godavari, Darna, Damanganga, Nar, Par and Vaitarna are major rivers in study region. The soil in study region is originated from igneous rock. Monsoon commences in June and receiving average rainfall of 1103 millimeters with considerable variations and uncertainty. The rainfall amount decreases from west to east. The forest covers 3,343.5 square kilometers and is concentrated in west, south and southwest part in study region.

According to Census 2001, total population was 49, 93,796, of which 25,90,912 males and 24,02,884 females. 61.20 percent people live in rural and 38.80 percent in urban area. According to 2011 Census (Provisional) population of region is 61,07,187 persons. The scheduled caste accounts 8.54 percent and scheduled tribes (23.91 percent) in study region. The both percent of scheduled caste and scheduled tribe account significantly (32.45 percent). Out of them 72 percent resides in rural area and 28 percent in urban area. The tribal populations are mainly found in Surgana, Peint, Trimbakeshwar, Kalvan, and Dindori tahsils. The population density was 322 persons per square kilometer in 2001. Nashik tahsil has highest population density of 1625 persons per square kilometers and Trimbakeshwar tahsil has lowest density (154 persons per square kilometer). Nashik district has found 74.15 percent literacy in 2001 showing close figure to Maharashtra state (76.9 percent) accounting 83.6 percent male and 64.4 percent female literacy. Sex-ratio was 927 in 2001.

The study region derives its name from it's headquarter of town Nashik. Regarding origin of name, two interpretations are given. First, town is sited on nine peaks or navashikhara and hence, its renamed as Nashik. The other relates with incident Ramayana. Lakshmana is said to have cut off the nose (Nashika) of Shurpanakha in this place. The district comes into existence in 1869 when Britishers re-arranged districts of Maharashtra state.

Fig.-1.1 : Location of Study Region

1.5 Objectives

The present study has been undertaken to make comprehensive study of tribal population characteristics in Nashik district. This has been studied by purforthing following sub-objectives:

(i) Examining the physical background of Nashik district.

(ii) To examine the spatial distribution and growth of tribal population in study region.

(iii) To assess the tribal population characteristics in study region.

(iv) To evaluate the occupational structure of tribal population, and,

(v) To suggest measures for tribal development in Nashik district.

1.6 Data Sources and Methodology

The present study is primarily based on both secondary and primary data. The secondary data have been obtained from Statistical Handbooks, District Census Handbook, Socio-economic Abstract of Nashik District, Tribal Development Department Nashik, Tribal Research and Training Institute, Pune and Census of India from 1981 to 2001. Primary data have been obtained from households through questionnaires on demography, religions, households, health, education, occupation and income from various sources. Besides this, information have gathered from village Talathi, Village Development Officer and Sarpanch of selected sample villages. The spatial and temporal aspects of tribal population of five sample villages have studied. For delineating tribal population composition, concentration index, location quotient index, child-women ratio, dependency ratio, growth rate, population projection, activity rate and index of ageing methods have been computed. Lorenz curve is used to find out population space relationship in study region. Karl Pearson's correlation coefficient method has been used to study the relationship between tribal literacy and working population. Following techniques have been used in present study.

(i) Concentration Index $= \dfrac{\text{Tahsil Population / Tahsil Area in Square Kilometer}}{\text{District Population / District Area in Square Kilometer}}$

(ii) Location Quotient $= \dfrac{\text{Percent of Tribal Population to Total Population in a Tahsil}}{\text{Percent of Tribal Population to Total Population in the District}}$

(iii) Population Growth Rate $= \dfrac{\text{Population of Current Decade - Population of Previous Decade}}{\text{Population of Previous Decade}} \times 100$

(iv) Population Projection by Crude Method

$$R = 1/n * ((P_n - P_o)\ x\text{^}2)/(P_o)\ X100$$

(v) Poulation Projection by Compound Method

i) $R = [(P_n / P_o)^{1/n} - 1] \times 100$ ii) $P_n = P_o (1+R/100)^n$

Whereas:

R = annual rate of growth

P_n = population in the current year

P_o = population in the base year

n = number of intermediary years.

(vi) Total Dependency Ratio

$$= \frac{\text{Population Aged (0-14) Years and 60 + Years}}{\text{Population Aged (15-59)}} \text{ X 100}$$

(vii) Index of Ageing

$$= \frac{\text{Population Aged 60 + Years}}{\text{Population Aged (0-14)}} \text{ X 100}$$

(viii) Child Women Ratio

$$= \frac{P(0\text{-}4)}{F(15\text{-}44)} \text{ X } K$$

Whereas:

P 0-4 = The number of children of both sexes under the age of 5 years.

F 15-44 = The number of women between the ages of 15 and 44 years.

K = 1000

(ix) General Activity Rate

$$= \frac{\text{Economically Active Population}}{\text{Population Aged (15-59)}} \text{ X 100}$$

Later on, collected data have classified, proceed and presented in the form of tables, charts, maps and graphs by applying appropriate cartographic techniques. The sample villages were selected by purposive sampling method. The field survey of sample villages were conducted in 2013 through designed questionnaires. The opinions of villagers and Sarpanch were obtained through questionnaires besides personal discussion with villagers Sarpanch and Patwari and are interpreted in the text.

1.7 Arrangement of Text

The present study has been arranged into seven chapters. First chapter is on introduction of study which includes general introduction, review of literatures, study region, objectives, data sources and methodology and limitations. The second chapter has described the background of Nashik district with respect to location, site, physiography, climate, soil types, vegetation, population, irrigation, occupational structure, landuse, transportation and socio-economic profile of population. Third chapter has dealt with tribal population characteristics and has studied the tribal

population distribution, density, sex composition, age-sex composition, literacy, dependency ratio, caste composition and population change from 1981 to 2001. Chapter fourth has to assess the occupational structure of tribal population in depth. Chapter fifth has devoted to case study of five sample villages. The chapter sixth has studied tribal population problems and planning strategy and lastly chapter seventh has presented summary, conclusion and suggestions.

1.8 Limitations

The data has available in terms of Government Published Records, Grampanchayat, District statistical abstracts, Census handbooks, Tribal Development Department Nashik, Tribal Research and Training Institute, Pune and local tribal people. Lack of upgraded data available in Government Published Record and each Village level has lead problems for data collection. And therefore data collected during field work do not match with government records. As well as there is change in administrative boundaries of tahsils (1999) in study regions has become handicap to get accounts tribal populations data. The data for 2011 Census has not published hence; researcher has to depend on data available in Census 2001. Which have been used for mapping and interpretation of present study. Beside this, information given by tribal people during field work was also inadequate hence interpretation is entirely based on available data and information in the text of present study.

CHAPTER-II

PROFILE OF STUDY REGION

2.1 General Introduction

Population of any region play vital role in the development of region. The study of population regarding age and sex composition, composition of religions, economic status, marital status, education status reveal real picture of the society. In order to deal with problems and ensure development of the region requires to consider the planning policies in term of quality and quantity of population resource. The growth of population includes the study of birth rate, death rate and migration. The socio-economic development of any region reflects in these elements. The distribution of population is largely controlled by geographical and cultural factors. It is, therefore, necessary to evaluate the geographical background of study region. The objective of this chapter is to examine physical and socio-cultural aspects, regarding physiography, drainage pattern, climate, soil, forest, population, transport, irrigation, occupational structure and landuse pattern in Nashik district.

2.2 Physiography Divisions

The study region has physiographical variations partly because of its location in Sahyadri and vast size. It appears like plateau dissected by hill ranges and rivers valleys slopping towards east. Geographically, study region is made up of volcanic formation of basalt rock. The study region is broadly divided into three major physiography divisions, namely, western region, central hilly region and east plateau region (Fig.-2.1). The western region lies to west of Sahyadri edge of Deccan plateau covering major part of Surgana, Peint, and Trimbakeshwar tahsils in study region. The height of this region ranges from 200 to 600 meters towards west upto boundary in study region and found dissected valleys by various streams flowing towards west. In central region has hills and ranges running from north to east and from west to east direction. This area includes in west part of Baglan, Kalwan, Devala, north Chandvad, Dindori, Trimbakeshwar, west part of Nashik, south part of Igatpuri and south Sinnar tahsils in study region. The hills and ranges mainly towards north formed boundary between Gujarat state in northwest and Dhule district (Fig.-2.1). The height of this range is 1300 meters in west and it decreases to 710 meters towards east near Galan fort.

Fig.-2.1 : Physiography Division

Mangi–Tungi is highest peak appears in this range (1331 meters altitude). Selbari pass lies towards east of this peak. Another parallel range is Salher-Mulher range. Satmala-Chandvad range runs across study region from west to southeast direction having highest peak Dhodap (1451 meters). Saptashring peak (1420 meters), Indrai (1410 meters) and Chandvad (1217 meters) appears in this range. Towards southwest, twin forts, namely, Anki and Tanki are located at the height of 960 meters in study region. This range is highly dissected by streams. Satmala-Chandvad range forms water divide between Girna and Godavari river basins. This range passes through Kalwan, Dindori, Devala, Niphad, Chandvad and Nandgaon tahsils. In south part, Trimbak-Anjaneri range stretches towards east from Bhaskargad. These ranges run through Nashik and Igatpuri tahsils. Harishgad (1113 meters) and Brahmagiri (1210 meters) are in south part in study region. The slope of this region is steep and forms cliffs in this range. This range is the source of river Godavari river at altitudes of 1274 meters. Anjaneri range runs east to west at the altitude of 1100 meters consisting irregular group of hills forming water divide between Godavari, Darna and Vaitarna river. On southern boundary, Kalasubai range stretches eastward. The highest peak of Maharashtra state, namely, Kalasubai (1646 meters) lies in this range.

The third physiographic division appears in east part in study region and it is characterized by occurrence of several off-shoots in eastward and southeastward. The height of this plateau varies from 400 to 600 meters and slope is towards east. This area covers 59 percent geographical area and is widely spreads over Malegaon, Nandgaon, Niphad, Yevla, Sinnar, east Nashik and Devala tahsils. In north, lands are deeply dissected and have found gullies on rough terrain of very poor soils. Godavari and its tributaries are flowing toward south part in study region. It forms broad valley of alluvial deposit in south, central and east parts in Nashik and Niphad tahsils and has high soil fertility. This area is moderately productive. Sinnar plateau is located in southeast having rough slopping ground.

2.3 Drainage Pattern

The study region is drained by two major rivers, namely, Godavari and Girna river (Fig.-2.2). Satmala-Chandvad range acts as water divide between Godavari and Girna rivers while Sahyadri hills in west has water divide between west and east flowing rivers. The Godavari and its tributaries drain in southeast direction (Fig.-2.2). The tributaries of Godavari originate from Satmala-Chandvad ranges in north. Darna is major tributary of Godavari flows from south.

The average altitude decreases from 1000 meters in west upto 300 meters in east part in study region. Nashik, Dindori, Niphad, Sinnar and Yeola tahsils drain by Godavari and its tributaries. Godavari is most important river in study region. Out of total length of river is 111 kilometers distance in study region. Godavari river originates near Trimbakeshwar and flows towards southeast direction in study region (Fig.-2.2). This river has deep channel and narrow alluvial flood plain. Darna river rises in Kalasubai range towards southern part in study region. The total length of river is 80 kilometers draining in Igatpuri, Nashik and Niphad tahsils. Kadwa is another tributary of Godavari river rising in Satmala range and flows toward east in Dindori tahsil for 74 kilometers distance, out of larger part lying hilly in Dindori and Chandvad tahsils. In Niphad tahsil, this river is a major source of irrigation. Kadwa river joins Godavari river near Niphad and flow from fertile soil. The Kashyapi river originates in Sahyadri hills. Banganga river is north bank tributary rises northwest in Ramshej hill and flows towards east and finally joins Godavari river.

The north part of study region is drained by river Girna and its tributaries. Aram, Maosam, and Panjhara are major tributaries of Girana river. Girna river rises in northwest in study region in Sahyadri hills and flows towards east having wide bed and high bank. The length of this river is 144 kilometers. This river flows through Kalwan, Devala and Malegaon tahsils. Aram river originates near Salher fort in Dholbari range and flows towards south then turns towards east and further joins to Girna river. Mosam is a tributary of Girna river originates in Sahyadri hills and joins Girna river near Malegaon. Panjhara river is tributary of Girna river. The west part in study region is drained by small rivers and streams and are flowing towards west. These rivers are meandering through deep valleys, gorges and waterfalls. Damanganga and Vaitarna rivers are flowing towards west in study region. Damanganga river rises in hilly area of Sahyadri and flows through Peint tahsil in study region whereas Vaitarna river rises in southwest part near Trimbak and drains in west in study region.

2.4 Soil Types

Soil is basic factor for agriculture. Soil texture and thickness constituent of soil determining crops growth. The soils are the function of topography, climate and vegetation. Nashik district is located on ‘Deccan Trap’. Hence, parent material of soil is more or less uniform (Ray Chaudhari, 1964).

Fig.-2.2 : Drainage Pattern

It is mainly derived from igneous rocks especially of extrusive origin. Considering topographical and climate conditions, soils in study region can be classified into four types, namely, red brown soil, loam soil, black soil and yellow soil (Fig.-2.3). Red brown soil appears in west part in heavy rainfall zone in study region. Surgana, Peint, Trimbakeshwar Igatpuri and parts of Nashik tahsils have found this soil. Climate experiences slightly warm-humid and topography is hilly and rugged. This soil is red and brownish in color and has shallow. The PH of this soil ranges from 7.4 to 8.2 containing less clay and silt but is rich in organic matter. The soil thickness varies from 30 to 120 cm depending upon slope of region. Loam soil appears in east part in hilly portion. Dindori, east part of Trimbakeshwar, central and eastern Nashik, Niphad, Kalwan and Baglan tahsils appear this soil. This soil has PH value of more than 8. The rainfall is moderate in this zone. This soil is rich in organic matter consisting clay 4 percent and 20 percent silt (Ray Chaudhari, 1964). Clay loams soils are found in low lying areas and banks of river. Loam soils appear at higher level and are found in narrow strip. Black soil is mainly found near the bank of Godavari and Girna rivers. These soils contain nitrogen, phosphate and calcium carbonate and are found favorable for cultivation. Yellow soil is found in southeast part in study region and it exists in the form of disconnected strip in Chandvad, Sinnar, Nandgaon, Yeola and Malegaon tahsils. This soil is shallow, coarse and light in color. The PH ranges from 8.3 to 8.5. This soil is also termed as yellow sandy loams due to less organic matter and nitrogen.

2.5 Climate

The climate in study region experience monsoon type and it is divided into four seasons, namely, winter, summer, monsoon and post-monsoon. The average maximum temperature during the year is 35° centigrades and minimum is about 18° centigrades. The maximum temperature is found in May and lowest in August. The minimum lowest temperature is observed in January (10.6 centigrades) and highest in May (38.3 centifrads) (Fig-2.4A). From June temperature begins to decrease remarkably as the beginning of southwest monsoon season. Day temperature in October increases by two to three degrees centigrades. However, night temperature decreases after September. November onwards temperatures is found decreasing rapidly. January is the coldest month (11.8° centigrades).

Fig.-2.3 : Soil Types

Fig.-2.4 A : Average Temperature at Nashik

B : Monthly Average Rainfall at Nashik

May shows maximum temperature (38.3° centigrades). The climate during southwest monsoon season is humid, dry in post monsoonexperience cold in winter and dry in summer season.

Table-2.1 : Temperature at Nashik

Months	Maximum	Minimum	Months	Maximum	Minimum
January	29.4	10.6	July	28.2	21.6
February	34.8	11.2	August	27.9	20.9
March	34.8	15.9	September	30.8	20.3
April	38.1	19.9	October	31.1	17.3
May	38.3	23.3	November	30.8	13
June	31.8	22.2	December	30.8	11.8

Source: Indian Metrological Department, Pune. Note: Temperature is given in degree centigrades.

Table-2.2 : Average Rainfall at Nashik

Months	Rainfall	Months	Rainfall
January	3.5	July	418.1
February	1.4	August	276.7
March	1.8	September	182
April	5.5	October	64.7
May	19.7	November	27
June	169.7	December	4.5

Source: Indian Metrological Department, Pune. Note : Rainfall is given in Millimeters.

The average annual rainfall in study region is 1174.6 millimeters. There are considerable variations in receiving rainfall and it decreases from west to east (Fig.-2.5). Igatpuri receives 3341.6 millimeters and Peint (2351.6 millimeters) of average annual rainfall. Igatpuri, Peint, Trimbakeshwar and Surgana tahsils have found averages rainfall of more than 2000 millimeters. Baglan and Malegaon tahsils receive less than 500 millimeters rainfall. Devala, Chandvad, Niphad tahsils receive moderate rainfall between 500 to 1000 millimeters (Fig.-2.5). The rainy season starts from middle of June and lasts till end of September. Amount of rainfall is greater in July and August (Fig.-2.4B). 88 percent rainfall receives during southwest monsoon season in study region. During pre and post monsoon months rainfall occurs in form of thunder showers. Skies are heavily clouded to overcast during the southwest monsoon season. The rest of year sky is clear. Winds are generally moderate strengthening wind force during summer season and southwest monsoon season in study region.

Fig.-2.5 : Rainfall Distribution

2.6 Forest

Forest covers 3343.5 square kilometers area accounting 21.53 percent in study region. This forest consists of reserved forest (2,920.7 square kilometers), protected forest (245.45 square kilometers) and unclosed forest (173.32 square kilometer). Among this, 928.88 square kilometers area in west part have dominance of timber and fuel wood. The remaining forest appears on three ranges of hills running east to west direction in study region. The distribution of forest is not uniform due to variations in rainfall, soil, climate and topography (Fig.-2.6). The west part lying tahsils Peint and Surgana occupies more than 40 percent forest. Kalwan and Trimbakeshwar tahsils have 30 to 40 percent forest on hilly area where rainfall receives 2000 millimeters. "Tropical moist deciduous forest" is found in Baglan and Nandgaon tahsils on 30 percent area. Dindori, Nashik, Igatpuri, Sinner, Devala, Malegaon tahsil has 20 percent deciduous forest. In central part, Chandvad and Niphad tahsils have less than 10 percent forest due to more cultivated irrigation and hence has thick population. Anjan trees are common in this area. In Nandgaon range has found in patches of Babul and Khair trees.

2.7 Population

Population influences the economic development and level of consumption and workforce in study region. The study region spreads over 15530 square kilometers and has population of 49,93,796 (Census, 2001) accounting 5.15 percent to total population in Maharashtra state and is unevenly distributed. The provisional population of study region is 6107187 in 2011 (Appendix-A).

Table- 2.3 : Density of Population in Nashik District

Name of Tahsils	1981	2001	Name of Tahsils	1981	2001
Nashik	495	1625	Nandgaon	146	217
Peint	106	173	Yevala	130	221
Dindori	124	197	Niphad	277	417
Surgana	99	172	Sinnar	144	216
Kalwan	117	193	Igatpuri	164	270
Baglan	150	211	Trimbakeshwar	N.A.	154
Malegaon	268	432	Devala	N.A.	225
Chandvad	139	214	District Total	191	322

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : N.A. = Data is not available.

Fig.-2.6 : Distribution of Forest

According to Census 2001, density of population was 322 persons per square kilometer and it varies within study region. Nashik tahsil has found highest density (1625 persons per square kilometer) while Trimbakeshwar shows lowest density (154 persons per square kilometer). Nashik, Malegaon and Niphad tahsils have found population density of more than 400 persons. The remaining tahsils have moderate population density between 200 to 300. Trimbakeshwar, Peint, Dindori and Surgana tahsils have recorded 100 to 200 persons density. Fig.-2.7 exhibits that population density increases from 1981 to 2001. West part is study region showing low density due to dense forest and hilly area. The central and northeast parts in study region have high density of population because of fertile soil, sufficient irrigation facilities, high urbanization and industrialization too. The study region has rapid population growth (Fig.-2.8). Nashik tahsil has found highest growth of population fallowed by Malegaon from 1961 to 2001 (Fig.-2.9). The remaining tahsils have indicated average growth of population. Nashik is head quarter of district, urban center, educational and industrial centre, hence in-migration is fast as compared to other tahsils in study region.

Table-2.4 : Sex-ratio in Nashik District and Maharashtra State

Years	Nashik District			Maharashtra State		
	Rural	Urban	Total	Rural	Urban	Total
1961	971	874	946	995	801	936
1971	954	905	940	985	820	930
1981	959	889	937	987	850	937
1991	955	915	940	972	875	934
2001	945	900	927	960	873	922

Source : District Census Handbook, Nashik District, 2001.

Table-2.4 exhibits population sex ratio in Nashik district and Maharashtra state from 1961 to 2001. The sex ratio in study region is higher (927) than Maharashtra state (922). The urban sex ratio in study region was 900 in 2001. The rural sex ratio in study region was 945 in 2001 which is less than Maharashtra state. The rural sex ratio in study region was greater than urban sex ratio. Nashik district has 61.2 percent rural and 38.8 percent urban population. The study region has recorded 74.15 percent literacy in 2001. Literacy is high in urban area (83.98 per cent) and less in rural area (67.79 percent). Female literacy is found less in rural area than male (64.16 percent) accounting 56.35 percent in study region.

Fig.-2.7 : Population Density

Fig.-2.8 : Population Growth

Fig.-2.9 : Tahsilwise Population Growth in Nashik District

The scheduled caste accounts 8.54 percent and scheduled tribes 23.92 percent together contributing 32.46 percent. The distribution of scheduled tribe population is uneven in study region. It is mainly concentrated in west and northwest parts in five tahsils in Peint, Surgana, Trimbakeshwar, Dindori and Kalwan having dominance of more than 50 percent tribes population, hence, these tahsils are known as tribal tahsils. Fig.-2.10 exhibits the tribal density for 1981 and 2001 in study region. In 1981, tribal density in Peint and Surgana tahsils have found more than 80 persons per square kilometer whereas in 2001, tribal density in Igatpuri, Nashik, Trimbakeshwar, Dindori and Kalwan tahsils have increased more than 80 (Fig.-2.10). It reveals that the tribal density has decreased from west to east in study region. Surgana has highest tribal population density 163 in northwest part in study region whereas Yeola tahsil has lowest tribal density (20) in 2001. It is noted that tribal population is mainly concentrated in isolated hilly and forest area in west part tahsils of study region.

2.8 Transport

Means of transport acts as nerveus system in study region as it supports for development. The study region has national highways, state highways and district roads. Nashik city is well connected with other district headquarters in Maharashtra state and major cities of neighboring states (Fig.-2.11). Total length of railways is 358 kilometers in study region. Three rail routes, namely, Bombay-Bhusaval, Manmad-Daund and Manmad-Secunderabad transverse within study region. Bombay-Bhusaval route passes from Igatpuri and goes upto Manmad covering 287 kilometers distance. Nashik road railway station is situated 10 kilometer distance from Nashik city. Manmad is a junction linking south part in study region. Manmad-Daund rail route is broad-gauge railway route (44 kilometers). Manmad-Kacheguda route connects Manmad and Hyderabad. The railway route supports for trade and commerce in study region.

The study region has 7105.0 kilometers roads. There are two national highways, namely, Mumbai-Agra and Pune-Nashik. Mumbai-Agra national highway (N.H. 3) enters Nashik district from Igatpuri and runs in northeast direction within study region. The road runs parallel to railway routes in study region (Fig.-2.11). It traverses through Igatpuri, Nashik, Chandvad and Malegaon tahsils for 185 kilometers. Pune-Nashik national highway (N. H. 50) has 54 kilometers length connecting Sinnar, Sangamner and Pune.

Fig.-2.10 : Tribal Population Density

Fig.-2.11 : Transportation

There are 14 other state highways, out of these three state highways connecting Bombay-Agra national highway and remaining connects are interior part of study region having total distance of 1655 kilometers. Other district roads connect rural areas and remote settlements. The density of roads is found more in central, northeast parts and west part in study region.

2.9 Landuse Pattern

Land is used for different purposes. The use of land shows relationship between people and surrounding condition of study region. In study region, more than 60 percent population is engaged in agriculture (Fig.-2.12A). Area under forest is 21.53 percent, area not available for cultivation is 9.28 percent, fallow land is 7.91 percent and net sown land 61.26 percent. This land use pattern shows that more number of peoples are engaged in primary activates (Appendix-B).

Table-2.5 : Landuse Pattern in Nashik District

Sr. No.	Land Utilization	Area	Percent
1	Area under forest	3343.50	21.53
2	Area not available for cultivation	1441.96	9.28
3	Fallow land	1228.88	7.91
4	Net sown Area	9515.11	61.26

Source : District Statistical Abstract, Nashik District 2010. Note : Area in Square Kilometers

2.10 Occupational Structure

The occupational structure can be categorized into two types, namely, main workers and marginal workers. Both these types can be sub-categories as farmers, agricultural labors, household workers, and others workes. Main workers are those who work at least six months in one year preceding. Marginal workers are those who work some time but not for the period more than six months in one year preceding. The domestic workers are those who are engaged in house work. Other workers are those who are engaged in livestock, forest, fishing, hunting, plantation, mining quarrying, manufacturing, processing, servicing, construction, tread and commerce. Fig.-2.12 B exhibits the occupational structure in study region. It is observed that 87.45 percent main workers and 12.55 percent marginal workers in study region. This indicates the prosperity of study region. The farmers accounts 37.68, agriculture labor (24.71), other workers (35.41) and marginal it (2.18). Over all, more than 60 percent workers are engaged in agricultural activities in study region.

Fig.-2.12 A : General Landuse 2010

B : Occuptional Structure 2001

2.11 Irrigation

Rivers, canals, wells and tub wells are the means of irrigation in study region. Niphad tahsil has highest 32.8 percent irrigation (Fig.-2.13) due to water available of Godavari river and its tributaries. Baglan, Malegaon, Devala, Chandvad and Sinner tahsils have 5 to 10 percent irrigation. In west part tahsils, namely, Surgana, Peint, Trimbakeshwar, Igatpuri and in Dindori, Kalwan, Yevala and Nandgaon tahsils have found less than 5 percent land under irrigation due to hilly track in study region.

2.12 Resume

This chapter has examined the physical and socio-economic conditions of Nashik district. Physiographically, region is divided into three divisions, namely, western region, central region and eastern region. Sahyadri ranges lies in west part. Sahyadri has three offshoots, namely, Galan- Selbari range in north, Satmala-Chandvad range in middle, Trimbak-Anjaneri range and Kalasubai range in south. The study region is drained by Godavari and Girana rivers. These rivers and their tributaries are the source of water for irrigation. Red brown soil, loam soil, black soil and yellow soil appear in study region. The study region experiences monsoon type climate consisting of four seasons, namely, winter, summer, monsoon and post-monsoon seasons. The average rainfall is 1174.6 millimeters. The average an maximum temperature is observed in summer season in May (38.3^0 centigrades) and minimum temperature in January (10.6^0 centigrades). Nashik district covers 21.53 percent forest area. The study region has 49, 93,796 population and 322 persons per square kilometer density in 2001. Nashik tahsils has highest density (1625) (Table-2.3). The percent of scheduled caste (8.54 percent) and scheduled tribes (23.92 percent) are found in study region. Tribal population is concentrated in hilly and forest area. The region enjoys 358 kilometers railway routes and 7105.0 kilometers road length helping for the distribution of agricultural produces and trade. The main workers and marginal workers are classified into farmers, agricultural labours, household workers and other workers. The highest irrigation is identified in Niphad tahsil accounting 32.8 percent in study region.

Fig.-2.13 : Irrigation in Nashik District

CHAPTER-III

TRIBAL POPULATION CHARACTERISTICS

3.1 General Introduction

Population is a creative element and surveyor of resources. Hence, study of population is a focal point in geographical investigation. Population is described on the basis of namely, number, area and time parameters. Population inhabits the qualities and characteristics of social and geographic groups emphasising demography, health status and socio-economic conditions. The demographic composition is a statistical interpretation whereas description of population concerned with distribution, composition and structure and studies of age, sex, literacy, mortality, fertility, and migration. This description reveals the social and comparative dynamics of population. This available data is often compared by using population pyramid. Generally, tabulation on age and sex are essential for computation of basic measures related to population change. Among population characteristics, age-sex structure is one of the important characteristics in population composition. Apart from purely demographic concerns, age-sex data structure requires for educational, health services, planning, technical, political and commercial purposes. The dependency ratio is ratio of economically active to economically inactive persons depends on age composition. Thus, this helps planning for food production and agricultural development. The sex composition affects directly on proportion of marital status, supply of workers, fertility and migration and indirectly literacy, birth rate and death rate. Imbalance in sex ratio is harmful to social structure. If proportion of males in total population is higher than the females, age of marriage for females decrease affect the female's health. The gap between age of husbands and wife wives increases with increasing number of widows and may change of sex composition largely reflecting socio-economic and cultural patterns within the study region. Imbalance in sex ratio found due to male preference, male dominate culture whereas low status of women due to lack of social security, low literacy among female and less participation in decision making are the some barriers. Therefore, study of sex composition becomes very significant for socio-economic planning. This chapter has attempted to study the spatio-temporal analysis of population characteristics of tribal population in Nashik district. For present study, secondary data have collected at tahsil level for 1981 and

2001. This data have gathered from District Statistical Office, Tribal Development Department, Socio-economic Abstracts and Nashik District Census Handbook for 1981 and 2001. These data were later on converted into percent, ratio, proportion, growth rate for finding density, growth, concentration, projection, sex ratio, literacy and dependency and are shown by diagrams, choropleth maps, bar graphs, pie charts, age-sex pyramid and Lorenz curve. A migration study was carried out for 2001 and is shown by flow map. The study of population density and distribution gives an idea about the concentration and dispersion of population. The density is a parameter for measuring population ratio. The population distribution has studied in terms of population concentration of region. The population growth may be positive or negative and change of population may affect the region. The data regard male, female, rural and urban tribal populations have collected. Tribal population density, distribution, growth and concentration have computed in this study. The volume of change was shown by maps and results are interpreted in the text.

3.2 Tribal Population Density

The density is the ratio between population and area within a region. This ratio can be expressed in three ways, namely, arithmetic, agricultural and physiological density. Arithmetic density is the total population divided by total area. Fig.-3.1 exhibits the tribal population density in Nashik district for 1981 and 2001. It is observed that density of tribal population in study region was 45 persons per square kilometer in 1981. However and is found variations in density of tribal population in study region. The highest density was recorded in Peint tahsil (99) followed by Surgana (91) tahsil lying in west part in study region due to hilly area, dense forest cover, less urbanization and less industrialization, poor transport and remote area. The moderate density between 50 to 80 persons per square kilometer was identified in Nashik (65), Igatpuri (65), Kalvan (65) and Dindori (61) tahsils. The less tribal population density in study region was found in Yevla (10), Sinnar (15), and Nandgaon (16) tahsils. These tahsils are located in east part in study region. The density of tribal population is decreases from west to east part due to increasing non-tribal population in study region.

Fig.-3.1 : Tribal Population Density

Table-3.1: Arithmetic Density of Tribal Population in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	65	162	97	Nandgaon	16	25	9
Peint	99	161	62	Yevla	10	20	10
Dindori	61	103	42	Niphad	41	76	35
Surgana	91	163	72	Sinnar	15	26	11
Kalvan	65	127	62	Igatpuri	65	102	37
Baglan	45	73	28	Trimbakeshwar	N.A.	120	N.A.
Malegaon	23	36	13	Devala	N.A.	37	N.A.
Chandvad	19	39	20	District Total	45	77	32

Source: District Census Handbook of Nashik District for 1981 and 2001.

Note: (i) Density is given in person per square kilometer, (ii) N.A.= Data not available,

It is observed that density of tribal population in Nashik district was 77 persons per square kilometer in 2001. The variations in tribal density have found within study region. The highest density was recorded in Surgana tahsil (163) followed by Nashik (162), Peint (161) Kalvan (127), Trimbakeshwar (120), Dindori (103) and Igatpuri (102) tahsils. These tahsils lie in west part in study region. This has attributed to hilly, forest and remote area except Nashik tahsil. The tribals in-migration in search jobs in Nashik city. The lowest tribal population density was found in Sinnar (26), Nandgaon (25), and Yevla (20) tahsils. These tahsils are located east part in study region. The decline trend is observed in 1981 and it decreases from west to east in study region. The change in tribal density during 1981 to 2001 is positive. The growth of total population density for 1981 to 2001 was 129 persons per square kilometer. The density of tribal population has slightly increased during study period (32) and west lying tahsils have recorded positive growth of tribal density. The highest volume of growth of tribal density was recorded in Nashik tahsil (97) because of larger industrial development, district headquarter, educational center hence tribals have migrated. The growth of tribal density is observed high in Surgana (72), Kalvan (62) and Peint (62) tahsils. The largest growth of tribal density was observed in Nandgaon tahsil (9), Yevla (10), Sinnar (11) and Malegaon (13). These tahsils belong to non-tribal and drought prone area and has dominance of agriculture and industry activity.

3.3 Distribution of Tribal Population

Tribal population in study region lives in isolated pockets since times immemorial and has restricted to certain areas. There has been tendency of migration towards metropolitan cities but by and large, tribal population has been confined in certain geographical areas in study region. The tribal populations belong to Koli-Mahadev, Kokna, Bhil, Thakar, Warli, Kathdi, Katkari, Koli-Dhor, Tokare-Koli, and Pardhi are found in study region. The location of tribal population differs within study region due to racial and social characteristics (Jemes, 1954). The distribution of tribal population is shown in Fig.-3.2 for 1981 and 2001. There was 23.45 percent tribal population in study region (1981). More than 50 percent tribal population was observed in west and northwest parts in study region. The highest tribal population percent was observed in Peint tahsil (93.68) followed by Surgana (91.77), Kalvan (49.45) and Dindori (49.28) tahsils. It is observed that tribals are mainly found in isolated pockets and have restricted in hilly and forest area and therefore dominance of tribal population. 50 to 25 percent tribal populations were observed in Igatpuri and Baglan tahsils accounting 39.82 and 29.84 percent respectively. The less than 25 percent tribal population was found in Niphad (14.92), followed by Chandvad (13.95), Nashik (13.05), Nandgaon (10.20), Sinnar (10.08), Malegaon (8.71) and Yevla (6.18) tahsils. These tahsils are located at central and east parts in study region. This region is comparatively plain and has less forest and was found prosperous in agriculture, industries, transport and education. The distribution of tribal population in study region is uneven due to vast variation of topography, climate and soil types. The distribution of tribal population is shown in Fig.-3.2 for 2001. The percent of tribal population in 2001 was slightly increased from 23.45 to 23.92 percent. Though, there was total 23.92 percent tribal population in study region. The tribal population of more than 50 percent are located in west and northwest parts in study region. The highest tribal population percent was observed in Surgana tahsil (94.81) followed by Peint (92.92), Trimbakeshwar (77.93), Kalvan (65.79) and Dindori (52.52) tahsils. 50 to 25 percent tribal population have observed in Igatpuri and Baglan tahsils accounting 37.85 and 34.42 percent respectively.

Fig.-3.2 : Tribal Population Percent

Table-3.2 : Percent of Tribal Population in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	13.05	09.95	-3.1	Nandgaon	10.20	11.42	1.22
Peint	93.68	92.92	-0.76	Yevla	6.81	09.08	2.27
Dindori	49.28	52.52	3.24	Niphad	14.92	18.13	3.21
Surgana	91.77	94.81	3.04	Sinnar	10.08	12.14	2.06
Kalvan	49.45	65.79	16.34	Igatpuri	39.82	37.85	-1.97
Baglan	29.84	34.42	4.58	Trimbakeshwar	N.A.	77.93	N.A.
Malegaon	8.71	08.33	-0.38	Devala	N.A.	16.46	N.A.
Chandvad	13.95	18.01	4.06	District Total	23.45	23.92	0.47

Source: District Census Handbook, Nashik District for 1981 and 2001

Note: (i) N.A.= Data not available, (ii) Figure indicates the percent.

The less than 25 percent tribal population was found in Niphad tahsil (18.13) followed by Chandvad (18.01), Devala (16.46), Nashik (09.95), Sinnar (12.14), Nandgaon (11.42), Yevla (9.08), and Malegaon (8.33) tahsils. These tahsils are located in central and east parts in study region in plain has less vegetation cover, rich in crops grown, industries, transport and education.

The growth and change of tribal population during study period (1981-2001) is shown in Fig.-3.2 and Table-3.2. The tribal population percent has increased from 23.45 to 23.92 during study period. It was increased by 0.47 percent whereas tribal population percent has found decrease in Nashik (-3.1 percent), Igatpuri (-1.97), Peint (-0.76) and Malegaon (-0.38) tahsils. Nashik tahsil has found decrease because of separation of Trimbakeshwar tahsil from Nashik. Peint, Igatpuri tahsils declined tribal population due to out-migration, decrease in birth rate and high death rate. Malegaon tahsil has declined tribal population whereas Nashik tahsil has (-3.1) found declining percent of tribal population during study period.

The percent of tribal population in each tahsil and the areas of tahsils as a percent to total area of district were computed and then added cumulatively from the lowest percent area to highest percent area to give the coordinates for construction Lorenz Curve. Here, each pair of value was plotted as coordinates with cumulative population on ‘X’ axis and cumulative area on ‘Y’ axis. Fig.-3.3 exhibits population space relationship by Lorenz curve. The actual trace line is compared against the theoretical distribution. Actual trace line differs from the theoretical or trace of perfect equal line.

Fig.-3.3 : Population Space Relationship

Table-3.3 : Cumulative Percent of Area and Tribal Population, 2001.

Tahsils	Percent of Total Area	Percent of Total Tribal Population	Tahsils	Percent of Total Area	Percent of Total Tribal Population
Peint	3.61	7.53	Niphad	47.51	66.85
Devala	7.27	9.32	Yevla	54.36	68.64
Nashik	12.49	20.30	Nandgaon	61.38	70.90
Surgana	17.93	31.82	Dindori	70.02	82.54
Igatpuri	23.38	39.05	Sinnar	78.73	85.51
Kalvan	28.92	48.17	Baglan	88.25	94.49
Trimbakeshwar	34.55	57.08	Malegaon	100.00	100.00
Chandvad	40.72	60.17	-	-	-

Source: District Census Handbook, Nashik District, 2001. Note: Figures indicates percent.

It shows higher the coefficient, means tribal population is distributed unevenly in study region. There is a clear concentration of tribal population in Peint tahsil due to hilly area, forest cover resulting isolation of tribals. Actual trace line shows high concentration of tribal population in study region as it appears above the 45^0 of theoretical trace line.

3.4. Tribal Population Concentration

The concentration of tribal population has calculated by using location quotient method. The formula of this method is as below:

$$\text{Population Concentration Index} = \frac{TP/TA}{DP/DA}$$

Where:

TP = Tahsil population

TA = Tahsil area in square kilometer

DP = District population

DA = District area in square kilometer

The concentration index (1.00) is considered as average concentration of tribal population. It means that tribal population concentration is similar to district where value is 1. A particular tahsil has shown high level of concentration where the value of location quotient is above 1, the concentration of population would be less and dispersed in the area where the value is less than 1 and where the value is exactly 1, then it is balanced one. In present study, it is considered that index value is greater than 1.2 indicating high concentration. In order to understand the absolute concentration, percent of tribal population to total tribal population has studied. For the decennial growth rate at tahsil level simple growth rate formula has been

employed. The index of concentration is computed by using the location quotient method as given below:

$$\text{Location Quotient Index} = \frac{\text{Percent of Tribal Population to Total Population in a Tahsil}}{\text{Percent of Tribal Population to Total Population in the District}}$$

The concentration of tribal population for each tahsil in study region is calculated (Fig.-3.4) for 1981 and 2001. The high concentration of tribal population was recorded in Peint tahsil (3.99) followed by Surgana (3.91) Dindori (2.10), Kalvan (2.11), Igatpuri (1.76) and Baglan (1.27) tahsils indicating more tribal concentration than the district average in 1981. The remaining tahsils, namely, Niphad (0.64), Chandvad (0.59), Nashik (0.56), Sinner (0.43), Nandgaon (0.43), Malegaon (0.37), and Yevla (0.29) have value less than 0.8 showing less tribal concentration. In 2001, similar trend is observed in study region. The high concentration was recorded in Surgana tahsil (3.96) followed by Peint (3.88), Trimbakeshwar (3.26), Dindori (2.20), Kalvan (2.75), Igatpuri (1.58) and Baglan (1.44) tahsils presenting very high tribal concentration and Nashik, Malegaon, Chandvad, Nandgaon, Yevla, Niphad and Sinnar tahsils have found value less than 0.8 showing less concentration than the district. It found slight increase of tribal concentration in Kalvan, Baglan, Chandvad, and Niphad tahsils accounting 0.64, 0.17, 0.16 and 0.12 values respectively. Nashik, Igatpuri, Peint and Malegaon tahsils have decreased tribal concentration from 1981 to 2001. Tribal population is highly concentrated in west part in study region (Fig.-3.4).

Table- 3.4 : Tribal Population Concentration in Nashik district

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	0.56	0.41	-0.15	Nandgaon	0.43	0.48	0.05
Peint	3.99	3.88	-0.11	Yevla	0.29	0.38	0.09
Dindori	2.10	2.20	0.1	Niphad	0.64	0.76	0.12
Surgana	3.91	3.96	0.05	Sinnar	0.43	0.51	0.08
Kalvan	2.11	2.75	0.64	Igatpuri	1.76	1.58	-0.12
Baglan	1.27	1.44	0.17	Trimbakeshwar	N.A.	3.26	N.A.
Malegaon	0.37	0.35	-0.02	Devala	N.A.	0.69	N.A.
Chandvad	0.59	0.75	0.16	District Total	1.00	1.00	0

Source: District Census Handbook of Nashik District for 1981 and 2001

Note: (i) N.A.= Data not available, (ii) Computed by Researcher.

Dindori, Kalvan, Baglan, Chandvad, Nandgaon, Yevla, Niphad and Sinnar tahsils have slightly increased tribal concentration during 1981 to 2001 in study region. Kalvan tahsil recorded high increased of tribal concentration during study period.

Fig.-3.4 : Tribal Population Concentration

The growth in tribal concentration is more than zero is found in Dindori (0.1), Baglan (0.17), Chandvad (0.16), Nandgaon (0.05), Yevla (0.09), Niphad (0.12) and Sinnar (0.08) tahsils whereas Nashik, Peint, Igatpuri, Malegoan tahsils have declined from 1981 to 2001. The highest tribal concentration has declined in Nashik (-0.15) because of separation of Trimbakeshwar tahsil from Nashik tahsil. It is found that in-migration of non-tribal people from surrounding at Nashik. Peint and Igatpuri tahsils have declined concentration in study region.

3.5 Growth of Tribal Population

Population growth is another important aspect in population study. The growth decline of population is the sum total of natural increase (birth rate), natural decrease (death rate) and migration. The physical and social conditions of study region determine growth of population. The growth of population both positive and negative does reflect man's response to the environment of the region (Mandal, 2007). The decadal growth rate can be computed by using following formula :

$$\text{Growth Rate} = \frac{P2 - P1}{P1} \text{ X } 100$$

Where, P1 = Population of previous decade, and

P2 = Population of current decade.

Tribal population growth rate is calculated for 1981-1991 and 1991-2001 in present study. Fig-3.5A exhibits growth of tribal population in study period indicates rapid population growth for 1981-1991 as compared to further decade (1991-2001). The rural population in study region is very high as compared to urban population. Hence, rural population shared more percent in total population. Table-3.5 presents the growth rate of urban population in study region (69.29 percent) in 1981 (Appendix-C).

Table- 3.5: Rural Urban Growth in Nashik District

Area	Decadal Growth Rate (6%)		Volume of Change
	1981-1991	1991-2001	
Rural	30.26	26.71	-3.55
Urban	69.29	46.27	-23.02
Total	32.70	28.27	-4.43

Note: Computed by Researcher.

This indicates tribal attracts towards urban centers for getting employment other services and causing migration in study region. The rural, urban and total growth rates are found declining from 1991 to 2001.

Fig.-3.5 A : Tribal Population Growth

B : Tribal Population Projection

The urban growth rate has declined rapidly by -23.02 percent. This has attributed to the increase of literacy and awareness in urban region. The birth rate has found decline and results in control the growth of tribal population in urban area.

Table -3.6: Tribal Population Growth Rate in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981-1991	1901-2001			1981-1991	1901-2001	
Nashik	43.49	11.70	-31.79	Nandgaon	28.96	21.18	-07.78
Peint	31.11	-26.02	-57.13	Yevla	50.99	40.53	-10.46
Dindori	33.86	28.57	-05.29	Niphad	32.41	38.39	05.98
Surgana	37.73	31.41	-06.32	Sinnar	33.70	36.30	02.60
Kalvan	33.69	5.59	-28.09	Igatpuri	22.04	06.29	-15.75
Baglan	27.59	15.82	-11.77	Trimbakeshwar	N.A.	N.A.	N.A.
Malegaon	22.33	19.35	-02.98	Devala	N.A.	N.A.	N.A
Chandvad	39.79	42.27	02.48	District Total	32.70	28.27	-04.43

Source: District Census Handbook, Nashik District for 1981 and 2001

Note: Note: (i) N.A.= Data is not available (ii) Computed by Researcher.

Table-3.6 exhibits the growth of tribal population in study region during 1981-91 accounting 32.7 percent which was declined to 28.27 percent for 1991-2001 showing declining growth rate of tribal population (-4.43 percent). From 1981 to 1991, highest growth of tribal population was observed in Yevla (50.99) followed by Nashik (43.49), Chandvad (39.79), Surgana (37.73), Dindori (33.86), and Kalvan (33.69) tahsils which is above the average of study region. The growth rate in Igatpuri tahsil (22.04) and Malegaon (22.33) is shown in Fig.-3.6 is low. During 1991 to 2001 highest growth of tribal population was identified in Chandvad tahsil (42.27) followed by Yevla (40.53), Niphad (38.39), Sinnar (36.30) and Surgana (31.41) tahsils in study region. Peint tahsil indicates negative growth of -26.02 percent because of changing boundaries Nashik, Dindori, Kalvan tahsils have found decline tribal population growth rate during the study period.

It is found that 0.96 percent positive growth for total population in study region but tribal population have found negative growth (-04.43) during study period. The highest growth of tribal population was observed at Niphad (05.98) followed by sinner (2.60) and Chandvad (2.48) tahsils (Fig.-3.6). The volume of growth has variations in Peint, Nashik, Igatpuri, Kalwan and Baglan tahsils due to reorganisation of tahsil boundaries in 1999. The remaining tahsils in study region have recorded negative tribal population growth.

Fig.-3.6 : Tribal Population Growth Rate

3.5.1 Tribal Population Projection

Projection of population is the conditional statements regarding growth for future period. This refers mostly to exercises of extrapolation of past trends into the future. This does not take into account changes in the policy parameters. Population is a constant state of change in term of number and characteristics. For practical and planning purposes, it is necessary to understand the number and characteristics of population. Population projections are estimated the population for future period. The annual growth rate can be projected by following formulas :

(a) Crude method : $\mathbf{R = 1/n * ((Pn - Po)\ x^{\wedge}2)\ /(Po)\ X\ 100}$

(b) Compound method : $R = [(P_n / P_o)^{1/n} - 1] \times 100$

Where :

R = Annual rate of growth

P_n = Population in the current year

P_o = Population in the base year

n = Number of intermediary years.

R = 22.03 is the decadal growth rate from 1991 to 2001. The annual growth rate can be simply obtained by dividing the decadal rate of growth by 10. By assuming this growth rate would continue in the future. Tribal population figures have obtained for 2011 and 2021 year by crude method of projection. It shows that tribal projected population is 1457473 persons in 2011 and 1720675 persons in 2021. The compound growth rate method is slightly improved method use to project the population. In which R = 2.52 is annual growth rate has taken for the year 1991 and 2001. It is found that population may increase than crude method and will reach upto 15,31,753 persons and 19,62,687 persons in 2011 and 2021 respectively. Fig.-3.5B exhibits difference between crude and compound projection method. The provisinal tribal population (15,64,369) is very clouse to compound method projected (15,31,753). However, it is considered that tribal population may increase faster and therefore it needs to change the family planning policies, family health programmes and education policies among tribal population in study region.

3.6 Tribal Sex Composition

The population exhibits certain inhabitant characteristics in term of sex composition. The change in sex composition largely reflects the underlying socio-economic conditions and cultural patterns of the society. The ratio between male and female is called sex ratio. In India, sex ratio is defined as the number of females per 1000 males population and it is useful indicator to measure the gender equity in region at a given point of time. The primary sex ratio is the ratio at the time of conception, secondary sex ratio is the ratio at time of birth and tertiary is the ratio of mature organisms. The changes in gender composition largely depend on social, economic conditions and cultural pattern of the society. Moreover, sex ratio measures the prevailing equality between males and females and has on outcome of interplay of sex differentials in mortality, sex selective migration, sex ratio at time of birth, sex differential in population enumeration (Census of India, 2001). The sex ratio influences the economic conditions, migration, occupation structure, marriage status, fertility, mortality and growth of rate population. Table-3.6 presents tribal sex ratio in study region for 1981 and 2001. According 1981 Census, total tribal population sex ratio in study region was 979 females. Chandvad tahsil accounts 998 females and has ranked first in study region (Appendix-D). The sex ratio of more than 975 females has observed in all tahsils except Nashik and Sinner tahsils in study region. The sex ratio between 950 to 975 was found in Sinner tahsil. Nashik tahsil exhibits lowest sex ratio (949) in study region. Fig.-3.7 reveals high sex ratio in west, north, east and central parts and moderate sex ratio in south part in study region. This has attributed to tribal out-migration for seeking jobs and imparting education. In nutshell, sex ratio in 1981 represents no gender discrimination, no son preference and ignorance of sonography. In 2001, tribal sex ratio was 976 in study region. The lowest sex ratio was found in Nashik tahsil (932) due to urbanization, industrialization and male in-migration in Nashik Citiy for jobs, education and other services. The highest tribal sex ratio was observed in Kalvan (1000) followed by Peint (998), Surgana (995), Trimbakeshwar (990), Chandvad (983), Yevla (981), Igatpuri (978). Niphad (976) and Sinner (976) tahsils. The sex ratio between 950 to 975 was found in Malegoan (970), Baglan (969), Devala (960) and Nandgoan (950). Fig.-3.7 presents high tribal sex ratio in west part and moderate sex ratio in central and east parts in study region. Tribal sex ratio in 1981 was 979 and It was 976 in 2001.

Fig.-3.7 : Tribal Population Sex Ratio

The sex ratio has found declining by -3 during study period in study region. Peint, Kalvan, Yevla, Dindori and Sinner tahsils have increased tribal sex ratio during study period.

Table-3.7: Tribal Sex Ratio in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	949	932	-17	Nandgaon	989	950	-39
Peint	987	998	11	Yevla	979	981	2
Dindori	979	971	-8	Niphad	987	976	-11
Surgana	983	995	12	Sinnar	966	976	10
Kalvan	980	1000	20	Igatpuri	983	978	-5
Baglan	983	969	-14	Trimbakeshwar	-	990	-
Malegaon	987	970	-17	Devala	-	960	-
Chandvad	998	983	-15	District Total	979	976	-3

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : Figures indicate females per thousand males.

Fig.-3.8 reveals rural sex ratio in study region. The rural tribal sex in 1981 was 982. The highest tribal rural sex ratio was recorded in Chandvad tahsil (1001) followed by Nandgaon (994) and Dindori (987) and lowest was observed in Nashik (965) tahsil. In 2001, study region has recorded 980 females per 1000 males in rural tribal population. The highest tribal rural sex ratio was recorded in Kalvan tahsil (1000) followed by Peint (998), Surgana (998) and Trimbakeshwar (991) tahsils. The lowest sex ratio was observed at Nashik tahsil (936). It was noticed that rural tribal sex ratio is less in urban tahsils from 1981 to 2001 and has decreased by-2 in study region. Nandgaon tahsil has decreased by -41, followed by Nashik (-29), Chandvad (-18), Baglan (-15), and Malegaon (-14) tahsils. Peint, Surgana, Yevla, and Sinner tahsils have found increase tribal rural sex ratio during study period (Appendix-C& E).

Table-3.8: Rural Tribal Sex Ratio in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	965	936	-29	Nandgaon	994	953	-41
Peint	987	998	11	Yevla	982	984	2
Dindori	979	971	-8	Niphad	985	975	-10
Surgana	983	998	15	Sinnar	967	976	9
Kalvan	980	1000	20	Igatpuri	985	979	-6
Baglan	984	969	-15	Trimbakeshwar	N.A.	991	N.A.
Malegaon	982	968	-14	Devala	N.A.	960	N.A.
Chandvad	1001	983	-18	District Total	982	980	-2

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : Figures indicate females per thousand males.

Fig.-3.8 : Rural Tribal Sex Ratio

The urban tribal sex ratio in study region was 943 in 1981 and has decreased by -4 in 2001. Malegaon tahsil has recorded highest urban tribal sex ratio (1024) whereas Igatpuri has lowest sex ratio 855 in 1981. Four tahsils, namely, Peint, Dindori, Surgana and Kalwan have found rural population and is lacking urban sex ratio (Fig.-3.9). In 2001, Niphad tahsil has recorded highest (999) and Surgana reported lowest (887) urban tribal sex ratio. Igatpuri, Baglan, Nashik and Sinner tahsils have increased tribal urban sex ratio (104), (46), (12) and (11) respectively. There is significant increase of tribal urban sex ratio in Igatpuri tahsil (104). The urban tribal sex ratio is less as compared to rural sex ratio due to continuous in-migration of male population in urban centres. It was also observed that urban sex ratio is high than the rural sex ratio in Baglan, Malegaon and Niphad tahsils in 2001. It was noted that both tribal and total population sex ratio in study region has declined by -13 and it is more as compared to total tribal sex ratio (-3). It was also observed that tribal population sex ratio was higher in rural, urban and total than the total population in study region. It was found that urban centres have adverse affect on sex ratio. Male have migrated in urban areas resulting increase of sex ratio in rural area and reducing in urban areas in study region.

Table- 3.9 : Urban Tribal Sex Ratio in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	918	930	12	Nandgaon	963	931	-
Peint	-	-	-	Yevla	947	934	-13
Dindori	-	-	-	Niphad	1013	999	-14
Surgana	-	887	-	Sinnar	958	969	11
Kalvan	-	-	-	Igatpuri	855	959	104
Baglan	932	978	46	Trimbakeshwar	N.A.	951	N.A.
Malegaon	1024	985	-39	Devala	N.A.	-	N.A.
Chandvad	934	-	-	District Total	943	939	-4

Source : District Census Handbook, Nashik District for 1981 and 2001.
Note : Figures indicate females per thousand males.

3.7 Age-Sex Composition

The socio-economic conditions and way of living within community affects considerably by relative numbers of population in each age. The age structure of population is classified by sex in the form of age-sex pyramid. The base of pyramid presents the low age i.e. zero.

Fig.-3.9 : Urban Tribal Sex Ratio

The top of pyramid indicates the maximum age above 80 years. The pyramid becomes conic when it moves upward indicting region is in developing stage (Jhingan and others, 2006). The developing countries are passing through this second stage. Population are increasing rapidly and the expectancy of life and dependent ratio have found increasing. The population age can be categorized in three broad age groups, namely, young (0-14), adult (15-59) and old (60 and above). The social and economic condition reflects in these three age groups (Clarke, 1972).

Table-3.10: Age-sex Structure of Tribal Population in Nashik District

Age Groups	Sex Percent			Age Groups	Sex Percent		
	Male	Female	Total		Male	Female	Total
00-04	6.91	6.73	13.6	50-54	1.59	1.5	3.09
05-09	7.07	6.78	13.9	55-59	1.25	1.33	2.57
10-14	6.85	6.08	12.9	60-64	1.07	1.36	2.43
15-19	5.13	4.61	9.74	65-69	0.91	1.03	1.94
20-24	4.05	4.16	8.21	70-74	0.51	0.57	1.07
25-29	3.56	3.63	7.19	75-79	0.19	0.22	0.4
30-34	3.19	3.42	6.61	80+	0.18	0.22	0.4
35-39	3.24	3.21	6.45	Not stated	0.06	0.05	0.11
40-44	2.63	2.46	5.09	District Total	50.6	49.4	100
45-49	2.23	2.04	4.27				

Source : District Census Handbook, Nashik District, 2001.

Fig.-3.10 exhibits age-sex pyramid for tribal population for 1981 and 2001. Population pyramid in 1981 is conical in shape and has wide base indicating large number for 5 to 9 age groups. The female proportion is less for 15 to 19 age group showing high mortality among female during delivery period (Appendix-F and G). In tribal community, marriage age is less and medical facilities are inadequate whereas proportion of male and female reduces at higher age group very rapidly hence life expectancy is less. Pyramid in 2001 is conical in shape having broad base and narrow top (Fig.-3.10). It clearly indicates tribals are in developing stage. It was found that persons below 14 years account 40.42 percent which is more representing high fertility rate. Between 0 to 14 age group females are slightly less as compared to males whereas 15-59 age group is found slight fluctuation and females are more as compared to males working population participated in work. Old age group accounts 6.26 per cent population. The percent of old age reduces very fast as age increase represents poor life expectancy among tribals.

Fig.-3.10 : Age Sex Pyramid

The female proportion is high as compared to male in this group resulting less life expectancy among male and widow women in study region. Fig.-3.11 reveals urban and rural age sex pyramid for 2001. The population structure of rural area differs from urban area. Fewer younger and proportionately older people have found in rural area. Both pyramids are found triangular shape but urban pyramid is slime shape and population have decreased as age increases at faster rate. The proportion of females is more in old age group for rural area in study region.

3.8 Literacy of Tribal Population

Literacy is an indispensable mean for acquiring skills and improve economic condition. From demographic point of view, literacy is the variable affecting fertility, mortality and migration. Literacy supports for development and population control too (Singh, J. 2006). According to Census, 2001, children age (7 years or below) is treated illiterate even though they may be going to school and can read and write to same extent. A person of 7 years and above who can both read and write with understanding in any language is considered as literate. A person who can only read but cannot write is not literate. It is not necessary that to be considered as literate, a person should have received any formal education or passed any minimum educational standard. Literacy could also have been achieved through adult literacy class or through any non-formal educational system. (District Census Handbook, Nashik, 2001) and even who are blind and can read in Braille script are treated as literate. Literacy rate of population is defined as the percent of literate in the age group seven years and above. Literacy rate directly affects services, health, economy, standard of living and overall development of study region (Appendix-H).

Table-3.11 : Tribal Population Literacy in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	21.55	55.4	33.85	Nandgaon	15.07	36.3	21.23
Peint	15.18	55.0	39.82	Yevla	16.95	39.2	22.25
Dindori	21.06	59.9	38.84	Niphad	17.97	50.7	32.73
Surgana	14.51	51.2	36.69	Sinnar	16.44	49.7	33.26
Kalvan	15.76	44.3	28.54	Igatpuri	16.09	50.9	34.81
Baglan	15.06	43.3	28.24	Trimbakeshwar	-	44.6	N.A.
Malegaon	13.31	39.8	26.49	Devala	-	44.0	N.A.
Chandvad	13.63	47.5	33.87	District Total	16.73	49.3	32.57

Source: District Census Handbook, Nashik District, 1981 and 2001.
Note:(i) Literacy for 1981 including children below 7 years (ii) Figures are in percent.

Fig.-3.11 : Age Sex Pyramid 2001

Table.-3.11 reveals total tribal population literacy in study region. It was 16.73 percent in 1981 and 49.3 per cent in 2001. This indicates tribal community is lacking behind in their life. Though literacy rate of tribal population has increased but it has not increased actually as there is change of literacy definition and excluding children below 7 years in 2001. Tribal literacy is very less as compared to literacy in study region (74.31). In 1981, Nashik tahsil has found highest tribal literacy (21.55) followed by Malegaon tahsil (13.31) percent. Fig.-3.12 exhibits tribal literacy in study region. Whereas, other tahsils have less literacy in study region from 10 to 20 percent. In 2001, literacy has increased lying central west part tahsils (Above 50 percent) and it has decreased towards east in study region. 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 job opportunities and imparting education. The volume of change in literacy can be grouped into three divisions. First division is located at northwest part where more than 35 percent literacy is identified in Peint, Surgana and Dindori tahsils. The southern tahsils have increased literacy by 30 to 35 percent. The north and east tahsils have less progress in terms of literacy. It is observed that tribal concentrated tahsils has high in literacy in study region.

Table-3.12 : Male Tribal Literacy in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	31.14	67.2	36.06	Nandgaon	23.39	49.2	25.81
Peint	22.93	67.1	44.17	Yevla	25.5	52.3	26.80
Dindori	31.84	72.2	40.36	Niphad	28.04	62.3	34.26
Surgana	22.16	62.3	40.14	Sinnar	25.51	63.3	37.79
Kalvan	22.75	54.7	31.95	Igatpuri	25.32	65.1	39.78
Baglan	22.07	54.3	32.23	Trimbakeshwar	-	56.7	N.A.
Malegaon	20.59	51.0	30.41	Devala	-	54.5	N.A.
Chandvad	22.54	59.6	37.06	District Total	25.24	61.2	35.96

Source : District Census Handbook, Nashik District for 1981 and 2001.
Note : Literacy for 1981 includes children below 7 years.

Among the tribal male, literacy is much higher than the female literacy in study region. Table-3.12 exhibits literacy among tribal male and female. In 1981, it was 25.24 for male and 8.05 percent literacy for female in study region.

Fig.-3.12 : Tribal Literacy

It is found that literacy among female is very less and it badly influences birth rate, infant mortality, nutrition and health, services, per capita income and socio-economic condition of tribal society. In 2001, literacy for male and female have increased upto 61.2 and 37.2 percent respectively. Dindori tahsil has highest literacy as three senior colleges and numbers of schools impart education in this tahsil. Fig.-3.13 reveals that south part has high male literacy as compared to north in 1981 due to availability of education facilities at Nashik, Sinner, Dindori, Igatpuri, Niphad and Yevla tahsils. Moreover, these tahsils have well connected by roads and railway. In 2001, male literacy has increased above 65 percent in Nashik, Igatpuri, Dindori and Peint tahsils. The remaining tahsils have found only 40 to 65 percent literacy. Surgana, Paint and Dindori tahsils have recorded maximum growth of male tribal literacy (Fig.-3.13) and volume in change indicates that literacy growth decreases towards east in study region.

Table-3.13 : Female Tribal Literacy in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	11.44	42.8	31.36	Nandgaon	6.65	23.0	16.34
Peint	7.34	42.9	35.56	Yevla	8.22	25.8	17.57
Dindori	10.04	47.2	37.16	Niphad	7.78	38.8	31.02
Surgana	6.72	40.2	33.48	Sinnar	7.06	35.7	28.64
Kalvan	8.62	33.9	25.27	Igatpuri	6.69	36.2	29.50
Baglan	7.92	31.9	23.97	Trimbakeshwar	-	32.4	N.A.
Malegaon	5.92	28.3	22.37	Devala	-	32.9	N.A.
Chandvad	4.68	35.2	30.51	District Total	8.05	37.2	29.15

Source : District Census Handbook, Nashik District, 1981 and 2001.
Note : Literacy for 1981 includes children below 7 years.

Literacy among tribal female is 8.05 and 37.2 for 1981 and 2001 respectively. The female literacy was increased by five times during study period in study region. Dindori tahsil has recorded highest female literacy (47.2 percent) in 2001 (Fig.-3.14). Nashik and Dindori tahsils have found female literacy between 10 to 20 percent and remaining tahsils have less than 10 per cent in 1981. Whereas Nashik, Dindori, Paint and Surgana tahsils have recorded more than 40 percent female literacy (1981). Female literacy has declined towards east in study region. Peint and Dindori tahsils have increased female literacy and it decreases towards north and east parts in study region.

Fig.-3.13 : Male Tribal Literacy

Fig.-3.14 : Female Tribal Literacy

The high literacy among tribals is found in tribal dominance area and less in non-tribal area. Low literacy among tribal females attributed to secondary importance given to female education in tribal society in study region.

3.9 Tribal Dependency Ratio in Nashik District

The dependency ratio is the ratio of economically active to economically inactive persons which depend on age composition. This helps for planning food production and agricultural development. The sex composition directly affects proportion of marital status, supply of workers, fertility, migration and indirectly affects literacy, birth rate and death rate. The imbalance in dependency ratio is harmful social structure. If proportion of males to total population is higher than the females, age of marriage for female decreases and this affects the female's health. The gap between age of husbands and wife wives increases the number of widows. It changes sex composition largely reflect in socio-economic and cultural condition in study region. In present study, young age dependency ratio, old age dependency ratio, total dependency ratio, and index of ageing have computed for tribal population by using following formulas :

(a) $$\text{Young Age Dependency Ratio} = \frac{\text{Population Aged (0-14) Years}}{\text{Population Aged (15-59)}} \text{ X } 100$$

(b) $$\text{Old Age Dependency Ratio} = \frac{\text{Population Aged 60 + Years}}{\text{Population Aged (15-59)}} \text{ X } 100$$

(c) $$\text{Total Dependency Ratio} = \frac{\text{Population Aged (0-14) Years and 60 + Years}}{\text{Population Aged (15-59)}} \text{ X } 100$$

(d) $$\text{Index of Ageing} = \frac{\text{Population Aged 60 + Years}}{\text{Population Aged (0-14)}} \text{ X } 100$$

Table-3.14: Dependency Ratio in Nashik District, 2001

Sr. No.	Tribal Population	Dependency ratio	Sr. No.	Tribal Population	Dependency ratio
1	Young age	75.99	3	Total	87.93
2	Old age	11.94	4	Index of ageing	15.72

Source : Computed by Researcher. Note : Figures are given in percent.

Total dependency of tribal population is 87.93 showing high as compared to total population due to poverty and backwardness of tribal population in study region. Young age dependency ratio is 75.99, specify high fertility and old age dependency 11.94 attribute less life expectancy among the tribes. The index of ageing is used to

measure the relative number of old persons to total tribal population. Index of ageing is low among tribal population (15.72) indicating developing stage. The high population growth and high mortality in old age, ageing index of tribal is found low as compared to total population (ageing index = 22.31) in study region.

3.10 Composition of Tribal Caste

Caste is one of identity of population in any region. The composition of caste in study region is shown in Table-3.15 (Appendix-I).

Table-3.15 : Tribal Composition by Caste in 2001.

Tribal Caste	Population	Percent	Tribal Caste	Population	Percent
Koli Mahadev etc.	394631	33.04	Varli	57131	4.78
Kokna etc.	360755	30.21	Kathodi etc.	7194	0.60
Bhil etc.	300495	25.16	Other caste	11438	0.96
Thakur etc.	62627	5.24	Total	1194271	100.00

Source : District Census Handbook, Nashik District, 2001.

Note: Scheduled Tribes include figures for 'Unclassified'.

The scheduled tribes population in study region consists of 23.92 percent in 2001. The distribution of scheduled tribe population is uneven by numbers and these castes have spreaded over in study region. There are about 41 castes in tribal population in study region. Among them, Koli Mahadev, Kokana, Bhil, Thakur, Varli, and Kathodi are major tribes in study region (Fig.-3.15A). The percent of Koli Mahadev is highest accounting 33.04 percent followed by Kokana (30.21), Bhil (25.16), Thakur (5.24), Varli (4.78), Kathodi (0.60) and others (0.96). Pardhi, Gond Raigond, Halba, Nikda and other castes tribes are also found in study region but their proportion are very less. The Hindu tribals have dominated in study region accounting 99.76 percent followed by Muslim and Christians.

3.11 Tribal Education

Education is generally measured by percent and distribution of various levels of education of literate population above the age of 10 or 15. Table-3.16 gives the figures bringing on education among males and females for all age groups for tribal population. The education of tribal population in study region is very poor. Out of 11,94,271 persons only 2,40,669 persons have educated accounting 20.15 percent (2001) (Appendix-J and K).

Fig.-3.15A : Caste Composition of Tribal Population 2001

B : Tribal Population Educational Level at 2001

There are variations in imparting education within various age groups and sex. Out of total attainment 56.96 percent males and 43.04 percent female are attending education. The proportion of male is more than female indicating male preference for education among tribal. Table-3.16 exhibits that 0-6 age group has high percent male and female attending education but their percent decrease suddenly among high age groups. It decreases with increasing age group. This proportion is high among tribal female due to child marriages, male education is given preference and has unequal treatment etc.

Table -3.16 : Age-sex and Education in Tribal Population, 2001.

Age Groups	Male	Female	Total
0-5	0.71	0.70	1.40
6-14	44.61	36.85	81.46
15-19	9.30	4.70	14.01
20-24	1.93	0.53	2.46
25+	0.41	0.25	0.66
Age not stated	0.01	0.00	0.01
All age groups	56.96	43.04	100.00

Source : District Census Handbook, Nashik District, 2001.

Note: (i) Computed by Researcher (ii) Figures indicate percent.

It has been observed that highest attainment in education is found in school level upto primary and secondary school. Among male, educational attainment is comparatively better than female in study region (Fig.-3.15B).

Table-3.17 : Sex and Education in Tribal Population, 2001

Sr. No.	Educational Attainments	Total	Male	Female
1	Literate without educational level	2.86	2.78	2.98
2	Below primary	46.03	43.03	50.99
3	Primary School	26.39	26.07	26.94
4	Middle School	11.37	12.25	9.92
5	Secondary	8.67	9.94	6.57
6	Higher Secondary	2.97	3.64	1.87
7	Non-technical diploma or	0.00	0.00	0.00
8	Technical diploma or certificate	0.26	0.38	0.06
9	Graduate and above	1.44	1.91	0.67
10	Unclassified	0.00	0.00	0.00
	Total	100.00	100.00	100.00

Source: District Census Handbook, Nashik District, 2001.

Note: (i) Computed by Researcher (ii) Figures indicate percent.

Out of 604271 tribal male only 240669 attain education (20.15 present) and 17.55 percent female among tribal population in study region. Fig.-3.16A and Table-3.17 presents the percent of education in study region. The persons at below primary level ranks highest among male and female due to nutritious food supply at 'Anganwadi' as tribals look towards this as source of food. After primary education particularly drop rate is found increase. At graduate level, it is 1.44 and among female it was less than one percent. Education reduces among female tribal population after primary due to tradition of child marriages. It is found that number of tribal persons imparting technical, non-technical diploma and degree education are very less. This has resulted slow socio-economic development among tribal population and therefore, attempt should be made to encourage tribal for education from primary to higher education in study region.

3.12 Tribal Fertility and Migration

The population change is the change in number of inhabitants of region during the specific time, irrespective of negative or positive change calculated for decadal period. There are three components of population change, namely, fertility, mortality and migration. In order to find out the magnitude of population change in any region it is essential to assess fertility, mortality and migration. This can be measured for considering only fertility and migration. Fertility is occurrence of birth with reference to the reproductive capacity of women during their entire reproductive period. The growth of population depends entirely on human fertility. Fertility can be measured as crude birth rate, general fertility rate, age specific fertility rate, total fertility rate, sex-age adjusted birth rate and child-women ratio. The secondary data regarding birth for one year is not available hence tribal fertility is measured by considering Census age distribution to compute child women ratio.

$$Child\ Woman\ Ratio = \frac{P(0\text{-}4)}{F(15\text{-}44)} \times K$$

Where:

i) P 0-4 = The number of children of both sexes under the age of 5 years.

ii) P 15-44 = The number of women between the ages of 15 and 44 years.

iii) K= 1000

Fig.-3.16 A : Tribal Population Sex and Education, 2001

B : Child Women Ratio, 2001

In present study, child-women ratio is calculated for 1991 and 2001 for tribal population. The study region has experienced 635.09 child-women ratio in 2001 representing children under the age of 5 per 1000 women in 15 to 44 age groups. Fig.-3.16B exhibits high child-women ratio in tribal area. The child-women ratio is more in rural area (647) then urban area (521) whereas high relative fertility is found more in rural than urban. The fertility among tribals reflects to poverty and low quality of life in study region. The migration is another component of population change in terms of geographical mobility. It plays vital role in determining population growth, distribution, structure and further migration with in particular community and therefore, migration aspect was studied by government, economists, sociologists, politicians and planners and demographers (Jhingan, Bhatt and Desai, 2006) for framing policy of the region. Person is considered as migrant by place of birth. (Census of India, 1981). There are direct and indirect measures for estimating migration. In present study, the indirect measures of migration are used for computing net migration by using following formula.

$$M = (p1 - p0) - (B - D)$$

Whereas :

M = is the net migration.

P0 = is the population at the earlier census.

P1= is the population at the later census.

B = is the number of the birth in that area during the inter censal period.

D = is the number of death which occurred in that area the same period.

Here, P1 is population of 2001 and P0 is population of 1991 is taken in to consideration.

Fig.-3.17 exhibits district wise in-migration trend of tribal population in study region. It is clearly identified that nearest districts have large influence on in-migration. In-migration is more from Dhule, Jalgaon and Ahmednagar districts followed by Thane, Aurangabad, Nandurbar and Mumbai districts. It is noticed that there is inverse proportion between in-migrants and distance and vice versa. from Osmanabad, Sindhudurg, and Gadchiroli districts very less in-migrations have found of as these districts lying far away from study region. The percent of immigrant is decreasing as distance increases from study region. During 1991 to 2001, total inmigrant tribals were 41312, out of which 29935 from rural area and 11377 from urban area within Maharashtra State (Appendix-L).

Fig.-3.17 : Flow of Tribal Migratin to Nashik District, 2001

The percent of rural inmigrant is 3 times greater than urban immigrant (Appendices-I). Nashik city and Nashik district (Daily Sakal News Paper, 2012) growing for job opportunities and education become attractions. It is observed that female percent in-migrants have found high after marriage in rural and urban migration.

3.13 Resume

This chapter has assessed the spatio-temporal analysis of tribal characteristics in Nashik district. The density of tribal population was 77 persons per square kilometer in 2001. The high tribal density was found in west part in tribal dominant tahsils in study region. The density of tribal population has decreased from west to east. It is observed that tribals have been living in isolated pockets and have restricted to certain areas. Lorenz curve shows population space relationships in which higher coefficient represents tribal population and it is distributed unevenly in study region. The high concentration was recorded in Surgana tahsils (3.96) followed by Peint (3.88), Trimbakeshwar (3.26) tahsils in 2001. The growth rate of tribal population is declined in study region from 32.70 to 28.27 percent during study period. The highest decadal growth of tribal population was observed in Niphad tahsil (5.98). Population projection has estimated by crude and compound method. The decline in growth of population rate may rich up to 17,20,675 in 2021. According to Census 1981 and 2001, tribal sex ratio in study region was 979 and 976 respectively. The sex ratio is high in rural area than urban. Age-sex pyramids for 1981 and 2001 reveal conical in shape with wide base indicating large number in 5-9 age groups. The proportion of female is less for age group of 15-19 presenting high mortality among female attributing high death rate during delivery period. It is found that literacy of tribal was 16.73 percent in 1981 and 49.3 per cent in 2001. Literacy among tribal female is 8.05 in 1981 and 37.2 in 2001 respectively. The total dependency of tribal population is 87.93. Index of ageing in study region is used to measure the relative number of old persons in tribal population. Index of ageing is low (15.72). There are 41 castes of tribes in study region. Among them, Koli mahadev ranks first accounting 33.04 percent in study region. Only 2,40,669 persons attend education (20.15 percent) and child-women ratio is 635.09 in 2001. Dhule, Jalgaon and Ahmednagar districts have recorded highest in-migrants from tribal followed by Thane, Aurangabad, Nandurbar and Mumbai. Inverse proportion is found in between tribal in-migrants and distance in study region.

CHAPTER- IV

ASSESSMENT OF OCCUPATIONAL STRUCTURE

4.1 General Introduction

Food, shelter and clothes are the basic needs of human being and in order to fulfill these needs human being involves in occupations. 'The economically active population actually takes part in the process of goods and services (Henry, 1971). During ancient time, needs of food were fulfilled by hunting and collecting necessary materials from forest. A few decades ago man started farming followed by industrial activities. Later, started to avail technology and exchange services for earning purpose. Thus, increasing purchasing power of human resulted the growth of industrial and service sectors. Hence, study of occupational structure hold an key position. The socio-economic development of any region depends on number of persons who are economically active with quality and regularity of work. The proportion of economically active population in various occupations indicates the economic profile of various groups of society. The occupational structure of society is a product of variety of intimately related factors. The nature and variety of physical resources base lays down basic foundation for availability of land for agriculture, fishing, forestry and mining (Chandana, 1986). Therefore, study of occupational structure is essential to understand the activities carried by scheduled tribe, its distribution and participation in different economic activities. If more people are engaged in primary activity means that the region is undeveloped, if more people are engaged in secondary activity means that region is process of developing and if more people engaged in tertiary activity means the region is developed.

A study of occupation structure considered the number of persons in the form of employment, unemployment and underemployment in industrial and others activities. Thus, such study provides the base for social and economic development for policy makers and planners. This chapter has attempted to evaluate the occupational structure of tribal population in Nashik district. The data pertaining scheduled tribe population have obtained at tahsil level from District Census Handbook Nashik District for 1981 and 2001. These data were then converted into percent and represented by choropleth method. The relationship between worker and literacy has computed using (Lorenz curve). In addition to this, bar graphs and pie

charts have drawn to representing different characteristics of occupational structure in study region.

4.2 Occupational Structure

The study of occupational structure provides background for formulating future development plans. The occupation means doing a certain type of work. The term 'work' is used in special sense in Census, 1991 as below. The work is defined as a participation in economically productive activity. This participation is physical and mental in nature. However, person doing any economically productive activity is considered as worker. Thus, work involved actual work, effective supervision and direction of work. The distribution of population in different types of occupations is referred to as occupational structure. It can be categorized into two types, namely, main workers and marginal workers. Main workers can be sub-categoried as farmers (Cultivators), agricultural labours, domestic workers and other workers. Main workers are those who work at least six months in one year preceding. The marginal workers are those who work some time but not for the period more than six months in one year preceding.

Table-4.1 : Occupational Structure in Nashik District

Items	Years		Volume of Change
	1981	2001	
Cultivators	42.19	37.69	-4.5
Agricultural Laboures	26.60	24.71	-1.89
Household Industrial Workers	01.93	02.18	0.25
Other Workers	29.28	35.42	6.14
Total	100.0	100.0	-

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : Figures are given in percent.

It is found that there were 68.79 percent main workers (cultivators and agricultural labours) in 1981 (Appendix-M). These have declined to 64.2 percent in 2001. This indicates that during last two decades 6.39 percent main workers have found decrease in agriculture sector. The main workers percent in household industry and other workers have increased during study period. Other workers percent have increased significantly by 6.14 percent (Fig.-4.1) showing that study region is passing through developing stage. The social and economic changes have transformed the occupational structure over the time.

Table-4.2 : Tribal Occupational Structure in Nashik District

Years	Main Workers	Marginal Workers	Non Workers	Total
1981	43.74	8.22	48.03	100.
2001	50.46	4.84	44.71	100
Volume of Change	6.72	-3.38	-3.32	-

Source : District Census Handbook, Nashik District (1981 and 2001)

Note : Figures are given in percent.

Therefore, it is necessary to study the occupational structure and socio-economic conditions of scheduled tribes in study region. In 1981 tribal population in Nashik district was 7,01,647 persons. Among them 43.74 percent were main workers, 8.22 percent marginal workers whereas 48.03 percent accounts non-workers. In 2001, tribal population in study region was 11,94,271 persons. Among them, 50.46 percent were main workers, 4.84 percent marginal workers and non-workers (44.71 percent) (Table-4.2). Fig.-4.2 shows that there is an increase in tribal main workers and has found decrease both in marginal and non-workers during study period. Main workers have significantly increased by 6.72 percent. The percent of marginal workers have reduced rapidly. Non-workers percent have found reduce by -3.32 indicating positive change in occuption among tribal community.

4.3 Tribal Main Workers in Nashik District

It is observed that among tribal population there were 45.90 percent cultivators and 45.77 percent agricultural laboures in 1981 in study region, accounting total 91.67 percent workers in agriculture. Only 8.33 percent workers have involved other than agriculture (Appendix-N and O). In 2001, there were 44.33 percent cultivators and 48.10 percent agricultural laboures together 92.43 percent and only 7.57 percent workers have engaged in other than agricultural activity (Fig.-4.2). During last two decades 1.57 percent cultivators have found decrease and 2.33 percent agricultural labours have increased in agricultural sector. The proportion of other workers is found less and it has decreased by -0.98 percent because of high illiteracy, lack of skills and technical education among tribal population. The household workers are slightly increased by 0.22 percent. The percent of agricultural labours have increased during study period due to small land holding as they work on other's fields as labourrs.

Fig.-4.1 : Occupational Structure at Nashik, 1981

Fig.-4.2 : Main Workers Tribal Population Occupational Structure

Table-4.3 : Tribal Main Workers in Nashik District

Items	Years		Volume of Change
	1981	2001	
Cultivators	45.90	44.33	-1.57
Agricultural Laboures	45.77	48.10	2.33
Household Industrial Workers	00.33	0.55	0.22
Other Workers	08.00	07.02	-0.98
Total	100.0	100.0	-

Source : District Census Handbook, Nashik District for 1981 and 2001.
Note : Figures are given in percent.

4.3.1 Tribal Cultivators in Nashik District

"A person is classified cultivators, if he or she is engaged in cultivation of land owned or held from government or held from private person or institution for payment in cash or other kind of share. The cultivators include supervision or direction of cultivation, plugging, sowing, harvesting and production of cereals and millet crops and other crops such as wheat, paddy, jawar, bajara, rabbi, sugarcane, tobacco, ground-nuts, etc. and pulses, raw jute and kindred fiber crop, cotton, cinchona and other medical plants, fruits and vegetables growing or keeping orchards or groves etc. cultivation does not include the crops i.e. tea, coffee, rubber and coconut." (District Census Handbook, Nashik District, 2001). Table-4.3 presents that 45.90 percent main workers among tribals are engaged as cultivators. Table-4.4 reveals that Surgana tahsil has highest tribal cultivators 74.35 percent whereas, Igatpuri (69.47) and Peint (68.74) tahsils have found more than 60 percent cultivators in study region. 40 to 60 percent cultivators have recorded in Dindori (51.72) and Kalvan (50.69) tahsils. The lowest cultivators of less than 40 percent have found in central and east parts in study region in 1981 (Fig.-4.3). The similar trend is found in 2001. The percent of tribal cultivators has decreased during study period. It is observed that percent of tribal cultivators have declined in west part in tribal dominant tahsils in Surgana, Igatpuri, Peint, Dindori tahsils and drought prone area in Sinnar, Yevla, Nandgaon and Malegaon tahsils. The central part in Kalvan, Baglan, Chandvad and Niphad tahsils have increased tribal cultivators (Fig.-4.3) because these tahsils have fertile soil and irrigation facility on Godavari and Girna rivers. Kalvan tahsil has recorded highest growth of tribal cultivators (Table-4.4). Thus, percent of tribal cultivators have decreased by -1.57 percent in study region.

Fig.-4.3 : Distribution of Culitvators to Main Workers

Table-4.4 : Distribution of Tribal Cultivators in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	39.51	34.65	-4.86	Nandgaon	22.32	20.21	-2.11
Peint	68.74	62.07	-6.67	Yevla	14.04	11.40	-2.64
Dindori	51.72	46.22	-5.50	Niphad	6.08	7.03	0.95
Surgana	74.35	63.01	-11.34	Sinnar	31.93	21.03	-10.90
Kalvan	50.69	61.48	10.79	Igatpuri	69.47	59.40	-10.07
Baglan	30.64	37.04	6.40	Trimbakeshwar	N.A	68.49	N.A.
Malegaon	12.35	11.45	-0.90	Deola	N.A	11.33	N.A.
Chandwad	15.47	18.13	2.66	District Total	45.90	44.33	-1.57

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : (i) Cultivators are given in percent. (ii) N.A. = Data not available

Table-4.4 shows spatial pattern of tribal cultivators from 1981 to 2001 in study region. In 2001, highest percent tribal cultivators were recorded in Surgana (63.01) tahsil followed by Trimbakeshwar (68.49), Peint and Kalvan tahsils (more than 60 percent tribal cultivators) (Fig.-4.3). The lowest percent of cultivators appeared in Niphad tahsil (7.03) fallowed by Malegaon, Deola, Chandvad and Yevala tahsils lying in east part and have less than 20 percent tribal cultivators in study region. The growth of more than 10 percent of tribal cultivators was found in north part in study region during study period in Kalvan tahsil. Chandwad and Niphad tahsils have identified more than 40 percent irrigation, hence tribal cultivators have increased in these tahsils. The decline of tribal cultivators was found in Surgana tahsil (-11.34) and southwest part in study region due to rigid topography, undulated slopes and marginal land holdings.

4.3.2 Tribal Agricultural Laboures in Nashik District

A person who works in another person's land for wage in terms of money or kind of share of production is regarded as agricultural labour. He or she has no risk in cultivation, simply work on another person's land for earning wage. An agricultural labours has no right of less or contract on land on which he or she works." (District Census Handbook, Nashik 2001). Agriculture labours getting their daily wages from the owner of farm. Droughts and rainfall are largely controlling the farming activity and their work. The distribution of tribal labour in study region is uneven. It is found

that proportion of tribal percent of agriculture labours are more in non-tribal area in study region.

Table-4.5 : Distribution of Tribal Agricultural Laboures in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	35.92	47.70	11.78	Nandgaon	65.32	72.35	7.03
Peint	27.91	32.00	4.09	Yevla	78.25	80.69	2.44
Dindori	42.40	47.14	4.74	Niphad	86.77	81.81	-4.96
Surgana	20.86	32.63	11.77	Sinnar	53.73	63.81	10.08
Kalvan	44.58	32.93	-11.65	Igatpuri	21.90	27.39	5.49
Baglan	64.72	58.77	-5.95	Trimbakeshwar	N.A	26.48	N.A
Malegaon	77.36	77.28	-0.08	Deola	N.A	82.39	N.A
Chandwad	70.93	74.30	3.37	District Total	45.77	48.10	2.33

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : (i) Agricultural laborers are given in percent. (ii) N.A. = Data not available

In study region, tribal agricultural laboures accounts 45.77 percent in 1981. The northeast and central parts tahsils in study region have more than 60 percent agricultural laboures. Niphad tahsils has 86.77 percent tribal agricultural laboures followed by Yevala (78.25), Chandvad (70.93), Nandgaon (65.32), Malegaon (77.36) and Baglan (64.72) tahsils. The percent of tribal agricultural laboures have decreased towards west part in study region. In 2001, more than 60 percent tribal agricultural laboures were recorded in north, east and central tahsils. Baglan, Dindori and Nashik have 40 to 60 percent agricultural laboures. These tahsils are located in central and north parts in study region. Less than 40 percent tribal agricultural laboures have observed in west part in study region and percent of cultivators are more as compared to agriculture labours. The percent of tribal labours is found more in east part as unskilled tribal population migrated in search of works as tribals don't have their own land. During study period it was found increasing trend of tribal agricultural labours which is apposite to total population. More than five percent tribal agriculture labourers were found decrease in north part in study region in Kalwan and Baglan tahsils. Surgana, Nashik and Sinnar tahsils have identified increasing tribal agricultural laboures in Nashik (11.78), Surgana (11.77) and Sinnar tahsils (10.08) due to agricultural and Industrial development during study period (Fig.-4.4).

Fig.-4.4 : Distribution of Agricultural Labours to Main Workers

The percent of tribal agricultural labours have decreased towards north part in study region. The proportions of tribal agricultural labourers have been rising during the study period in study region. This has attributed the numbers of wage-earners have increased in primary sector in study region.

4.3.3 Household Industry Workers

The household industry workers means the person which is engaged in small scale and home based industry related to agrarian condition. This includes carpentry, body making, handloom weaving and coloring, pottery manufacturing, bicycle repairing, tailoring etc. It does not include profession such as pleaders, doctors, musicians, dancers, watchmen, astrologers, dhobies, barbers etc. or merely trade or business even if such professions, trade or services are run at home by members of the household. (District Censes Handbook, Nashik District, 2001). The percent of tribal household industry workers to main workers in study region accounts 0.33 percent for 1981 and 0.55 percent (2001). The percent of tribal household industry workers are less in proportion. More than 0.5 percent household industry workers are found in south and east parts in study region. The central and west parts in study region have less percent of house hold industry workers (less than 0.30 percent). Already "Balutedar" performs work as labours at village level resulting very less by household workers during study period in study region by 0.22 percent.

Table-4.6 : Distribution of Tribal Household Industry Workers

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	0.55	0.56	0.01	Nandgaon	0.57	0.75	0.18
Peint	0.14	0.65	0.51	Yevla	0.56	0.53	-0.03
Dindori	0.22	0.59	0.37	Niphad	0.30	0.71	0.41
Surgana	0.42	0.43	0.01	Sinnar	0.56	0.99	0.43
Kalvan	0.15	0.39	0.24	Igatpuri	0.22	0.65	0.43
Baglan	0.42	0.46	0.04	Trimbakeshwar	N.A.	0.43	N.A.
Malegaon	0.51	0.99	0.48	Deola	N.A.	0.36	N.A.
Chandwad	0.33	0.29	-0.04	District Total	0.33	0.55	0.22

Source : District Census Handbook, Nashik District (1981 and 2001)

Note : (i) Workers are given in percent. (ii) N.A. = Data is not available.

Peint tahsil has observed highest growth in tribal household industry workers (0.51 percent) from 1981 to 2001. Chandvad (-0.04) and Yevla (-0.03) lying southeast part have found slight decreasing percent of tribal household industrial workers in

study region (Fig.-4.5). The remaining tahsils have found growth between 0 to 0.5 percent in study region.

4.3.4 Tribal Other Workers in Nashik District

Other workers means the workers who are engaged other than cultivation, agricultural laboures and household industry workers. The persons who involved in factory, trade, commerce, business, transport, construction, government services and teaching are labelled as other workers. (District Censes Handbook, Nashik District, 2001). The highest percent of other workers was recorded in Nashik tahsil (24.02) in 1981 followed by Sinnar (13.77), Chandwad (13.27), Nadgaon (11.80) and Igatpuri (8.41) tahsils as these introduced industries, sugar factories and Maharashtra Industrial Development Corporation (MIDC). The northwest part in study region shows lowest other tribal workers in Peint (13.22 percent) followed by Surgana (4.38), Kalwan (4.21) and Baglan (4.59) tahsils. The high percent of other tribal workers have found in south and east parts due to Sugar factories lying in these areas. The remaining tahsils have identified less industrial development. In 2001, highest other workers have found in Nashik tahsil (17.08) followed by Malegaon, Sinnar, Niphad and Igatpuri tahsils. This area is marching towards urbanization and improve transport facility, hence participation of tribal people has increased. The remaining tahsils have below 10 percent of other tribal workers in study region (Fig.-4.6).

Table-4.7 : Distribution of Tribal Other Workers in Nashik District

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	24.02	17.08	-6.94	Nandgaon	11.80	6.68	-5.12
Peint	3.22	5.28	2.06	Yevla	7.15	7.38	0.23
Dindori	5.67	6.05	0.38	Niphad	6.85	10.45	3.6
Surgana	4.38	3.93	-0.45	Sinnar	13.77	14.17	0.4
Kalvan	4.59	5.21	0.62	Igatpuri	8.41	12.56	4.15
Baglan	4.21	3.72	-0.49	Trimbakeshwar	N.A.	4.59	N.A.
Malegaon	9.78	10.28	0.5	Deola	N.A.	5.93	N.A.
Chandwad	13.27	7.27	-6.00	District Total	8.00	7.01	-0.99

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : (i) Workers are given in percent. (ii) N.A. = Data is not available

The growth between 0 to 5 percent was observed in south, east and north east parts in study region from 1981 to 2001. The highest growth was recorded in Igatpuri tahsil (4.15) followed by Niphad (3.6) and Peint (2.06) tahsils.

Fig.-4.5 : Distribution of Household Industry Workers to Main Workers

Fig.-4.6 : Distribution of Other Workers to Main Workers

The growth between 0 to 5 percent of other workers was found in Igatpuri, Niphad, Malegaon and Sinnar tahsil because of newly functioning Maharashtra Industrial Development Corporation, nodal place of trade, industries and market place. Niphad and Malegaon tahsils have sugar factories, Maharashtra Industrial Development Corporation and agro-based industries hence there is an increase of other workers in study region. Surprisingly, Nashik has recorded negative growth of other workers fallowed by Chandwad and Nandgaon (Fig.-4.6). Nashik being main urban center, head quarter of district, industrial hub, require technical persons and educated workers. Numbers of educated persons are less in tribal community hence, Nashik tahsil has found negative growth of other workers in study region.

4.4 Tribal Marginal Workers Population in Nashik District

A person who worked for some time during the presiding year but not for the major part, have been treated as marginal workers. There is no guaranty of work throughout the year, their jobs are uncertain. The percent of marginal workers to total worker in study region was 8.22 in 1981 and it reduced to 4.84 in 2001 (Table-4.2). The percent of marginal workers have decreased (-3.38 percent) during study period. Fig.-4.7 exhibits the distribution of marginal workers in Nashik district. The percent of marginal workers is found more than 10 in west part in tribal tahsils and has decreased towards east part in study region in 1981. In 2001, percent of marginal workers have reduced in west part and it is slightly increased in Niphad and Malegaon tahsils whereas south part in study region in Igatpuri, Sinnar, Niphad and Yevla tahsils have found increase percent of marginal workers.

Table-4.8: Distribution of Tribal Marginal Workers in Nashik Distsrict

Tahsils	Years		Volume of Change	Tahsils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	8.95	5.69	-3.26	Nandgaon	2.25	2.04	-0.21
Peint	11.78	9.35	-2.43	Yevla	0.83	1.78	0.95
Dindori	13.29	9.44	-3.85	Niphad	2.13	6.86	4.73
Surgana	11.62	15.77	4.16	Sinnar	1.30	3.58	2.29
Kalvan	20.85	5.61	-15.24	Igatpuri	11.87	12.17	0.30
Baglan	9.34	7.13	-2.21	Trimbakeshwar	N.A.	9.72	N.A.
Malegaon	1.98	6.82	4.85	Deola	N.A.	1.24	N.A.
Chandwad	3.81	2.78	-1.03	District Total	100	100	-

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : (i) Workers are given in percent. (ii) N.A. = Data is not available.

Fig.-4.7 : Distribution of Marginal Workers

Surgana and Malegaon tahsils show incline trend of marginal workers. The remaining tahsils of study region have recorded negative growth of marginal workers. This indicates that percent of marginal workers have reduced and main workers have increased in study region during study period.

4.5 Tribal Non-workers in Nashik District

A person who had not worked at all during the last year was considered as non-worker. Person engaged in household duties, students, dependent, retired persons, renters, beggars are grouped as non-workers. Mostly children's and old age population belong in this category who is not physically and mentally feat to perform the work. (District Censes Handbook, Nashik District, 2001). The percent of non-workers to total tribal worker was 48.03 in 1981 in study region and it has reduced to 44.71 in 2001 (Table-4.2). The percent of tribal non-workers decreased by -3.32 percent during study period.

Table- 4.9 : Distribution of Tribal Non-Workers in Nashik District

Tahsils	Years		Volume of Change	Tahasils	Years		Volume of Change
	1981	2001			1981	2001	
Nashik	13.62	5.65	-7.97	Nandgaon	2.63	2.06	-0.57
Peint	12.30	8.15	-4.15	Yevla	1.41	1.76	0.35
Dindori	11.10	12.77	1.67	Niphad	5.81	7.27	1.46
Surgana	10.11	12.53	2.42	Sinnar	2.78	3.23	0.45
Kalvan	11.10	9.16	-1.94	Igatpuri	10.26	8.00	-2.26
Baglan	10.27	9.03	-1.23	Trimbakeshwar	N.A.	9.54	N.A.
Malegaon	6.19	5.87	-0.32	Deola	N.A.	1.86	N.A.
Chandwad	2.43	3.12	0.69	District Total	100.00	100.00	-

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : (i) Workers are given in percent. (ii) N.A. = Data is not available

The reduction of non-working tribal population is increasing economic activity and growth of per capita income and improves the standard of living. Fig.-4.8 exhibits that more than 10 percent of tribal non-workers were found in west tahsils which are economically backward in 1981. The percent of non-workers have reduced towards east in study region. In 2001, Surgana and Dindori tahsils in northwest parts have high percent of tribal non-workers and it has reduced towards east in study region as east part provides better job opportunities to tribal as compared to west due to better agriculture, industries, trade, transport etc.

Fig.-4.8 : Distribution of Non-workers

During study period, central part shows increasing percent of non-workers except Nashik tahsil where it decreased (-7.97 percent) due to industrial, development along with trade and transport, agriculture etc. In north and southeast parts, the percent of tribal non-workers have decreased in study region. The decrease in percent of non workers indicates the beginning of economic development among tribal community.

4.6 Sex-wise Distribution of Workers in Tribal Population

The occupation is considered as the base to make performance in activities. In order to survival of any organism requires food which produces from agricultural practice as a occupations. However, involvement in occupation varies in from community to community and sex to sex in the society. In tribal area opportunity for work is not much available throughout the year. Whenever tribal people get work involve themselves without any delay. Due to lack of family planning devices, tribal cannot abide frequent conception and child birth makes an unequal share in economic activities. From this point of view, it is essential to assess sex wise participation of scheduled tribe population and their involvement in different economic activities.

4.6.1 Sex-wise Distribution of Tribal Main Workers

It is noticed from Fig.-4.9 that percent of male main workers are higher than female main tribal workers of population in study region from 1981 to 2001. It is noticed that there is a less female participation as main worker in Nashik tahsil (36.58) and as high as shared by female in Niphad tahsil accounting 47.73 percent in 1981. The female main workers percent have increased in all tahsils except Malegaon, Niphad and Sinnar tahsils during study period. The participation of female main workers have increased by 3.76 percent and reached to 46.12 percent in 2001 (Table-4.10) This shows progress and involvement of females as main labourers in study region. Fig.-4.9 exhibits the percent female main worker percent in study region for 1981 and 2001. The growth of female workers in 2001 is more as compared to 1981. Kalvan tahsil (10.27) has recorded highest growth as female main workers fallowed by Nandgaon (7.23), Nashik (5.68) and Chandwad (5.28). This indicates the increase involvement of tribal woman in economic activities as main worker than male to get work for major part of preceding year resulting rising of per capita income of tribal community in study region.

Fig.-4.9 : Tribal Main Workers

Table-4.10: Sex-wise Distribution of Tribal Main Workers

Tahsils	1981 Years		2001 Years		Volume of Change	
	Male	Female	Male	Female	Male	Female
Nashik	63.42	36.58	57.74	42.26	-5.68	5.68
Peint	55.44	44.56	52.39	47.61	-3.05	3.05
Dindori	57.64	42.36	53.53	46.47	-4.11	4.11
Surgana	56.48	43.52	53.70	46.30	-2.78	2.78
Kalvan	62.00	38.00	51.73	48.27	-10.27	10.27
Baglan	56.02	43.98	52.69	47.31	-3.33	3.33
Malegaon	54.06	45.94	57.06	42.94	3	-3
Chandwad	58.10	41.90	52.82	47.18	-5.28	5.28
Nandgaon	59.36	40.64	52.13	47.87	-7.23	7.23
Yevla	56.10	43.90	52.87	47.13	-3.23	3.23
Niphad	52.27	47.73	53.81	46.19	1.54	-1.54
Sinnar	55.30	44.70	56.63	43.37	1.33	-1.33
Igatpuri	60.61	39.39	57.48	42.52	-3.13	3.13
Trimbakeshwar	N.A.	N.A.	54.25	45.75	N.A.	N.A.
Deola	N.A.	N.A.	53.60	46.40	N.A.	N.A.
District total	57.64	42.36	53.88	46.12	-3.76	3.76

Source : District Census Handbook, Nashik District (1981 and 2001)

Note : (i) N.A. = Data is not available (ii) Calculated by Researcher

(iii) Workers are given in percent to tahsil

4.6.2 Sex-wise Distribution of Marginal Workers

The percent of tribal marginal workers have decreased in study region. Table-4.11 presents that male marginal workers are less as compared to female in study region for 1981 and 2001. Female workers accounts 89.13 percent in 1981. It is nine times greater than males in 1981. This ratio has reduced in 2001. The study region has showed negative growth of female marginal workers in all tahsils. It is found -25.23 percent change in female marginal worker as a result male percent has increased in all tahsils during study period and has found decreasing female marginal workers (Fig.-4.10). Kalvan tahsil has reported highest decrease in female marginal workers (-29.43 percent). It is noticed that though there is an increase of male marginal workers due to decreasing female workers. It represents the crud activity rate is positive in study region.

Fig.-4.10 : Tribal Marginal Workers

Table-4.11: Sex-wise Distribution of Tribal Marginal Workers in Nashik District

Tahsils	1981 Years		2001 Years		Volume of Change	
	Male	Female	Male	Female	Male	Female
Nashik	17.77	82.23	39.50	60.50	21.73	-21.73
Peint	11.36	88.64	38.35	61.65	26.99	-26.99
Dindori	6.14	93.86	35.40	64.60	29.26	-29.26
Surgana	6.77	93.23	34.77	65.23	28	-28
Kalvan	7.25	92.75	36.68	63.32	29.43	-29.43
Baglan	14.45	85.55	32.93	67.07	18.48	-18.48
Malegaon	24.74	75.26	34.77	65.23	10.03	-10.03
Chandwad	7.73	92.27	33.41	66.59	25.68	-25.68
Nandgaon	12.96	87.04	40.87	59.13	27.91	-27.91
Yevla	15.25	84.75	37.86	62.14	22.61	-22.61
Niphad	17.96	82.04	42.27	57.73	24.31	-24.31
Sinnar	16.59	83.41	37.24	62.76	20.65	-20.65
Igatpuri	14.13	85.87	33.35	66.65	19.22	-19.22
Trimbakeshwar	N.A.	N.A.	37.59	62.41	N.A.	N.A.
Deola	N.A.	N.A.	32.14	67.86	N.A.	N.A.
District Total	10.87	89.13	36.22	63.78	25.35	-25.35

Source : District Census Handbook, Nashik District (1981 and 2001)

Note : (i) Workers are given in percent. (ii) N.A.= Data is not available
(iii) Calculated by researcher

4.6.3 Sex-wise Distribution of Tribal Non-workers

Non-workers mean that the persons is not working at all during the year and is considered as inactive population. If proportion of such persons is more, then it creates burden on remaining active population and on resources. Person engaged in household duties, students, dependent, retired persons, renters, beggars are some categories grouped as non-workers. (District Censes Handbook, Nashik District, 2001). The percent of non-workers to total tribal workers was 48.03 in 1981 and has reduced to 44.71 in 2001 (Table-4.2). The percent of non-workers has found decline by -3.32 percent during study period indicating positive growth of tribals in study region. Fig.-4.11 exhibits the share of female tribal non-worker is more as compared to male in 1981. But is was noticed that after twenty years it increased to 50:50 percent in 2001 showing nearly equal involvement of tribal women in study region.

Fig.-4.11 : Tribal Non-workers

Table-4.12: Sex-wise Distribution of Tribal Non-workers in Nashik District

Tahsils	1981 Years		2001 Years		Volume of Change	
	Male	Female	Male	Female	Male	Female
Nashik	43.46	56.54	49.17	50.83	5.71	-5.71
Peint	47.73	52.27	50.27	49.73	2.54	-2.54
Dindori	47.83	52.17	50.00	50.00	2.17	-2.17
Surgana	48.17	51.83	50.35	49.65	2.18	-2.18
Kalvan	47.62	52.38	49.36	50.64	1.74	-1.74
Baglan	47.50	52.50	51.24	48.76	3.74	-3.74
Malegaon	46.41	53.59	49.12	50.88	2.71	-2.71
Chandwad	47.04	52.96	50.44	49.56	3.4	-3.4
Nandgaon	44.64	55.36	52.13	47.87	7.49	-7.49
Yevla	46.02	53.98	50.14	49.86	4.12	-4.12
Niphad	48.97	51.03	48.91	51.09	-0.06	0.06
Sinnar	47.36	52.64	48.30	51.70	0.94	-0.94
Igatpuri	45.37	54.63	50.05	49.95	4.68	-4.68
Trimbakeshwar	N.A.	N.A.	49.84	50.16	N.A.	N.A.
Deola	N.A.	N.A.	50.40	49.60	N.A.	N.A.
District Total	46.78	53.22	49.94	50.06	3.16	-3.16

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : (i) Workers are given in percent. (ii) N.A.= Data is not available

(iii) Calculated by researcher.

4.7 Economic Activity Rate Among Tribal Population

Population which participates or attempts to participate in production of economic goods and services is referred as economically active population. Crude activity rate is the ratio between economically active population and total population. Here total tribal workers are considered as economically active population and crude activity rate is measured for total, male and female tribals by using following formulas.

$$\text{1) Crude Activity Rate} = \frac{\text{Economically Active Population}}{\text{Total Population}} \text{ X 100}$$

The higher crude rate indicates higher level of income per head that be achieved under given condition of productivity and extent of employment of workers. Total crude activity rate of tribal population was 55.29 in 1981 and it has reduced to 51.96 in 2001.

Table-4.13: Crude Activity Rate of Tribal in Nashik District

Sr. No.	Particulars	1981			2001		
		Total	Male	Female	Total	Male	Female
1	Tribal Population	701647	354503	347144	1194271	604271	590000
2	Economically Active Tribal Population	387948	207744	180204	620641	322686	297955
3	Crude Activity Rate	55.29	58.60	51.91	51.96	53.40	50.50

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : Calculated by Researcher

The crude activity rate for male is high than female having less difference between them (Fig.-4.12). The crude activity rate for male was 58.60 in 1981 it has observed 51.96 in 2001. It was 51.91 for female and has reduced to 50.50. In this regards, crude activity rate is reducing in both among male and female tribal workers and therefore level of per capita income of tribal population is low.

2) General Activity Rate

$$= \frac{\text{Economically Active Population}}{\text{Population Aged (15-59)}} \text{ X } 100$$

Table-4.14: General Activity Rate of Tribal in Nashik District

Sr. No	Particulars	1981			2001		
		Total	Male	Female	Total	Male	Female
1	Tribal Population aged (15-59)	-	-	-	635458	320775	314683
2	Economically Active Tribal Population	387948	207744	180204	620641	322686	297955
3	General Activity Rate	-	-	-	97.66	100.59	94.68

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : (i) Calculated by Researcher

The economic characteristics are largely affected by its age composition. In prompt study general activity rate has computed to study the ratio of persons engaged in gainful and productive economic activity at working age of 15-59 years. General activity rate of tribal population is 97.66 percent whereas 100.59 percent and 94.68 percent are for males and females respectively in 2001. It was found that the general activity rate is very high among tribals because of poverty.

Fig.-4.12 : Crude Activity Rate Among Tribal

Even child's below fifteen years are also engaged into work and therefore percent of working population has remarkably increased and thus, child labour problem has found in study region.

4.8 Tribal Workers and Literacy

The occupational structure of any region or caste is closely associated with literacy rate. Here an attempt has made to find out relationship between workers and literacy by using correlation co-efficient. The variables namely, main workers, marginal workers and literacy of tribal people have considered for computing relation between workers and literacy. Fig.-4.13 shows positive correlation of workers and literacy. The participation of workers has increased with increasing literacy. In 1981, labours and literacy shows positive corelation (R=0.23) and (R=0.16) relationship between main and marginal workers respectively. In 2001 relationship between labours and literacy is found moderate positive for main workers (R=0.46) and strongly positive for marginal workers accounting (R=0.93) showing positive change in literacy and workers too (Fig.-4.13). This indicates that literacy among tribals numbers of workers and quality of work are significantly improved in study region.

4.9 Resume

This chapter has assessed the occupational structure of scheduled tribes in study region. It has noticed that majority of tribals are residing in rural area. Among them, main workers cultivators accounts 44.33 percent, agriculture labours (45.77 percent) and remaining are distributed in other activities. The work participation rate in tribal is high and they are mainly involved in collecting timber, fruits, honey, flower etc. from the forest like food gathering, hunting, fishing. Agriculture is the main occupations presently. As far as industrial field is concern tribal participation has less percent due to illiteracy and lacking skills. The self-employment venture among tribals in service sector is poor. The seasonal unemployment is another problem is faced by tribal families in study region. The percent of agricultural labourers were increased (2.33) during study period because of small land holding, tribal use to work on fields as labours on another field. 92.43 percent main workers are involved in agricultural sector in 2001. The percent of cultivators and other workers have significantly decreased among main workers. The percent of marginal and non-workers have found reduced during study period among tribal population.

Fig.-4.13 : Correlation between Workers and Literacy

It has observed that there is a large variations in sexwise distribution of tribal in occupational structure. In case of main workers, involvement of female is less than male workers. The marginal workers of male accounts 10.87 percent and it has slightly increased in 2001. The percent of tribal non-workers has reduced (-3.32 percent) during study period. The crude activity rate has reduced for both male and female tribal workers resulting low level of per capita income. General activity rate is very high among tribals because of poor condition. The relationship between tribal labours and literacy is positive in study region. In 2001, labours has moderate relationship between main workers with literacy (0.46) and strongly positive identified between main labours (0.93). Here it is necessary to empower the tribal with skills, working capital in establishing suitable marketing mechanism for their products. Involvement of tribals in technical and professional education is essential to tribal population for their development in study region.

CHAPTER-V

CASE STUDIES OF SAMPLE VILLAGES

5.1 General Introduction

The spatial patterns of population characteristics and occupational structure of tribals in Nashik district have been extensively studied in earlier chapters and have brought out variations and their reasons. In order to assess population and socio-economic characteristics requires in depth study of villages in study region. A study of every village under study region is practically difficult and time consuming. Hence, sample survey has carried out in study region considering geographical location, physiography, demographic characteristics and socio-economic conditions of tribals.

5.2 Area Under Study

Nashik is a tribal dominated district in Maharashtra state covering 15530 square kilometres area. There are 1929 villages and 18 towns (Census, 2011). With considering vast extent of study region and huge number of villages, five sample villages have been selected for case study and primary data have obtained of concerned villages and then there data have compiled and analysed. Tribal household is considered as unit of study. Villages are, namely, Kotambi, Nanduri, Ramshej, Khambale and Behed in study region.

5.3 Data Collection and Organization

There are various sources and steps involved in the collection and organization of primary data. A survey of 100 households from each village was conducted by giving questionnaires and the questions have asked on households, religion, migration, health, education, occupational characteristics, income sources, their expectations and problems. Thus, information obtained through interviews by filling up questionnaires were, later it was noted on data entry sheets and then it was interpreted integrated villagewise (Appendix-P and Q). The secondary data regarding population characteristics have gathered from District Census Handbook (2001) and landuse types, irrigation and crops data have collected from Village Revenue Record and Grampanchayat office of concerned sample village.

5.4 Choice of Sampling

For sampling the entire district was divided into five groups on the basis of tribal population distribution and from each group one village was selected (Fig.-5.1 and Table-5.1). The sample villages were selected by purposive sampling method. These villages are, namely, Kotambi, Nanduri, Ramshej, Khambale and Behed. To identify location and village boundaries both topographical and cadastral maps have used. The location of these villages are shown in Fig.-5.2.

Table-5.1: Selection of Sample Villages.

Sr. No.	Sample Villages and Tahsils	Tribal Percent Groups	Village Area (Hectares)	Tribal Population Percent	Total Households	Households Survayed
1	Kotambi (Peint)	I – (>80)	510	99	197	100
2	Nanduri (Kalwan)	II- (60-80)	665	79	251	100
2	Ramshej (Dindori)	III- (40-60)	2571	50	363	100
4	Khambale (Igatpuri)	IV- 20-40	811	56	512	100
5	Behed (Niphad)	V- <20	419	57	312	100

Source : District Census Handbook Nashik, 2001.

Note : (i) Figures in brackets shows name of tahsils of concerned sample village.

5.5 Kotambi Village

This village lies in western ghat in Peint tahsil of Nashik district. It is situated at 20°14’ north latitude and 74°32’ east longitude and 6 kilometres away from Peint and 52 kilometres from Nashik. Kotambi is well connected by mettle road and state highway-22 and is confined by Ambapur village in north, Borawath in east, Peint in west and Hanumant pada in south (Fig.-5.3). The village occupies 510 hectares land population of 973 consisting 197 households. The density of population is 191 persons per square kilometre. The proportion of scheduled tribe accounts 99 percent in Kotambi (Census, 2001).

5.5.1 Physical Characteristics

Kotambi is situated in Sahyadri range at the attitude of 521 metres above mean sea level. This village consists of three ‘Padas’ namely, Devi pada, Barda pada and Shani pada. The slope of village is towards south and southwest. The north part is hilly with forest cover. Shrimant river flows from southeast direction (Fig.-5.3) which is tributary of Damanganga river. The village receives rainfall between 2000-3500 millimetres mostly from southwest monsoon during June to October. The village experiences winter season from November to February.

Fig.-5.1 : Tribal Population Percent 2001

Fig.-5.2 : Location of Sample

Fig.-5.3 : Kotambi Village

Summer season consists of three months from March to May. The soil is medium with red brown, reddish and black in colour and found patchy in nature. The forest covers 32 percent area and occurs mostly on hill slopes in north part in this village.

5.5.2 Demographic Characteristics

99 percent Kotambi village is tribal. The total population of this villages is 973 among them 963 persons belong to scheduled tribes, 2001. There are 197 households in Kotambi. 51 percent households are surveyed during field work. Table-5.2 reveals that there are 593 of population (313 males and 280 females) and sex ratio is 895 females per 1000 male. Fig-5.4A exhibits that male percent accounts 52.78 and females (47.22 percent) showing imbalance in male-female numbers. The sex ratio is 895.

Table-5.2 : Population Characteristics in Kotambi Village

Particulars	Person	Particulars	Person / Figure
Male Population	313	Less than 7 Age Population	66
Female Population	280	0-14 Age Population	165
Persons Population	593	15-60 Age Population	403
Married Population	331	More than 60 Age Population	25
Unmarried Population	262	Literacy in percent	67.27
Literate Population	340	Crude Activity Rate	67.95
Illiterate Population	187	Crude Birth Rate	2.86
Population Density	191	Crude Death Rate	0.84
Sex-ratio	895		

Source : Fieldwork, 2013.

It was found that 68 percent population in Kotambi belongs to economically active age group. The percent of child age group is 28 and old age group are less 4. The crude activity rate is 67.95 percent. An age-sex structure in this village reveals triangular shape of pyramid and this village is in developing stage indicating low fertility. The number of persons in age group above 60 accounts 25 percent. This village has poor life expectancy among tribals. The married persons are found high percent (55.82) as compared to unmarried (44.18). Literacy is 65.51 percent. The crude birth rate and crude death rate are 2.86 and 0.84 respectively (Table-5.2). Hindu accounts 99.16 percent and Boudha (0.84 percent). Kokana and Mahadev Koli are the major tribes accounting 57.67 and 41.48 percent population respectively (Fig.-5.4B).

Fig.-5.4 A : Population Distribution at Kotambi

B : Caste-wise Population Distribution at Kotambi

Kotambi receives high rainfall hence settlement has slanting roof mostly of 'Kouls', 'Tins' and waste materials is getting from agriculture (Photo-11). The clustered settlements of there some castas found living together. The kaccha houses are accounts 43 percent, semi pakka (29 percent) and pakka (28 percent) (Fig-5.5A) and their houses are mostly built up by using stones, mud and bricks. Both kaccha and semi pakka houses together accounts 72 percent indicating low standard of living. The every small houses were found having only consists of 2 rooms. 61 houses have 2 rooms or less (Fig.-5.5B). 38 houses have built up area of 200 sq. ft. (Fig.-5.6A). Only 35 percent houses have found separate kitchen. The tribal women look after kitchen and drinking water. 90 households have used wood as fuel for cooking and 16 households consuming LPG and other fuels (Fig.-5.6B). It was noticed that despite small sizes of houses village gets electricity. One house has absence of electricity. It was observed that the electrical low shedding is common for 10 hours every day time. 58 households possess phones and televisions whereas radio, music system, refrigerator, washing machine, cooking gas, sewing machine, two wheeler, vehicles were completely absence (Fig.-5.7A). Tribals live in low standard of living, poverty and illiteracy despite tribals want to come into main stream of development by getting quick information from electronic media by mobile phones and televisions.

5.5.3 Landuse Characteristics

Table-5.3 exhibits landuse pattern in Kotambi. It is observed that there is absence of irrigated land and cultivable west in Kotambi. As this village is situated in west ghat, area under forest covers 32 percent and 60 percent area is under cultivated land (Table-5.3). 8 percent area from this village is not available for cultivation.

Table-5.3 : Landuse Pattern in Kotambi Village, 2011.

Sr. No.	Landuse Category	Area in Percent	Sr. No.	Landuse Category	Area in Percent
1	Forest area	32	4	Area not available for cultivation	8
2	Cultivated Land	60	5	Irrigated	Nil
3	Cultivable waste	0		Total area	100

Source : District Village Revenue Record, Kotambi Village, 2013.

The area under forest area is found in north part on hill slopes and is unsuitable for cultivation. Shirmant river is non-perennial river flowing through this village (Fig.-5.3).

Fig.-5.5 A : House Types at Kotambi

B : Households and Number of Rooms at Kotambi

Fig.-5.6 A : Households and Area at Kotambi

B : Fuel Use for Cooking at Kotambi

Fig.-5.7 A : Household Articals

B : Landholding and Households

5.5.4 Occupational Characteristics

Peoples of Kotambi are involved in primary activity. Among them 82 percent are found engaged in agriculture, 14 percent work as labour, 3 percent in service sector and one percent in own business. 55 percent households have marginal landholding accounting less than 3 acres (Fig.-5.7B) whereas 15 percent households are landless. 30 percent households have land between 3 to 10 acres land in this village. (Table-5.4)

Table-5.4 : Landholding in Kotambi Village

Landsize (Acres)	Households	Landsize (Acres)	Households
<1	18	5 to 10	7
1 to 3	37	>10	0
3 to5	23	None	15

Source : Fieldwork, 2013.

It was found that due to marginal land holding, income is from agriculture is less among tribal. 22 percent households are seasonal workers hence tribals have been giving preference to work as labourers. Tribal people practices primitive type of agriculture. It was observed that tribal people use chemical fertilizers rather than pesticides. The net annual agriculture income is less than 1 lakh per year account from 80 percent households. It was found that tribal people has marginal land holding, lack of irrigation and capital and technology. Tribals of this village cultivates traditional low price crops, namely, rice, nagali, varai, toor, kulith and khurasani, hence their annual income is low.

It is found that 70 percent households are satisfied in their present occupation whereas 30 percent have shown dissatisfaction for their present occupation as failing to fulfil the needs like of food, cloth and shelter. Fig.-5.8A presents that maximum 84 families have annual income of less than 1 lakh. There is skiving family whose annual income exceeds 5 lakh rupees. The village has one primary and one secondary school for a distance of 3 kilometres. For getting higher education villagers go to Peint tahsil headquarter for 6 kilometres. Out of 593 people excluding the children below 7 year tribals accounts 64.50 percent literacy. Whereas it was 48.50 in 2001. It is essential to motivate tribals by telling significance of education, providing educational materials lunch and food during education. There are lack of awareness regarding health and family welfare programmes among tribals and unavailability of primary health centre and private clinic.

Fig.-5.8 A : Annual Income and Households

B : Use of Conceptional Control

The medicinal plants are used as first aid medicines by 25 percent households. Still 63 percent households prefer home delivery in stead of maternity hospital. Hence, infant mortality and female mortality rate are high in the age group 14 to 45 and life expectancy is less as among them age group of above 60 age. There are 51 percent household are unaware about HIV scheme. An attempt was made to find out awareness about family planning among tribalts about using conception control methods are lacking. It was found that 81 families avoid conception control methods (Fig.-5.8B) and only 19 households use condom, pills and female sterilization resulting into high fertility among tribals. Hand pumps are main drinking water source for villagers. Tribals are found unaware about purification for drinking water. 22 families are found use drink water without purification and 75 families simply strain it by cloth. The scarcity of drinking water is acute during summer.

The alcohol addiction is common among tribals. 71 percent households are found addicted to chewing tobacco, smoking and drinking alcohol. Among them 62 percent family heads are habitual to chewing tobacco and smoking (13 percent) and account 10 percent drinking alcohol (Fig.-5.9). This addiction has affected both health and tribal families life. The poverty, lack of planning and saving are common among the tribals. It was observed that 80 percent households are satisfied with their socio-economic conditions. 5 families have in-migrant in Kotambi and out migration accounts 21 percent within Maharashtra state for getting employment.

5.5.5 Problems of Village

During field visit it was found that agriculture is the main occupation for 82 percent households though the land-holding is marginal (less than 3 acres) hence there is low income. In nutshell, marginal land-holding, less productivity and unemployment are the problems of this village. Water scarcity during summer and irregular electric supply are other problems. Unemployment, particularly in summer season is acute. Illiteracy and lack of awareness regarding education and health are main hurdle in the life of tribals. This has resulted high fertility and low life expectancy. Medical facilities are inadequate this creating health and hygienic problems. The lack of internal roads, underground drainage, toilet facility and fuel are common problems. Addictions to bad habits pose serious threat to the health among tribals in Kotambi village.

Fig.-5.9 : Addiction in Tribal

5.6 Nanduri Village

Nanduri is located in Kalwan tahsil of Nashik District. It's latitudinal and longitudinal cordinates are 20º25' north and 73º54' east respectively and altitude is 788 meters from mean sea level. This village is situated at foot of Saptshrung range 59 kilometres away from district headquarter. Nashik towards north and 15 kilometres from Kalwan. The village is connected by mettle road of State Highway-17 and is confined by Chikhalipada on northeast, Saptshrungigad on south, Deregaon in west and Mohandari on northwest (Fig.-5.10). This village covers 665 hectars area and has 1336 population in 2001. The density is 201 persons per square kilometre (Table-5.5). The scheduled tribe constitutes 79 percent in this village.

5.6.1 Physical Characteristics

This village lies near the foothills of Saptshrung range in Sahyadri sloping towards northeast. North and south parts of this village is bounded by hilly ranges. Behadari is the seasonal stream flowing in south direction. This village receives moderate rainfall between 1000-1500 millimetres from monsoon winds. The winter season extends from November to February. The summer season lasts for three months from March to May. The soils are brown in colour. Black soil is found in certain patches and is found rigid, immature and unfertile on hill slopes in south. The forest covers 30 percent on hill slopes.

5.6.2 Demographic Characteristics

Nanduri village represents group of tribal population 60-80 percent in Dindori tahsil. There were 251 households in Nanduri. The village accounts 77.84 percent tribal population (Total population 1336 in 2001). 40 percent households covering 608 population having nuclear family structure. Table-5.5 exhibits that among them 305 are males and 303 females. The sex ratio is 994. Fig.-5.11A reveals that 50.16 percent of males and 49.84 females showing equal ratio. Working age group between 14-60 is more (67.92) and child (29.44) and old age (2.63) less population has resulted high crude activity rate (67.92) in this village (Table-5.5). An age-sex structure reveals triangular shape of pyramid representing developing stage. The numbers of persons above 60 year are less 2.63 indicates less life expectancy among tribals. The share of married persons accounts 52.46 percent and it is more in numbers than unmarried persons (47.53percent). Literacy is 69.27 percent.

Fig.-5.10 : Nanduri Village

Fig.-5.11 A : Population Distribution at Nanduri

B : Religion Composition at Nanduri

Table-5.5 : Population Characteristics in Nanduri Village

Particulars	Person/ Percent	Particulars	Person/ Percent
Male Population	305	Less than 7 Age Population	66
Female Population	303	0-14 Age Population	179
Persons Population	608	15-60 Age Population	413
Married Population	319	More than 60 Age Population	16
Unmarried Population	289	Literacy in percent	69.27
Literate Population	340	Crude Activity Rate	67.92
Illiterate Population	169	Crude Birth Rate	1.80
Population Density	201	Crude Death Rate	0.98
Sex-ratio	994		

Source : Fieldwork, 2013.

The crude birth rate and crude death rates are 1.8 and 0.98 respectively in this village. This village has 71 percent scheduled tribe households (435 populations) (Fig.-5.11B). Among total tribal Kokana tribes accounts (54.02) followed by Bhil (39.54), Mahadev Koli (5.52) and Warli (0.92) (Fig.-5.12A). The female percent are more than males and has female high sex-ratio among the Kokana tribes. Nanduri village receives moderate rainfall between 1000 to 1500mm. The settlement has slanting roofs and clustered. Kaccha, semi pakka and Pakka types of houses are observed at Nanduri (Fig.-5.12B). Majority houses are made up of using, stones, mud bricks and cements. The kaccha and semi pakka houses have 75 percent representing low standard living.

Table- 5.6 : Number of Rooms and Sizes of Households at Nanduri

Number of Rooms	Households	Area of Households	Households
1	28	<100	18
2	44	100-200	31
3	16	200-300	19
4	9	300-400	16
>5	3	>400	16

Source : Fieldwork, 2013.

Table-5.6 exhibits sizes of households wherein houses are small of 2 rooms. 72 percent households have found less than 2 rooms. 31 houses have identified upto 200 square feet. 60 percent houses are lacking separate kitchen and 75 households used wood as fuel for cooking and only 23 households are consuming LPG and other fuels (Fig.-5.13A).

Fig.-5.12 A : Tribal Population Distribution at Nanduri

B : House Types at Nanduri

Fig.-5.13 A : Fuel Use for Cooking at Nanduri

B : Household Articals at Nanduri

It is noteworthy that small house size holders have their own houses with electricity supply. 4 households have absence of electricity. Power shortage is a common problem (upto 12 hours) during day time. 63 households possess televisions and phones as vital means of communication and lacking articles namely, radio, music system, refrigerator, washing machine, cooking gas, sewing machine, two wheelers, vehicles (Fig.-5.13B). There are 22 households have found without any articles in their houses and lives in poor condition. A high economic poverty was observed in this village even then tribal people started using mobile phones and televisions indicating important in information and knowledge.

5.6.3 Landuse Characteristics

Table-5.7 represents landuse pattern in Nanduri village. It is identified that irrigated area is 15 percent and forest covers 30 percent in Saptshrungi range area and whereas 44 percent area is under cultivated land in this village (Table- 5.7).

Table-5.7 : Landuse Pattern in Nanduri Village

Sr. No.	Landuse Categories	Area in Percent	Sr. No.	Landuse Categories	Area in Percent
1	Forest area	30	4	Cultivable waste	8
2	Irrigated	15	5	Area not available for cultivation	5
3	Cultivated land	44		Total area	100

Source : : Village Revenue Reports, Nanduri Village, 2013.

3 percent area from this village is not available for cultivation and 8 percent is cultivable waste. The areas under forest are mostly found in south part along hill slopes and are not suitable for cultivation. There is non-perennial tank in south (Fig.-5.10). There is absence of perpetual source of water hence, area under irrigation is less (15 percent).

5.6.4 Occupational and other Characteristics

The tribal people of this village are engaged in primary activities. 63 percent are engaged in agriculture, 31 percent are labourers, 4 percent are in service sector and 2 percent possess their own businesses. 70 percent households have marginal agriculture fields accounting less than 3 acres (Fig.-5.14A). It was found households possess 3 to 10 acres of land and landless families are 15 percent (Table-5.8). The income is only from agriculture and is low in this village. Only 31 percent households have preferred working as labourers.

Fig.-5.14 A : Landholding and Households at Nanduri

B : Income and Households at Nanduri

Tribal people practice traditional type of agriculture. 46 percent households have irrigation facility by well, canal and tank. It is observed that tribal people used chemical fertilizers and ignoring pesticides.

Table-5.8: Landholding in Nanduri Village

Landsize in Acres	Households	Landsize in Acres	Households
<1	43	5 to 10	5
1 to 3	27	>10	0
3 to5	10	None	15

Source : Fieldwork, 2013.

The net annual agriculture income is less than 1 lakh per year for 76 percent households (Fig.-5.14B). It was founded that the tribal people have less aware about land holding, irrigation, and technology. Tribals cultivate paddy, onion, udid, nagali, corn, and soyabean hence, generating low annual income. It is noted that 73 percent households are satisfied in their present occupation but 27 percent are disappointed because of less income from occupation. Total annual incomes of 75 households are less than 1 lakh. Only one family is found annual income of above ten lakh. Poverty is a serious problem among the tribes in this village. Nanduri villagers have to go for primary and secondary education within 3 kilometres distance. For further, education tribals have to go to at Kalvan, Vani and Dindori places. The tribals of this village account 69.27 percent literacy indicating that tribals are aware of further education. Nanduri village has primary health centre and private clinic. The medicinal plants are used as first aid medicines by 44 percent households and 90 percent prefers maternity in hospital for delivery.

There is a general lack of awareness about HIV (52 percent family heads). An effort is being made for family controlled by using conception control methods. Even then 49 families are not using conception control method (Fig.-5.15A). 51 families have used condom, pills and female sterilization causes high fertility among tribals. Hand pumps are the main source of drinking water for this village. 24 households drink unpurified water and 71 families strain it by cloth. Drug eradication centre is available in Nanduri but is not effectly working. 64 percent households are found chewing tobacco, smoking and drinking alcohol. 54 percent family are habitual for chewing tobacco, 19 percent smoking and 11 percent drinking alcohol (Fig.-5.15B). Addiction is common problems among the tribals of this village and this ultimately affects health and wellbeing ways.

Fig.-5.15 A : Use of Conceptional Control at Nanduri

B : Addiction in Tribals at nanduri

It was 73 percent households are satisfied with their socio-economic condition. 10 families are recorded as immigrant in Nanduri village. 17 persons are noted as outmigrantion for getting employment and higher education.

5.6.5 Problems of Village

Many problems are faced by tribals. Among them Marginal land-holding, traditional agriculture, low productivity causes poverty major in this village. Water scarcity during summer is severe problem for drinking and crop irrigation. The irregular electric supply is other problems. The less linking road routes, absence of drainage and toilets are common problems that affecting health. Addiction is a major problem. This village received the "President Award" for environment protection. It is necessary to implement employment guarantee scheme and essential measures to eradicate addiction habits of tribals as it is major hurdle in their socio-economic development.

5.7 Ramshej (Aashewadi) Village

Ramshej is a historical village lying Dindori tahsil of Nashik district. It is 15 kilometres away from both Nashik and Dindori and extends on 20º 7'north latitude and 73º 46'east longitude "Ramshej" is a famous fort located here from which village has renamed as "Ramshej" (Aashewadi). The village spreads over 2571 hectars and is connected by State Highway-22. Ramshej is bounded by Dehrewadi in north, Pimpalner in east, Manori in south and Gawalwadi, June Dhagur village in west (Fig.-5.16). According to 2001 Census, this village has 2152 population having density of 84 persons per square kilometres. The scheduled tribes constitute 50 percent in this village.

5.7.1 Physical Characteristics

The physiography of village is undulated with considerable height between 689 to 874 metres. The 'Ramshej' fort has elevation of 874 metres. The slope of village is towards south and southeast. The central part is elevated by Ramshej range whereas northeast and central parts are hilly covered by forest cover. Radial pattern of small seasonal streams are found in this village. The village receives average rainfall between 1000-1500 millimetres from southwest monsoon during June to October followed by winter from November to February. The summer season is from March to May. The soil is medium of brown colour. 22 percent area is forest occupying hill slopes lying north.

Fig.-5.16 : Ramshej Village

5.7.2 Demographic Characteristics

The total population of this village is 2152 among them 1075 are scheduled tribes (2001). 363 households of Ramshej were surveyed consisting 569 population. 307 are males and 262 are females in this village were surveyed. The different castes are found living in separate groups. The sex ratio is 853 females per 1000 males. Fig.-5.17A reveals that males have 54 percent and females accounts 46 percent.

Table-5.9 : Population Characteristics in Ramshej Village

Particulars	Person / Percent	Particulars	Person / Percent
Male Population	307	Less than 7 Age Population	69
Female Population	262	0-14 Age Population	196
Persons Population	569	15-60 Age Population	351
Married Population	301	More than 60 Age Population	22
Unmarried Population	268	Literacy in percent	78.4
Literate Population	392	Crude Activity Rate	61.68
Illiterate Population	108	Crude Birth Rate	2.28
Population Density	84	Crude Death Rate	0.87
Sex-ratio	854		

Source : Fieldwork, 2013.

61.69 percent population is economically active and (34.45) percent of child and old age group (3.85) are less. The crude activity rate is high accounting 61.68. Age-sex structure reveals triangular shape of pyramid and high fertility and less life expectancy. The proportion of married persons is high (52.90 percent) as compared to unmarried persons (47.10 percent). Literacy is 78.40 percent due to education facilities and proximity of district headquarter. The crude birth rate and crude death rate are 2.28 and 0.87 respectively.

Table-5.10: Composition of Religion at Ramshej

Caste	Male	Female	Total
SC	3.16	3.87	7.03
ST	49.74	41.65	91.39
OBC	0.53	0.35	0.88
Other	0.53	0.18	0.70
Total	53.95	46.05	100.00

Source : Fieldwork, 2013.

Note : (i) Population data for surveyed 100 households in percent.

Fig.-5.17 A: Population Distribution at Ramshej

B : Religion Composition at Ramshej

Out of the total surveyed households, 90 percent households belong to Hindu tribe consisting 520 population accounts 91.39 percent to total population (Fig.-5.17B and Table-5.10). It is and noteworthy that 100 percent surveyed tribal households belong to Mahadev Koli caste in this village. The females percent is less than males revealing low sex-ratio among Mahadev Koli tribe in village. This village receives moderate rainfall between 500 to 1000 mm hence; houses have flat and slanting roofs. The houses are clustered and built up by agricultural materials, stones, mud and bricks. The kaccha and semi pakka houses accounts 85 percent (Fig.-5.18A) in this village.

Table- 5.11: Sizes of Household at Ramshej

Number of Rooms	Households	Households (Square Feet)	Households
1	26	<100	31
2	56	100-200	31
3	14	200-300	23
4	3	300-400	10
>5	1	>400	5

Source : Fieldwork, 2013.

Note : Area of households are given in square feet.

The households size are found small consisting of 2 rooms. 82 percent households have 2 or less rooms (Table-5.11). 62 houses have built area upto 200 square feet. There are absence of separate kitchen in 65 households and The use of wood as fuel for cooking accounts 76 households. 44 households use LPG and other fuels (Fig.-5.18B). It is found that 12 percent households do not have electricity facility. The power-cut for upto 8 hours during day time is very common. Fig.-5.19A reveals articles used in different households shows 72 households use phones followed by televisions (54) as presently showing awareness of these tools for communication whereas lacking radio, music system, refrigerator, washing machine, sewing machine and vehicles 11 households were found complete absence of any of these articles. The present study is found that the tribals to suffer from poverty, high birth rate, and illiteracy. To overcome this, serious attempt should be made to improve the education and necessary facilities should be provided to them either free or at lowest rate for improving standard of living of this village.

Fig.-5.18 A : House Types at Ramshej

B : Fuel Use for Cooking at Ramshej

Fig.-5.19 A : Household Artical at Ramshej

B : Landholding and Households at Ramshej

5.7.3 Landuse Characteristics

This village as only 4 percent irrigated area as topography is uneven and also absence of perennial water source. The forest is on 21 percent and 50 percent area is under cultivation (Table-5.12).

Table-5.12 : Landuse Pattern in Ramshej Village

Sr. No.	Landuse Category	Area in Percent	Sr. No.	Landuse Category	Area in Percent
1	Forest	21	4	Cultivable waste	6
2	Irrigated	4	5	Area not available for cultivation	19
3	Un Irrigated	50		Total area	100

Source : Village Revenue Record, Ramshej, 2013.

19 percent area is notavailable for cultivation and 6 percent is under cultivable waste. The forest lies in northeast part on hill side. Hill slopes are not suitable for cultivation. There is no permanent source of water for agriculture; hence the area under irrigation is very small accounting 4 percent.

5.7.4 Occupational Characteristics

Tribals are engaged in primary activities as labour, farmers and forest activity. 76 percent tribals are worked as labours, 13 percent in services, 10 percent as farmers and 1 percent involved in business. Some tribals own their land but due to small landholding and un-irrigation prefer to work as labours. Out of 100 households only 19 households works as farmer on farms (Fig.-5.19B) whereas 81 percent households are landless. 15 percent household belongs to less than 3 acres land (Table-5.13). Due to landlessness and marginal land-holding, income getting from agriculture is less. 14 percent households have irrigation facility by wells and canals. Chemical fertilizers and pesticides are used for growing crops. Income from labour work is 100 to 150 rupees per day and it is flexible resulting life is miserable.

Table-5.13 : Landholding in Ramshej Village

Land size in Acres	Households	Land size in Acres	Households
<1	7	5 to 10	2
1 to 3	8	>10	0
3 to5	2	None	81

Source : Fieldwork, 2013.

The total annual income is less than 1 lakh for 88 percent households (Fig.-5.20A). The work as laboures for others is the main source of income for tribals and it is not regular and therefore has less annual income. 20 percent families are

dissatisfied in their present occupation because of uncertain jobs and therefore, poverty prevails in this village. Ramshej villagers are getting for primary and secondary schools for a distance of 3 kilometres and higher education is available at Nashik city. The village accounts 78.4 percent literacy (Table-5.9). The efforts should be made to inspire tribals for higher education by providing educational scholarships. It is found that there is lack of awareness regarding health and family welfare programme. The use of medicinal plants as first aid medicine is less (27 households) and 53 percent has ignored maternity hospital during delivery as there is absence of primary health centre in this village. Tribals are unaware about HIV (67 percent). 44 families are found avoid of conception control methods (Fig.- 5.20B) and 45 percent family prefers sterilization resulting high fertility among tribes. Public water connection is main source of drinking water. 36 families found using water without purification and 51 families strain by cloth.

Alcohol and drugs addiction are common (64 percent) and chewing tobacco, smoking and drinking alcohol addition (Fig.-5.21). This effect badly on the health, economy, and wellbeing of tribal. It is invented that though tribal living in poverty and backwardness, 91 percent family from Ramshej village are satisfied with their socio-economic condition. 30 families have migrated from Ramshej for job purpose and out migration is less accounting 6 persons for education.

5.7.5 Problems of Village

The unemployment, poverty, alcohol addictions are major problems faced by tribal community in this village. Irrigation is lacking in study village. Absence of toilet and water supply are causing unhygienic conditions. Lack of awareness about family planning and alcohol addiction are main hurdles among tribals. During the field survey it was found that 42 percent householders expressed their opinion that government should provide employment for tribals during non-harvesting period.

5.8 Khambale Village

This village lies in west ghat in Igatpuri tahsil and it is extended for 19º 43’ north latitude and 73º 37’ east longitude. It is located 11 kilometres away from Igatpuri and 40 kilometres from Nashik city. Khambale village has swallow topography on hilly slopes and valleys with altitude of 598 meters from mean sea level.

Fig.-5.20 A : Annual Income and Households at Ramshej

B : Use of Conceptional Control at Ramshej

Fig.-5.21 : Addition in Tribals at Ramshej

The village covers 811 hecters and is confined by Manik Khamb in north, Umbarkon in east, Ghoti in south, Adwan is in southwest and Waki village in west (Fig.-5.22). As per Census, 2001, village has 3309 population having density of 408 persons per square kilometre. The schedule tribal accounts 55.87 percent population.

5.8.1 Physical Characteristics

Topography of Khambale village is highly undulating and slopping towards east and northeast. The north and west parts is hilly, undulating and has uneven slope and plain in east part. Darna river is formed the east boundary of this village and flow towards north (Fig.-5.22). Forest is in patches nature lying north and east parts on hill slope accounting 12 percent area. Khambale receives rainfall of more than 3000 millimetres from June to October. Soil is red and black in colour. Black soil appears in east along Darna river bank and red soil found on hill slopes in this village.

5.8.2 Demographic Characteristics

This village has 3309 population consisting of 512 households (2001). 549 population have separate (nuclear) families and are found distinguish group of Katkari, Mahadev koli and other category in this village. Each group has separate settlements are known as 'Padas' with distinct culture. Table-5.14 exhibits that out of 549 surveyed population 281 are males and 268 are females. Sex ratio is 954.

Table-5.14 : Population Characteristics in Khambale Village

Particulars	Person / Percent	Particulars	Person / Percent
Male Population	281	Less than 7 Age Population	44
Female Population	268	0-14 Age Population	142
Persons Population	549	15-60 Age Population	386
Married Population	308	More than 60 Age Population	21
Unmarried Population	241	Literacy in percent	50.29
Literate Population	254	Crude Activity Rate	70.30
Illiterate Population	251	Crude Birth Rate	0.91
Population Density	408	Crude Death Rate	0.91
Sex-ratio	954		

Source : Fieldwork, 2013.

The male accounts 51.18 percent than female (48.82 percent) (Fig.-5.23A) showing imbalance in male-female proportion. 71.31 percent population belongs to economically active age group and child (25.87) and old age group (3.83) and resulting high crude activity rate in study region.

Fig.-5.22 : Khambale Village

Fig.-5.23 A : Population Distribution at Khambale

B : Caste-wise Sheduled Tribes at Khambale

An age-sex structure expresses triangular shape of pyramid shows developing stage and has less life expectancy. The proportion of married person accounts (56.10 percent) and unmarried person (43.90). Literacy is 50.29 percent in this village. Crude birth are and death rate are equal (0.91). 97.08 percent are Hindu scheduled tribe and 2.92 percent accounts as other than scheduled tribes. Thakur and Mahadev Koli are major tribes comprise 65.66 and 27.95 percent respectively (Fig.-5.23B). As village receiving high rainfall (>3000 mm.) houses found slanting roof and made-up of agricultural waste materials, stones, mud and bricks. Kaccha houses accounts 51 percent, semi pakka (35 percent) and pakka (14 percent). Kaccha and semi pakka houses are accounts 86 percent showing low standard of living of tribals in this village.

Table- 5.15 : Sizes of Household at Khambale

Number of Rooms	Households	Area of Households (Square feet)	Households
1	34	<100	24
2	46	100-200	50
3	16	200-300	16
4	1	300-400	7
>5	2	>400	3

Source : Fieldwork, 2013.

Table-5.15 exhibits households, size and number of rooms in Khambale village. 80 percent households have 2 rooms and 74 percent households size is less than 200 square feet. Due to marginal room size (68 percent) houses are lacking separate kitchen. 96 households are using wood as fuel for cooking and 16 households consume LPG and other fuels (Fig.-5.24A). 76 houses provide electric facility and power cutting is upto 8 hours during day. 38 households possess phones and televisions and are lacking in other articles. Less than 10 percent households, have lacking refrigerator, washing machine, cooking gas, sewing machine, two wheeler, vehicles (Fig.-5.24B). There are 29 households found absence above articles in their houses indicating low standard of living and poverty.

5.8.3 Landuse Characteristics

Topography of this village is highly uneven and perennial water source is limited in village. The area covered by forest is 12 percent and 70 percent area is cultivated only 3 percent accounts irrigated area (Table- 5.16).

Fig.-5.24 A : Fuel Used for Cooking at Khambale

B : Households Articals at Khambale

Table-5.16 : Landuse Khambale Village

Sr. No.	Landuse Category	Area in Percent	Sr. No.	Landuse Category	Area in Percent
1	Forest Land	12	4	Cultivable Waste	4
2	Irrigated Land	3	5	Area not Available for Cultivation	9
3	Cultivated Land	70			

Source : District Census Handbook, Nashik 2001.

9 percent area is unavailable for cultivation and 4 percent is for cultivable waste. The area under forest found in northwest part on hills and is non-useful for cultivation. The not-perennial tank is in village (Fig.-5.22). Darna river is a source of water for drinking and less for irrigation (3 percent). Irrigated land is mainly found in east at towards river side.

5.8.4 Occupational Characteristics

Tribal people of Khambale are engaged in primary activities. There are 58 percent tribals agriculture, 38 percent work as labours, 3 percent in service sector and one percent is business. The maximum 64 percent tribals have marginal landholding having less than 1 acre land (Fig.-5.25A and Table-2.17) whereas 21 percent household are landless.

Table-5.17 : Landholding in Khambale Village

Land size (Acres)	Households	Land size (Acres)	Households
<1	64	5 to 10	1
1 to 3	9	>10	0
3 to5	5	None	21

Source : Fieldwork, 2013.

There is only less income from agriculture only. Irrigation facility is inadequate hence, tribals prefer to work as labours. Tribal people are found unaware about using technology in their farms. Irrigation by well, tubewell and river used by 32 percent households. The tribal people now started using chemical fertilizers besides pesticides for crop growth. Fig.-5.25B exhibits 87 households have annual income of less than 1 lakh. The poverty is major problem due to insignificant land holding, less irrigation and unemployment. Tribals cultivate traditional crops like rice and nagali accruing less annual income. 37 percent families are dissatisfied in their present occupation due to unsufficent capital available for agriculture.

Fig.-5.25 A : Landholding and Households at Khambale

B : Income and Households at Khambale

The village has facility of two primariy, one secondary school and one Aadivasi Ashram school for a distance of 3 kilometre radius. Higher education is available at tahsil headquarter Igatpuri and Ghoti. The tribals have 50.29 percent literacy in 2013 (Table-5.14). Though there is availability of education facilities literacy among tribes is less. The steps to create awareness among tribal people should be initiated for further imparting education. It is found that there is less familiar about health and family welfare programme among tribals. Khambale has primary health centre. The medicinal plants are used as first aid medicines by 17 families and 56 percent females prefer maternity hospital for delivery in primary health centre in this village whereas there is lack of awareness about HIV (81 percent family). It is found that 69 families avoid conception control method (Fig.-5.26A) and 31 families use condom, pills and female sterilization causes high fertility among tribals. Wells, public water supply and hand pumps are source for drinking water. Tribal people are unaware about purification of drinking water among 46 families. Addiction of alcohol is problem among 65 percent family and addictions of chewing tobacco, smoking by 31 percent and drinking alcohol (30) (Fig.-5.26B). This adversely affects the health and family welfare. The poverty, alcohol addictions, illiteracy problems found among tribals. 36 percent family are unsatisfied with their socio-economic conditions. 2 families are found inmigrant in Khambale whereas two persons have migration to Nashik city for education.

5.8.5 Problems of Village

During fieldwork tribal people reveals following problems.

1) Marginal land size, lack of irrigation and low crop productivity.
2) Water scarcity for cultivation and drinking during summer season.
3) Unemployment during summer season and Addiction to bad habits.

53 percent tribes expressed their view that government should provide special economic package for the tribals in this village. There is essential to create awareness about education and implement of employment guarantee scheme for job searchers. Drug eradication centre should motivate to eradicate from drag addiction to tribals in the village.

Fig.-5.26 A : Used of Conceptional Controal at Khambale

B : Addiction in Tribals at Khambale

5.9 Behed Village

This village lies in Niphad tahsil of Nashik district. It is situated at $20^{0}09'$ north latitude and $74^{0}00'$ east longitude. It is 18 kilometers away from Niphad and 40 kilometres from Nashik. Behed is connected by Kaccha road to Pimpalgaon and is bounded by Pimpalgaon in north, Lonawadi and Narayangaon Tembhi in east, Wadali in south and Shirasgaon in west (Fig.-5.27). The village occupies 416 hectars land having population of 1864 and 312 households in 2001. The density of population is 445 persons per square kilometre which is highest among sample villages. The scheduled tribal population accounts 57 percent.

5.9.1 Physical Characteristics

Behed village is located on confluence of Kadva and Parishar rivers in plain area of Niphad tahsil at the altitude of 565 meters above mean sea level. The slope is towards southeast. The rivers, namely, Kadva and Parishar are flowing from west and east boundaries towards southeast direction (Fig.-5.27). The village receives annual rainfall between 500-1000 millimetres from southwest monsoon. The village experiences winter season from November to February and summer season from March to May. The soil is fertile and black in colour. There is absence of forest.

5.9.2 Demographic Characteristics

Total population of the village is 1864 among them 1061 persons were belongs to scheduled tribes accounting 57 present and has 312 households (Census, 2001). 32 percent households are surveyed during fieldwork consist 585 population (299 males and 286 females) (Table-5.18).

Table-5.18: Population Characteristics in Behed Village

Particulars	Person / Percent	Particulars	Person / Percent
Male Population	299	Less than 7 Age Population	87
Female Population	286	0-14 Age Population	187
Persons Population	585	15-60 Age Population	376
Married Population	338	More than 60 Age Population	22
Unmarried Population	247	Literacy in percent	70.28
Literate Population	350	Crude Activity Rate	64.27
Illiterate Population	148	Crude Birth Rate	2.22
Population Density	444	Crude Death Rate	1.32
Sex-ratio	957		

Source : Fieldwork, 2013.

Fig.-5.27 : Behed Village

Nucleated types of settlements are found in this village (Fig.-5.27) The sex ratio is 957. Fig.-5.28A exhibits distribution of population at Behed accounting 51.11 percent are males and 48.89 percent females. Age group-wise population reveals that 64.27 percent population belongs to economically active age group 32 percent from young age group and 4 percent from old age group. The crude activity rate is 64.27. An age-sex structure represents triangular shape of pyramid showing its developing stage. The number of persons in this age groups above 60 caste accounting 4 percent which shows poor life expectancy. The proportion of married persons is high (58 percent) as compared to unmarried persons (42 percent). Literacy accounts 70 percent. The crude birth rate and crude death rate accounts 2.22 and 1.32 percent respectively. The sample households unfolded 78 percent as Hindu scheduled tribe. Mahadev Koli and Bhil are major tribes accounting 54 and 22 percent respectively (Fig.-5.28B).

Behed lies in low to moderate rainfall region hence, houses have flat roofs and are nucleated at Gavthan. There are three house types among them, kaccha accounts 39 percent, semi pakka (25 percent) and pakka (37 percent) (Fig.-5.29A). Houses of this village are built by stones, mud and bricks. The sizes of households are small and mostly consisting of 1 room and area up to 200 square feet 71 houses have 2 or less rooms (Fig.-5.29B). 37 houses have area upto 200 sq. ft. (Fig.-5.30A). As number of rooms and area are less, 69 percent houses have absence of separate kitchen. 64 percent households are using wood as fuel for cooking and 46 percent are consuming LPG and other fuels (Fig.-5.30B). Presently, 85 percent houses have electricity supply. The power cutting is common problem for village upto 8 hours during day time. In order to assess their socio-economic condition and standard of living tribals data have obtained. It clearly indicates that 69 and 68 houses possess televisions and phones respectively. Tribals are found use of radio, music system, refrigerator, washing machine, cooking gas, sewing machine, two wheeler and vehicles (Fig.-5.31A). Whereas 11 houses are lacking in these articles. It is noted that tribal people have better standard of living as irrigation and fertile land and therefore this village has much better conditions than other sample villages in study region.

Fig.-5.28 A : Population Distribution at Behed

B : Caste-wise Population Distribution at Behed

Fig.-5.29 A : House Types at Behed

B : Houses and Number of Rooms at Behed

Fig.-5.30 A : Houses and Area at Behed

B : Fuel Use for Cooking at Behed

5.9.3 Landuse Characteristics

Table-5.19 reveals different landuse pattern in Behed. It is observed that 77 percent area is irrigated as this village lies in plain and availability of immigration facility at the confluence of Kadva and Parishar rivers (Fig.-5.27).

Table-5.19 : Landuse Pattern in Behed Village

Sr. No.	Landuse Categories	Area in Percent	Sr. No.	Landuse Categories	Area in Percent
1	Forest Land	Nil	4	Cultivable Waste	1
2	Irrigated Land	77	5	Area not available for cultivation	13
3	Cultivated Land	10			

Source : District Census Handbook, Nashik 2001.

There is absence of forest area in Behed. 13 percent area is unavailable for cultivation and 1 percent area is under cultivable land. Agriculture is practiced intensively in this sample village.

5.9.4 Occupational and Other Characteristics

Behed has largely involved in agriculture activities. 84 percent families work as labours and 14 percent engaged in agriculture, one percent in service sector and one percent having own business. Agriculture is a main occupation accounting 98 percent tribal households work as labours (Fig.-5.31B) and 20 percent families have 3 to 10 acre land in this village. (Table-5.20)

Table-5.20 : Landholding in Behed Village

Landsize (Acres)	Households	Landsize (Acres)	Households
<1	6	5 to 10	5
1 to 3	3	>10	1
3 to5	5	None	80

Source : Fieldwork, 2013.

It is identified that due to landless condition tribals prefer to work as labours. 2 percent households have marginal. Agriculture is prosperous in Behed. Tribal people get labour jobs at non-tribal landlord peoples. The wedges are 100 to 150 rupees per day. It is observed that 78 percent families are satisfied in their present occupation and 22 percent are unsatisfied. 88 families have total annual income of less than 1 lakh (Fig.-5.32A). There is absence of family which has annual income more than 10 lakh annually.

Fig.-5.31 A : Household Articals at Behed

B : Landholding and Households at Behed

Fig.-5.32 A : Annual Income and Households at Behed

B : Use of Conseptional Controle at Behed

Village has facility of primary school within 3 kilometres radius. Higher education is available at Pimpalgaon Baswant. For surveyed population literacy is 70.28 percent. The primary school provides educational materials and mid-day meals for school children's (Photo-29). There is lack of awareness regarding health and family welfare programmes among tribals. There is absence of primary health centre, tribal people rarely avail health facility from Pimpalgaon Baswant. The medicinal plants are used as first aid medicines by 41 percent family and 77 percent prefers maternity hospital during delivery. There is lack of awareness about HIV (71 percent). It is found that 77 families are not using any conception control method (Fig.-5.32B). Only 23 families using methods like condom, pills and female sterilization. Hence, fertility among tribals is high. Wells are main drinking water source for villagers. It is noted that 71 families are still using water without purification in this village. 59 percent of households have addiction to chewing tobacco, smoking and drinking alcohol. It is found that 53 percent family are habitual for chewing tobacco accounting 11 percent smoking and 15 percent drinking alcohol (Fig.-5.33). This badly affects the health and welfare of family. It reveals that 75 percent family from this village are satisfied with their socio-economic condition. 11 families are found as inmigrant whereas two persons are migranted for further education.

5.9.5 Problems of Village

Tribal people mainly depend on labour work which is asset of their income. Uncertainty of labour work is problem among tribals. Unemployment during non-harvesting period is another problem. Village having inadequate social facilities like unhygienic toilet, internal roads, underground drainage and health clinic causes health problems among tribals. Tribals are facing political problem as they are not getting information and required documents eassey about tribal scheme easily from Grampanchayat Office.

5.10 Resume

This chapter has attempted to study sample villages considering geographical locations, physiography, demographic characteristics and socio-economic aspect of tribals population during fieldwork. The tribal population in study region is found varied in characters. Four sample villages are situated on undulating topography while Behed is in plain fertile region in Niphad tahsil.

Fig.-5.33 : Addiction in Tribals at Behed

Kokna is major tribe accounts 57.67 percent found in Kotambi and Nanduri has 52.46 percent . Mahadev koli tribes are dominated in Ramshej and Behed while Thakurs are in Khambale village. Behed has found highest density accounting 444 per square kilometres due to irrigation and job opportunities. Sex ratio among tribal from sample villages found decline. It is found that literacy of tribal has increased gradually in sample villages. The highest literacy (70.28) is found in Behed while Khambale has literacy of 50.29 percent. Proportion of old age group (above 60) population is low indicating less life expectancy in tribal community. The houses both Kaccha and semi paccha types in study region reflect the local relief, climate and economic condition. Kotambi and Nanduri have more area under forest accounting 32 percent and 30 percent respectively while Behed has absence of forest. Behed has 77 percent under irrigation while remaining sample villages have less irrigation comparatively. Tribals in Behed and Ramshej involved as labourers while tribals from Kotambi, Nanduri and Khambale are engaged as farm work. It is observed that their present occupation fails to fulfil fundamental needs of food, cloth and shelter. More than 90 percent tribal families have less than one lakh annual income. There is less awareness about health and family planning. Water scarcity and unemployment during summer is severe problems at Kotambi and Khambale. Uncertain work and unemployment during non-harvesting period is serious major problem in Behed.

CHAP TER-VI

TRIBAL PROBLEMS AND PLANNING

6.1 General Introduction

A deliberate problem always calls for a planning strategy and its practicality of strategy determines the productive results for development programmes. In real sense, nature of strategy depends on problem, situation and objectives. The definition of problem and goals are, therefore, pre-requisite for understanding the strategy. Nashik district accounts 23.71 percent tribals population. For the upliftment of tribals several development programmes have been undertaken by Central and State Government from time to time involving huge human, financial and material resources too. The present chapter, has attempted to find out tribal problems and to suggest planning strategy for tribal development in study region. Such study will enable to get a new direction for tribal development in study region. Education, health, economy and TSP plans and other aspects are studied in this chapter.

6.2 Programmes Implemented Through Five Year Plans.

Tribal population in Maharashtra accounts 8.85 percent to total population in 2001 and it is largely concentrated in northwest hilly Sahyadri region in Nandurbar, Dhule, Nashik, Thane, Jalgaon and in east districts namely, Gadchiroli, Bhandara, Gondia, Chandrapur and Nagpur. According to Government of India (1975-76) villages having more than fifty percent tribal population is considered for Integrated Tribal Development Project (ITDP) and where less than fifty percent tribal population have implemented Additional Tribal Sub Plan (ATSP) and Modified Area Development Approach (MADA) and Mini MADA in other areas. Tribal Sub Plan (TSP) approach was adopted from the beginning of fifth five year plan (1974-75) in India. Table-6.1 shows budget proposed on tribal programmes in Maharashtra state from fifth five year plans from 1974 to 2014. Initially 4.75 percent was alloted for the period from 1974 to 1979 which was increased upto 8.94 percent in eleventh plan. This total expenditure accounts 3 percent to total budget of state and averagely 90 percent to provision (Arthsanklpiya Andaj Pustika, Tribal Development Department).

Table-6.1: Budgatory Provision on Tribal Development in Maharashtra State

Sr. No.	Plans	Rupees in Crores	Tribal Sub Plan	Percent
1	Fifth Five year (1974-1979)	2627.57	124.99	4.75
2	Sixth Five Year (1980-1985)	6537.24	341.11	5.22
3	Seventh Five year (1985-90)	10500	525	5.00
4	Eighth Five year (1992-1997)	24735	1818.47	7.35
5	Ninth Five year (1997-2002)	33914.82	2793.59	8.24
6	Tenth Five year (2002-2007)	48561.15	4049.77	8.34
7	Eleventh Five year (2007-2012)	150117	13418.35	8.94
8	Annual Plan (2012-2013)	45000	4005	8.90
9	Annual Plan (2013-2014)	46938	4177.46	8.90

Source : Annual Tribal Sub Plan, 2013-2014

According to constitutional provision, state Government should promote in education and economy of tribals as well as protect them from social injustice and exploitation. There are two ITDP plans have implemented in Nashik and Kalwan tahsils with an objective for integrating at village level. Beside this, various tribal schemes have implemented by Government of Maharashtra state. Some major area of scheme are as below :

6.2.1 Educational Schemes

Maharashtra State Government has emphasized on tribals education who are undoubtedly far behind. Ashram school started to impart tribal education where lodging, boarding, text books, uniforms are free provided. Government providing grants for construction of primary school buildings and are appointing of school teachers. Even year slotted grant was given for secondary education for private institution and instructional material scheme up to secondary schools belonging tribal region. In order to motivate tribal population for getting self-employment, vocational schools were started and certificate were 90 percent grant were spent for play grounds development and this budget was increased to 7.5 lakh in 2005-2006.

6.2.2 Health Schemes

Government of Maharashtra has attempted to provide medical facilities for tribals. National Malaria Eradication Programme is being implemented and 1416.7 lakhs rupees have allocated 2013-2014. The Programme of Polio Education has undertaken by Government of India in 2005 and for this 18.6 lakhs rupees has provided for 2013-2014. The supply of diet facilities to indoor tribal patient's in rural

hospitals and primary health centers is another scheme for which 141.1 lakhs rupees have been proposed 2013-2014. For the establishment of Rural Hospital (331 Lakh), Primary Health Centre (14.1 lakh) and Health Sub centre (307 lakh rupees) have proposed budged in 2013-2014 on tribal sub plan.

6.2.3 Welfare Schemes for Economic Upliftment

Government of Maharashtra has made provision in TSP for economic welfare of tribal population in the form of scholarship to students, hostels, ashram schools for which 10000 lakhs rupees for 2013-14 have allocated as below.

(1) Government Ashram Schools : Tribal development department running 552 Ashram Schools in hilly and remote areas in Maharashtra state.

(2) Junior Colleges : The Government of Maharashtra has started 67 junior colleges in 1999-2000 for tribal students and provide free lodging, boarding, educational materials and amenities.

(3) Government Hostels for Tribal Students : In order to attract tribal students pursuing higher education, tribal development department started 479 Government Hostels at district and tahsil level have build up and seats in these hostels have reserved for different education for triabls.

(4) Maintenance and Travelling Allowance : The government gives person 100 rupees as traveling allowance and 100 rupees as maintenance allowance per month per student and 500 rupees scholarship for handicap students.

(5) Pre-Metric Scholarships : For reducing drop out rate in schools " Pre Secondary Golden Jubilee Tribal Scholarship" has been started in 2010 and Rs. 1000/- for 1^{st} to 4^{th}, Rs. 1500/- for 5^{th} to 7^{th} and Rs. 2000/- for 8^{th} to 10^{th} students (Annually) for regular attendance of tribals students.

(6) Eklavya Model English Medium Residential School : The Government of Maharashtra with assistance of Central Government has established four residential school english medium among them one is at Mundhegaon in study region to provide quality education to tribal students.

(7) Computer Training : This scheme imparts to six month computer training course to tribal students studying 8^{th} to 12^{th} in Ashram Schools.

(8) Pre-Military, Police and Motor Driving Training : In order to fulfill the backlog in police force and army, government has established training centers. The duration of training is six months and two sessions are held during a year. One training center is functioning from 1990 in study region.

(9) Supply of Electric Motor Pumps and Oil Engines : The tribal cultivators have provided with electric motor pumps and oil engines who has 1.5 acres to 16 acres cultivable land on subsides basis.

(10) Thakkar Bappa Tribal Village Integrated Improvement Programme has implemented in MADA and Mini-MADA pockets by integrated approach (2013-2014).

(11) Khavati Loan finance scheme has introduced in 1978 in TSP area. This provides consumption requirements of needy tribal families during the lean employment season at the rate of 7.5 percent interest for one year.

(12) Financial Assistance to Shabari Vitta Vikas Mahamandal : This scheme provides financial assistant for self-employment since 2000-2001.

(13) Kanyadan Yojana : For reducing extravagant amount on marriages and forbid unfair practices in marriage, Government has initiated "Kanyadan" scheme by supply financial assistance Rs. 10000 to tribal couples from 2003-2004.

(14) Shabri Gharkul Yojana : From 2013-2014, this scheme has introduces to provide shelter for tribal families and 500 corers rupees were allotted.

Besides above schemes, Government of Maharashtra has introduced special schemes for tribal women and children. It includes supply of bicycles to girl students studying in 5^{th} to 10^{th} classes, opening of new Balwadi, free sewing machine, construction of toilets and laboratories for rural women, training to Panchayat Raj women representative, supply of uniforms to students, financial assistants to Mahila Mandals and self-help groups for industrial training purposes are other schemes in study region (2013-2014). Integrated child development scheme is sponsored by Government of India and a package of services to children below 6 years of age and pregnant women like supplementary nutrition, immunization, heath checkup. Nav Sangeevan Yojana scheme aims at integrated and coordinate, implement and strengthen the drinking water facilities, health facilities by agencies at several levels. Entrepreneurial development programme implemented by Directors of industries for up gradation of skills among educated and unemployed tribal youth and give them training based on entrepreneurship development for 12 days residential for which Rs. 4000/- are given per candidate per month. Apart from above schemes Government of Maharashtra has implemented Indira Awas Yojana and Jawahar Rojagar Yojana since 1996 to improve the quality of life among tribals. Table-6.2 shows sectorwise distribution of outlay of 41177.48 crore rupees for 2013-2014.

Table-6.2 : Sectorwise Distribution of Outlay in 2013-2014.

Sr. No.	Name of the Sectors	Percent to Total Outlay	Sr. No.	Name of the Sectors	Percent to Total Outlay
1	Welfare of Backward Classes	40	7	Irrigation	7
2	Rural Water Supply	3	8	Animal Husbandry/ Fisheries	2
3	Health	17	9	Nutrition	3
4	Education	6	10	Soil Conservation	2
5	Power Development	2	11	Other all Sub Sectors	3
6	Roads Development	15		Total	100

Source : Annual Tribal Sub Plan, Tribal Development Department, Govt. of Maharashtra, 2013-2014

Table-6.2 reveals that backward sector alloted maximum outlay (40 percent) but important sectors related to malnutrition (3), education (6) and health (17) lacking behind in this budget.

6.3 Tribal Problems

It should be noted that British ruler had recognised need of special protection for tribals and it was the pioneers consideration of tribal policy in India. Jawaharlal Nehru appreciated spirit, operational feasibility of Elwin's policy suggestions. Nehru belives trust that development should not be at the cost of inherent qualities and accumulated experiences of these people. This basic philosophy underlies the famous 'Panchasheel' or five principles given by him for administration of tribal areas (Govt. of India, 1954). These five principles are:

(i) The tribal people should develop lines of their own genius and encourage their arts and culture.

(ii) Tribal rights on land and forest should be respected.

(iii) Encourage tribal to train them to build up a team in the field of administration.

(iv) Make awareness to tribal to work through and social harmony and cultural institutions.

(v) To judge the tribal development not by statistics or money but by quality of human character.

These principles are waiting to transmit up to root level after sixty six years of Independence. During fieldwork researcher through interviews and personal discussions has found that even today tribals number of problems have many problems as below:

Education is measured by rates of literacy, enrolment and drop out in schools and colleges. In five year plans, priority was given to educational development of scheduled tribes. The scheduled tribes development department has been spending money an tribal population by providing scholarship and finance for boarding. Even then it is noticed that tribal has motivated for imparting education in study region. Firstly, low of male literacy (49.3 percent) and female literacy (37.2 percent) and it is increasing very slow resulting poor enrollment of tribal children is first problem. Secondly drop out rate has increased in education as there is less awareness about education. Apart from this, attendance allowances are given to 5^{th} to 10^{th} standard students is insufficient now a days. Thirdly, how can community fully involve and support education system are major problem in study region. Fourthly Ashram schools are not working in good condition. Finally though outlay is 6 percent on education, actual expenditure was only 3.82 percent in 2011-2012 (Karykram Andajpatrak, Tribal Development Department). Due to lack of awareness of education have high birth rate, unemployment and poverty have problems have arised in study region. The tribal population is situated at isolated areas away from urban centers, hospitals and health centers. Tribals can not timely able to use of available medical facilities. Mostly tribals prefer medicinal plants for traditional treatments. Secondly, unaware about HIV and family planning. Thirdly, tribal are addicted to alcohols and similar habits. Though there is provision of 17 percent budget were allotted to health (Table-6.2), available outlay is 7.82 percent in 2011-2012 (Annual Sub plan 2008-09 and 2011-2012). Hence, health problems like infant mortality, malnutrition and less life expectancy are burning problems in study region.

Economic condition of tribal in study region is below average due to marginal land holdings, traditional agriculture, unemployment, high growth of population. These are the main causes of poverty among tribal in study region. Small landholdings, low productivity, traditional cropping and unemployment are some issues are found in study region which leads economic problems. Marginal landholding is problem fallowed by less availibility of irrigation. Unemployment and marginal workers are the problems in tribal community which led poverty in tribal region. Why there is shortfall in percentage of recruitment of tribal people in government sector? Due to poverty tribals are unavailing facilities like health, education, infrastructure etc. It is unaided fact that Government of Maharashtra not sending more than 3 percent to total budget for tribal development.

Tribal sub-plan approach has now been orientated for five year plan. It is special plan introduced to ensure share as a matter of right for satisfied needs of tribal population. There is gap between plan and implementation of Tribal Sub-Plan in study region. Whatever the economic provisions are made in tribal sub-plan show less success not expended 100 is big problem. In last 17 years tribal sub plan balance is 8804 crore rupees in Maharashtra state (Annual Sub Plan). During the field survey it was revealed that tribal people are unaware about their rights and schemes implemented by Government for them. The Government has found fail to implement schemes effectively in study region and it was noticed that there is a gap between tribals and Government.

6.4 Planning Strategy for Tribal Development

There are three components of strategic planning (Fig 6.1). First is problem solving by issue analysis; second is management by fulfilling objectives for results and third is team building among tribals.

The priority should be given for educational imparting to scheduled Tribes population. The following strategy can be adopted in regards to education for tribals development in study region.

(i) Awareness should be created regarding education in tribals, it holds key position.

(ii) Scheme for raising enrolment of scheduled tribe children in schools and for drops-outs.

(iii) Financial assistance should be given to higher education in tribals area.

(iv) Schemes for incentive to especially talented tribal youths in arts and sports.

All education schemes should implement at root level very effectively for upliftment of tribal community.

The various measures have undertaken by central and state Government for timely medical attention to scheduled tribes as tribals live far away from hospitals and health centres and are not able to make use of available medical facilities. Fallowing strategies are useful for heath conditions of tribals.

(i) There should be visiting vehicle clinic for remote tribal Padas located in Peint and Surgana tahsil in study region.

Fig.-6.1 :

(ii) Necessary training and awareness should be created among tribal women regarding health, hygiene and nutrition.

(iii) There should be eradication of alcohol, tobacco and smoking habits among tribals.

(iv) There should be proper implementation of scheme for food support and hygienic conditions in five tribals tahsils namely Peint, Surgana, Dindori, Trimbakeshwar and Kalwan.

Agriculture activity and agriculture labours work are backbone of tribal economy and therefore it is necessary to implements the schemes to improve agriculture and allied activities. In addition to this provide employment opportunities for increasing income and standard of living. In this context following strategies should be adopted.

(i) Tribal concentrated tahsils namely Peint, Surgana, Dindori, Trimbakeshwar and Kalwan receive high amount of rainfall between 2500 to 3500mm and it is possible to construct small-small irrigation tank with the help of tribals participation as ideal village Ralrgoan Sidhhi developed. For the beneficial of agriculture and employment generation too.

(ii) There should be assuring work and payment for tribal workers and marginal landholders throughout the year.

(iii) Financial assistance should be given for adaptation of technology in agriculture.

(iv) Free supply of higher yielding varieties of seeds and chemical fertilizers to tribal cultivators.

It is urgently necessary to establish that tribal development programmes helped tribal communities to make a significant change in their occupational structure showing positive impact on income pattern. Tribal sub-plan programmes should be formulated with keeping in local conditions and ensuring actual participation of beneficiaries. Awareness of tribal welfare scheme are most important for their socio-economic transformation for tribals. It is found during the field work that despite genuine efforts made by central and state government and various agencies for promoting social and economic progress of tribals are far from satisfactory and tribals are continue to lag behind than other social groups. In this regards following strategies are adopted.

(1) Government and Tribal Development Department should create awareness by sending letters to each household, primary school and Grampanchayat regarding every scheme before the implementation of scheme and at the beginning of financial the year.

(2) Tribal Development Departments should implement all plans and schemes by motivating tribals without corruption and without giving trouble to them.

(3) Literate tribal people should support for implementation of sub plans in their regions by creating team for awareness.

(4) 100 percent allocated money should be utilized effectively.

The Government policies are good but it is very essential to remove gap between tribals and Government administration. Government should create awareness among tribal regarding their schemes by sending annual policy plan to each tribal family by post. The provided information should be given in known language to tribals. There should be easy asses, helpfulness and kindness to tribals at tribal development offices and 100 percent perfect implementation is essential. Tribal development department should utilize 100 percent budget annually. Tribal research and training centres should carry out research finding for enhancement of tribal community.

6.5 Proposed Model For Tribal Development

Education should give top priority among tribal as it enhance the quality human resources for overall development of human being. First stage involves three strategies. Firstly, it is essential to create awareness regarding education among tribal especially among women. Secondly, to provide free quality education at their places distance and have easy access to education. Second stage comprises creation of quality human resources by gaining skills, avail of employment by family planning and health. This stage will be helpful for enrich standard of living of tribal people and lastly, utilization of these quality resources for creative work by adopting government schemes for them. This will support for eradication of poverty among tribal community. Hence, it is essential increase more budget for education upto 15 percent annually (Fig.-6.2). Inclusive development of tribal is holding key position. While considering welfare of backward tribals, rural development, agriculture, power, irrigation, health and nutrition an attempt has made to proposed a model for tribal development.

Fig.-6.2 :

This model consists of five stages namely; need identification, participation, programme designing, execution strategy and withdrawal strategy.

(i) Need Identification : This first stage includes aspect like why, whom and what is need of development. What is scope and available resources? and specific need based emerging problem identification. It required in depth field surveys in study region.

(ii) Participation: Involvement of beneficiaries is second impotent aspect. For that acceptable intervention and creation of awareness is required as essential stage.

(iii) Programme Designing : While considering need base problems and participation of tribal people be considered policy or plan should be design perfectly.

(iv) Execution Strategy : After preparation of plan there should be exclusive implementation of strategy with time limit to achieve desired goals.

(v) Withdrawal Strategy: After achieving the goals strategy should be withdrawal by formation of people organization like self-help groups. This will help to capacity building in particular tribal region.

6.6 Resume

The plan reports highlights several programmes have been introduced to progress the economic conditions of tribal population in Maharashtra state and study region in tribal regions. Tribal Sub-Plan outlay was in accordance with proportion of scheduled tribe population as per the recommendations of Shri. Sukhatankar Committees Report. It was found that tribal development schemes have brought less change among tribal people. The study reveals that these efforts were made without actual capable development of tribal people. For the successful implementation of tribal development schemes, tribal people should more access to these schemes. Tribal offices should be within their reach hence Integrated Tribal Development Office should be established at tahsil level. Moreover, complicated procedure and documentation of schemes should be reduced. More proportion of funds be used for individual beneficiary schemes. At the same time necessary action should be taken to control mass level corruption in implementation of tribal development plans. The suggested models should be implemented genuinely for upliftment of tribal population in study region.

CHAPTER-VII

SUMMARY AND CONCLUSION

7.1 General Introduction

The demographic characteristics of tribal population have transformed since last two decades. Even then it is important to adopt the better population policies in order to upliftment of tribals in study region. In order to eradicate poverty and for bringing out tribals in main stream, researchers have been continuously carried out research. The present research may depend on scientific study of tribal population characteristics both at micro and macro levels, here an attempt has been made to assess, analyse, describe and interpret the tribal population characteristics in Nashik district and investigate decadal changes in demographic characters, occupational structure and socio-economic conditions of tribal population, distribution, density, growth, sex ratio, literacy, dependency ratio, caste composition, education occupation, available infrastructures and provide strategy for upliftment of tribals in study region. In this chapter an effort is made to present the findings and suggestions of research work in briefly.

7.2 Summary

The research work entitled "A geographical study of tribal population characteristics in Nashik district, Maharashtra state" has been undertaken. This study is based on published secondary data and fieldwork at primary level. Primary data have obtained from households of five sample villages. The secondary data have been acquired from District Census Handbooks, Nashik District; Socio-economic abstract, Nashik District; Annual plan, Tribal Development Department Nashik. Concentration index, location quotient index, child-women ratio, dependency ratio, index of ageing, growth rate, projection, activity rate, Lorenz curve , Karl Pearson's correlation coefficient method have been applied in present study and then summaries findings in text. Nashik is an important district in northwest in Maharashtra state consisting 15 tahsils (15,530 square kilometers). The study region is divided into three physiographic divisions, namely, western region, central region and eastern region. The physiography is undulating and sloping towards east from Sahyadri range. Godavari and Girna are main rivers flowing north and south parts in study region respectively. The study region is made up of igneous rock and red brown, loam, black

and yellow soils. The monsoon climate experiences in study region. The distribution of rainfall is fairly uneven varies between 500 millimetres to 3300 millimetres from June to October and it decreases from west to east. The tropical moist deciduous forest covers 21.53 percent and appears mainly in west part. Nashik district consists of 6107187 population provisional in 2011 and (49,93,796 population in 2001).The density of population was 322 persons per square kilometer with (2001). Nashik tahsil has highest density of 1625 persons per square kilometer. The study region has 61.2 percent rural and 38.8 percent urban population and literacy is 74.15 percent in 2001. The percent of scheduled tribes accounts 23.92. Peint, Surgana, Trimbakeshwar, Dindori and Kalwan tahsils have more than 50 percent tribal population. Nashik is district headquarter, educational commercial and industrial centre having network of linkage of roads and railway routes. The national highway No.-3 and 50 and other state highways passes from study region. 60 percent population involves in agriculture. Niphad tahsil has found highest 32.8 percent of irrigation.

The spatio-temporal analysis of tribal population characteristics unfolded great variations within the study region. The tribal population have concentrated in west hilly topography in study region and restricted in Peint, Surgana, Kalwan, Trimbakeshwar, and Dindori tahsils living in isolated patches. This study also reveals concentration of tribal population have largely influenced by natural conditions. Koli-Mahadev ranks first in terms of tribal population (33.04 percent) Kokna, Bhil, Thakur, Warli, Khathdi, Katkari, Koli-Dhor, Tokare-Koli, and Pardhi major in study region. The Peint, Surgana, Kalwan, Trimbakeshwar, Dindori and Nashik tahsils have found density of 80 persons per square kilometer. Kalwan tahsil has lowest growth (5.5 percent) in tribal population in 2001. In population space relationship actual trace line differs from the theoretical trace line and line highlight tribal population is distributed unevenly in study region. Population index has presented high tribal concentration in Surgana tahsil (3.96). Population growth rate was declined from 32.70 to 28.27 during study period. Peint tahsil ranking first for declining tribal growth rate. Tribal population for 2011 may reach up to 15,31,753 and 19,62,687 for 2021. The predicted population is very close to provisional figures (15,64,369). Tribal sex-ratio was 979 and 976 in 1981 and 2001 respectively. Kalvan tahsil has highest rural tribal sex ratio (1000) and Malegaon tahsil has found highest urban tribal sex ratio (1024) in study region whereas Nashik tahsil has lowest sex ratio due to urbanization, industrialization and male in-migration for jobs, services and education. Age-sex

pyramid for tribal population reveals triangular shapes during study period found large numbers in 5-9 age groups. It was found that literacy rate was low 16.73 percent in 1981 and 49.3 percent in 2001. Female literacy is found less than males. The dependency ratio of tribal population is 87.93 whereas for young age dependency ratio is 75.99 it is low as compared to total dependency ratio (87.93). There are 41 castes of tribes in study region. Koli mahadev, Kokana, Bhil, Thakur, Varli, and Kathodi are some major tribes. The percent of Koli mahadev is 33.04 percent in study region followed by Kokana (30.02) and Bhill (25.16). The literacy rate low (20.15 percent) in study region. The study region has 635.09 child women ratio (2001). In migration study it is clearly identified that nearest districts namely Dhule, Jalgaon and Ahmednagar have larger tribal migration.

The occupational structure of tribal has assessed for understanding distribution and sex wise participation in different economic activities. The percent of tribal main workers were increased by 6.72 percent and marginal and non-worker were decreased – 3.38 percent and 3.32 percent respectively during study period. The main workers occupational structure deliberates the percent of tribal cultivators decrease in tribal concentrated region in Peint and Surgana tahsils. The central part in study region, namely, Baglan, Kalwan, Chandvad and Niphad tahsils have increased tribal cultivators. The percent of tribal agricultural labours increased by 2.33 percent in study region emphasizing wage-earners have increased in agricultural sector whereas industry workers are very less (0.33) in proportion because "Balutedar" performing such occupations at village level but after 2001-11 increased slightly (0.22 percent). The highest percent of other workers was recorded in Nashik tahsil (17.08 percent) due to urbanization, industries, sugar factories, good network of transport and in 2001 Maharashtra Industrial Development Corporation (MIDC) zones. The tribal marginal workers have found reduced by 3.38 percent whereas main workers have increased to 5.46 percent in study region. The percent of tribal non-workers were reduced by 3.32 percent during study period. The tribal male marginal workers are less 36.22 percent as compared to female 63.78 percent in study region. Crude and economic activity rate was analyzed reveals that crude activity rate is reducing by in both male (05.20) and female (0.40) tribal workers. General activity rate was very high among tribals accounting 97.66. The relationship between workers and literacy was computed. In 1981 relationship between labours and literacy is positive (0.23) but low for main marginal workers (R = 0.16) whereas 2001 has found moderately positive relationship

(R = 0.46) for main works and strongly positive relation for marginal workers (R = 0.93).

Fieldwork carried out by researcher and infolded demographic, occupational and socio-economic characteristics of tribal population for five sample villages in study region and found varied characters. The demographic characters, occupation structure and way of living changed during study period. Tribal sample Villages are namely, Kotambi, Nanduri, Ramshej and Khambale and Behed. These villages have similar physiography and climate condition except Behed village. It was found that tribal population has rapidly increased in study region. Kokana is major tribe found in Kotambi and Nanduri villages. Mahadev koli tribes are dominated in Ramshej and Behed while Thakur tribe is in Khambale village. Ramshej accounting lowest density (84 per square kilometer) of tribal while Behed has highest density (444 per square kilometer) owing location in plain fertile area and available irrigation facility. The highest literacy is found in Behed (70.28) while Khambale is lowest literacy (50.29) in study region. High crude activity rate was recorded at Khambale village (70.30 percent). All five sample villages found more birth rate than death rate. The proportion of old age group (above 60) is low indicating less life expectancy among tribals.

The house types in study region have retectes physiography, climate and economic conditions. Kaccha and semi pakka houses 90.96 percent tribal lies below poverty line (Annual Sub plan 2013-2014). Assessment of tribals households socio-economic conditions in sample villages clearly indicates tribal possess televisions and phones (70 percent) but less possessing other article. Landuse pattern in sample villages varies according to their geographical locations. Kotambi have more area under forest (32 percent) while Behed has absence of forest. Behed has maximum area under migration (77 percent) irrigation while remaining four villages have less in irrigation. Tribals in Behed and Ramshej work as labour are in-migrated from jobs and further work from tribal concentrated region, while maximum tribals in Kotambi, Nanduri and Khambale engaged in cultivation following traditional practice of paddy, nachni and khurasani crops. It is found that other income sources among tribals are very limited in study region. 90 percent tribal families have total annual income of less than one lakh. Nanduri and Khambale have primary health centres. Less awareness was identified about family planning in Kotambi village has high birth rates (28.6 per thousand annually). Water scarcity and unemployment during summer

are major problems identified at Kotambi and Khambale villages. There is less awareness about education among tribals in Khambale village whereas in Behed, information, documents, area easily available among tribal population.

With considering several tribals problems presenting attempt has been made for development of tribals through five year plans have assessed about education, health and welfare schemes of tribals during five year plans in TSP areas. It is imperative to note that fifth five year plan was outlined 4.75 percent and has increased up to 8.94 percent in eleventh plan accounting 3 percent total budget of Maharashtra state. Tribal region is presently facing education problem like low literacy (Male 49.3 percent and female 37.2 percent), drop out rate has increased as level of education increased. Traditional cropping and unemployment are main economic issues in study region. Strategic planning has suggested for dealing with management by team building among tribals. Finally, model has proposed for tribal development consists five mechanisms, namely; need identification, participation, programme designing, execution strategy and withdrawal of strategy.

7.3 Suggestions

On the basis of above study fallowing suggestions are given for welfare (upliftment) of scheduled tribes in study region.

(i) Irrigation should be introduced to enhance agriculture activities in Igatpuri tahsil as this taluka recives rainfall of region 3000 to 3500 millimetres by participation of tribals and creating team building awareness as this tahsil facing scarcity of water for agriculture and drinking during summer.

(ii) Small-small irrigation tank should be constructed at Khambale and Kotambi which lie in high rainfall region 2500 to 3500mm. It is beneficial for agriculture and solve water problem during summer.

(iii) Tourism activities should promote at famous ‘Ramshej fort’ at Ramshej village to enhance tribal economic conditions.

(iv) Reservation and training should be given to tribals in private sectors. Such amendment in law should be made by government.

(v) The unit of Tribal Department should establish at every tahsil place where tribal population is more than fifty percent and consider the opinion of tribals before the starting the policies and implementing schemes. Booklets should be provided to create awareness regarding policies schemes to every household in study region.

(vi) For increasing literacy among tribal women school education be introduced at every pada at tribal villages in Nandgaon, Malegaon and Yevla tahsils.

(vii) There should be flying health clinic vehicle visit at every month in remote tribal villages particularly Peint and Surgana tahsils.

(viii) It was suggested that 15 percent financial assistance of total Maharashtra state budget should be allotted on higher education for tribal dominating talukas in study region.

(ix) The effort should be made to eradication of alcohol, tobacco and smoking habits among tribals in tribal villages.

(x) The tribal workers in Niphad tahsil should get work during non-harvesting period guaranty schemes.

7.4 Concluding Remark

Human resources in any region hold key position in development process. Population and their functional interaction in surrounding environment are highly dynamic in nature. Tribal region is found out of the main stream of development causes economic disparity. The tribal educated youth and government should lead for development of tribal community. However, there is need to improve potential, standard of living, team building attitude and create maximum quality services by producing employment within study region. Such study may has abundant potential and attract attention of experts belongs administration from tribal department, population geographers, and regional planners for future in depth study and better planning for further improvement of tribal community in Nashik district. In this respect there is a sufficient scope for research in general for preparing planning strategy for tribals and population planning in geography, investigation and experiment in tribal population study and planning.

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APPENDIX-A

Population and Population Density in Nashik District

Sr. No.	Tahsils	Population					Population Density				
		1961	1971	1981	1991	2001	1961	1971	1981	1991	2001
1	Nashik	327281	424590	626777	894932	1317367	244	335	495	707	1625
2	Peint	68425	82380	98963	128019	96774	78	88	106	137	173
3	Dindori	112110	136883	163928	208229	264727	88	103	124	157	197
4	Surgana	58247	69719	82841	109332	145135	72	83	99	130	172
5	Kalvan	99593	124328	156987	198843	165609	90	104	117	167	193
6	Baglan	153470	197102	243341	296184	311395	95	122	150	183	211
7	Malegaon	313008	426194	517355	672428	789230	162	220	268	347	432
8	Chandwad	96931	117332	133171	165015	205189	102	122	139	172	214
9	Nandgaon	121211	146338	169449	203075	236319	109	134	146	186	217
10	Yevla	103326	126855	147853	187802	235521	98	120	130	177	221
11	Niphad	154990	216641	291669	357270	439842	144	206	277	339	417
12	Sinnar	133403	163602	193078	227961	292075	100	122	144	171	216
13	Igatpuri	113251	137257	167227	202262	228208	117	134	164	198	270
14	Trimbakeshwar	N.A.	N.A.	N.A.	N.A.	136417	N.A.	N.A.	N.A.	N.A.	154
15	Devala	N.A.	N.A.	N.A.	N.A.	129988	N.A.	N.A.	N.A.	N.A.	225
	District Total	1855246	2369221	2992639	3851352	4993796	119	152	191	248	322

Source : District Census Handbook, Nashik District for 1961 and 2001.

Note : N.A.= Data is not available.

APPENDIX-B

General Landuse Pattern of Nashik District, 2010-2011

Sr. No.	Tahsils	Geographical Area	Forest Area	Irrigated Area	Un-irrigated Area
1	Nashik	810.57	139.9	34.88	431.48
2	Peint	560.6	267.18	4.63	157.17
3	Dindori	1342.19	194.84	52.43	817.51
4	Surgana	845.65	456.26	1.56	338.23
5	Kalvan	859.71	320.28	26.53	434.33
6	Baglan	1477.83	416.19	118.08	730.47
7	Malegaon	1825.13	342.62	103.57	1098.64
8	Chandwad	958.75	87.044	82.36	600.56
9	Nandgaon	1089.82	259.52	32.61	627.51
10	Yevla	1064.47	111.46	52.56	658.63
11	Niphad	1053.65	19.761	345.68	475.23
12	Sinnar	1352.61	147.4	120.46	849.72
13	Igatpuri	846.32	166.31	4.53	586.24
14	Trimbakeshwar	874.7	336.68	8.30	370.25
15	Devala	568	78.09	29.17	306.99
	District Total	15530	3343.5	1017.41	8483.02

Source : Socio-economic Abstract of Nashik District for 2010-11

Note : Area is given in square kilometres

APPENDIX-C

Tribal Population Characteristics in Nashik District

Sr. No.	Tahsils	Tribal Population		Percent		Growth		Density		Sex ratio	
		1981	2001	1981	2001	81-91	91-01	1981	2001	1981	2001
1	Nashik	81816	131132	13.05	9.95	43.49	11.7	65	162	949	932
2	Peint	92707	89926	93.68	92.92	31.11	-26	99	161	987	998
3	Dindori	80783	139033	49.28	52.52	33.86	28.57	61	103	979	971
4	Surgana	76024	137602	91.77	94.81	37.73	31.41	91	163	983	995
5	Kalvan	77179	108955	49.45	65.79	33.69	5.596	65	127	980	1000
6	Baglan	72602	107288	29.84	34.42	27.59	15.82	45	73	983	969
7	Malegaon	45047	65769	8.71	8.33	22.33	19.35	23	36	987	970
8	Chandwad	18576	36945	13.95	18.01	39.79	42.27	19	39	998	983
9	Nandgaon	17276	26997	10.2	11.42	28.96	21.18	16	25	989	950
10	Yevla	10075	21378	6.81	9.08	50.99	40.53	9.5	20	979	981
11	Niphad	43524	79751	14.92	18.13	32.41	38.39	41	76	987	976
12	Sinnar	19456	35456	10.08	12.14	33.7	36.3	15	26	966	976
13	Igatpuri	66582	86370	39.82	37.85	22.04	6.294	65	102	983	978
14	Trimbakeshwar	N.A.	106315	N.A.	77.93	N.A.	N.A.	N.A.	120	N.A.	990
15	Devala	N.A.	21354	N.A.	16.46	N.A.	N.A.	N.A.	37	N.A.	960
District Total		701647	1194271	23.45	23.92	32.7	28.27	45	77	979	976

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : N.A.= Data is not available.

APPENDIX-D

Male-Female Tribal Population in Nashik District

Sr. No.	Tahsils	1981			1991			2001		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Nashik	41970	39846	81816	61341	56058	117399	67857	63275	131132
2	Peint	46656	46051	92707	60975	60577	121552	45007	44919	89926
3	Dindori	40826	39957	80783	54684	53456	108140	70526	68507	139033
4	Surgana	38345	37679	76024	52545	52163	104708	68969	68633	137602
5	Kalvan	38972	38207	77179	51739	51442	103181	54464	54491	108955
6	Baglan	36610	35992	72602	47612	45018	92630	54488	52800	107288
7	Malegaon	22672	22375	45047	28352	26753	55105	33392	32377	65769
8	Chandwad	9297	9279	18576	13138	12830	25968	18632	18313	36945
9	Nandgaon	8686	8590	17276	11541	10738	22279	13846	13151	26997
10	Yevla	5091	4984	10075	7910	7302	15212	10792	10586	21378
11	Niphad	21901	21623	43524	29276	28350	57626	40351	39400	79751
12	Sinnar	9896	9560	19456	13358	12655	26013	17946	17510	35456
13	Igatpuri	33581	33001	66582	41075	40181	81256	43675	42695	86370
14	Trimbakeshwar	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	53432	52883	106315
15	Devala	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	10894	10460	21354
District Total		354503	347144	701647	473546	457523	931069	604271	590000	1194271

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : N.A.= Data is not available.

APPENDIX-E

Rural and Urban Tribal Population in Nashik District

Sr. No.	Tahsils	1981			1991			2001		
		Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
1	Nashik	55242	26574	81816	65982	51417	117399	55825	75307	131132
2	Peint	92707	0	92707	121552	0	121552	89926	0	89926
3	Dindori	80783	0	80783	108140	0	108140	139033	0	139033
4	Surgana	76024	0	76024	104708	0	104708	134440	3162	137602
5	Kalvan	77179	0	77179	103181	0	103181	108955	0	108955
6	Baglan	71468	1134	72602	90517	2113	92630	104297	2991	107288
7	Malegaon	39214	5833	45047	48120	6985	55105	58456	7313	65769
8	Chandwad	17700	876	18576	24404	1564	25968	36945	0	36945
9	Nandgaon	14649	2627	17276	19074	3205	22279	22783	4214	26997
10	Yevla	9148	927	10075	13893	1319	15212	19943	1435	21378
11	Niphad	39894	3630	43524	53685	3941	57626	75541	4210	79751
12	Sinnar	18324	1132	19456	24556	1457	26013	33609	1847	35456
13	Igatpuri	65619	963	66582	79281	1975	81256	81761	4609	86370
14	Trimbakeshwar	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	103191	3124	106315
15	Devala	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	21354	0	21354
	District Total	657951	43696	701647	857093	73976	931069	1086059	108212	1194271

Source : District Census Handbook, Nashik District for 1981 and 2001.

Note : N.A.= Data is not available.

APPENDIX-F

Age-sex Structure in Nashik District

Age Groups	1991			2001		
	Persons	Males	Females	Persons	Males	Females
0-4	504810	259090	245720	555171	289333	265838
5-9	531004	273551	257453	569726	294405	275321
10-14	467927	244312	223615	612139	320551	291588
15-19	344659	189561	155098	517134	284360	232774
20-24	333216	167148	166068	464029	250327	213702
25-29	314184	155794	158390	401766	203225	198541
30-34	267181	137639	129542	364165	185102	179063
35-39	238572	125227	113345	343313	175413	167900
40-44	190725	99901	90824	269967	146061	123906
45-49	167300	85808	81492	219046	115120	103926
50-54	131853	66695	65158	161683	86759	74924
55-59	107389	54845	52544	128075	63158	64917
60-64	96408	48318	48090	124941	54518	70423
65-69	62407	31327	31080	118803	54125	64678
70-74	40930	19870	21060	70839	33845	36994
75-79	18027	8917	9110	30064	14399	15665
80+	21690	10070	11620	31497	14145	17352
Age not stated	13070	6900	6170	11438	6066	5372
All ages	3851352	1984973	1866379	4993796	2590912	2402884

Source : District Census Handbook, Nashik District for 1991 and 2001.

APPENDIX-G

Age-sex Structure of Tribal Population in Nashik District, 2001

Age Groups	Total			Rural			Urban		
	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
0-4	162980	82546	80434	149729	75714	74015	13251	6832	6419
5-9	165507	84484	81023	151902	77591	74311	13605	6893	6712
10-14	154406	81784	72622	140070	74119	65951	14336	7665	6671
15-19	116269	61209	55060	104397	54847	49550	11872	6362	5510
20-24	98015	48335	49680	87115	42668	44447	10900	5667	5233
25-29	85866	42540	43326	76504	37913	38591	9362	4627	4735
30-34	78927	38058	40869	70775	33848	36927	8152	4210	3942
35-39	77039	38709	38330	69653	34856	34797	7386	3853	3533
40-44	60772	31411	29361	55284	28393	26891	5488	3018	2470
45-49	50937	26621	24316	46800	24468	22332	4137	2153	1984
50-54	36889	18973	17916	33901	17382	16519	2988	1591	1397
55-59	30744	14919	15825	28685	13925	14760	2059	994	1065
60-64	29036	12773	16263	27146	11978	15168	1890	795	1095
65-69	23154	10819	12335	21837	10287	11550	1317	532	785
70-74	12820	6039	6781	12033	5712	6321	787	327	460
75-79	4832	2223	2609	4562	2111	2451	270	112	158
80+	4761	2118	2643	4426	1972	2454	335	146	189
Age not stated	1317	710	607	1240	671	569	77	39	38
All ages	1194271	604271	590000	1086059	548455	537604	108212	55816	52396

Source : District Census Handbook, Nashik District for 2001.

APPENDIX-H

Tribal Population Literacy in Nashik District

Sr. No.	Tahsils	1981			1991			2001		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Nashik	31.14	11.44	21.55	49.52	24.73	37.44	67.2	42.8	55.4
2	Peint	22.93	7.34	15.18	39.85	17.31	28.62	67.1	42.9	55.0
3	Dindori	31.84	10.04	21.06	48.03	21.27	34.83	72.2	47.2	59.9
4	Surgana	22.16	6.725	14.51	38.47	17.70	28.14	62.3	40.2	51.2
5	Kalvan	22.75	8.627	15.76	36.26	18.01	27.16	54.7	33.9	44.3
6	Baglan	22.07	7.927	15.06	33.06	14.89	24.12	54.3	31.9	43.3
7	Malegaon	20.59	5.926	13.31	33.51	12.93	23.38	51.0	28.3	39.8
8	Chandwad	22.54	4.688	13.63	41.62	15.14	28.34	59.6	35.2	47.5
9	Nandgaon	23.39	6.659	15.07	35.78	14.88	25.50	49.2	23.0	36.3
10	Yevla	25.50	8.226	16.95	36.86	14.13	25.82	52.3	25.8	39.2
11	Niphad	28.04	7.783	17.97	46.53	20.54	33.73	62.3	38.8	50.7
12	Sinnar	25.51	7.061	16.44	45.34	16.81	31.49	63.3	35.7	49.7
13	Igatpuri	25.32	6.697	16.09	42.81	16.30	29.59	65.1	36.2	50.9
14	Trimbakeshwar	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	56.7	32.4	44.6
15	Devala	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	54.5	32.9	44.0
District Total		25.24	8.05	16.73	41.17	18.25	29.84	61.2	37.2	49.3

Source: District Census Handbook, Nashik District for 1981, 1991 and 2001.

Note: (i) For 1991 and 2001 excluding children below 7 years. (Effective Literacy), (ii) For 1981 including children below 7 years. (District Effective Literacy was 53.33 in 1981) (iii) N.A.= Data is not available.

APPENDIX-I

Scheduled Tribal Population in Nashik District, 2001

Sr. No	Name of Castes	Population	Sr. No	Name of Castes	Population
1	Koli Mahadev etc.	394631	22	Korku etc.	34
2	Kokna etc.	360755	23	Kol	33
3	Bhil etc.	300495	24	Binjhwar	30
4	Thakur etc.	62627	25	Dhanwar	28
5	Varli	57131	26	Kondh etc.	23
6	Kathodi etc.	7194	27	Parja	18
7	Pardhi etc.	3566	28	Patelia	15
8	Gond Rajgond etc.	2694	29	Bharia Bhumia etc.	14
9	Halba etc.	1816	30	Baiga	11
10	Koli Dhor etc.	699	31	Barda	11
11	Naikda etc.	377	32	Bhattra	9
12	Dhanka etc.	372	33	Bavacha etc.	6
13	Koli Malhar	366	34	Khairwar	6
14	Gamit etc.	340	35	Kamar	5
15	Andh	193	36	Nagesia etc.	5
16	Generic Tribes etc.	154	37	Rathawa	5
17	Kawar etc.	147	38	Bhaina	4
18	Kolam etc.	143	39	Chodhara	4
19	Pardhan etc.	132	40	Dhodia	4
20	Oraon etc.	113	41	Dubla etc.	4
21	Bhunjia	57	District Total		1194271

Source: District Census Handbook, Nashik District for 2001.

APPENDIX-J

Education Characteristics of Tribal Population 2001.

Educational Level	Persons	Males	Females
Illiterate	706064	300124	405940
Literate	488207	304147	184060
Literate without educational level	13952	8469	5483
Below primary	224711	130868	93843
Primary	128861	79281	49580
Middle	55514	37251	18263
Matric/Secondary	42335	30234	12101
Higher secondary/Intermediate	14518	11071	3447
Non-technical diploma or	9	7	2
Technical diploma or certificate	1280	1167	113
Graduate & above	7026	5798	1228
Unclassified	1	1	0
Total	1194271	604271	590000

Source : District Census Handbook, Nashik District, 2001.

APPENDIX-K

Age Groups and Tribal Education 2001

Age Groups	Male	Female	Total
0-5	1,697	1,683	3380
6-14	1,07,360	88,693	196053
15-19	22,391	11,321	33712
20-24	4,643	1,271	5914
25+	986	605	1591
Age not stated	17	2	19
All ages	1,37,094	1,03,575	2,40,669

Source : District Census Handbook, Nashik District, 2001.

APPENDIX-L

Trend of In-migrants Tribal Population in Nashik District, 2001

Sr. No.	Name of Districts	Total Population			Rural Population			Urban Population		
		Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
1	Dhule	9,996	4,079	5,917	7,230	2,663	4,567	2,766	1,416	1,350
2	Jalgaon	8,159	3,776	4,383	6,073	2,717	3,356	2,086	1,059	1,027
3	Ahmadnagar	8,086	2,844	5,242	6,645	2,169	4,476	1,441	675	766
4	Thane	4,626	1,499	3,127	3,570	1,070	2,500	1,056	429	627
5	Aurangabad	3,254	1,335	1,919	2,869	1,161	1,708	385	174	211
6	Nandurbar	1,166	615	551	576	257	319	590	358	232
7	Mumbai	565	279	286	187	105	82	378	174	204
8	Nagpur	472	223	249	54	20	34	418	203	215
9	Pune	440	191	249	117	57	60	323	134	189
10	Jalna	356	180	176	110	49	61	246	131	115
11	Parbhani	296	148	148	47	23	24	249	125	124
12	Buldana	234	114	120	44	24	20	190	90	100
13	Akola	229	111	118	45	20	25	184	91	93
14	Yavatmal	221	112	109	116	61	55	105	51	54
15	Raigarh	175	97	78	116	66	50	59	31	28
16	Amravati	145	75	70	17	9	8	128	66	62
17	Solapur	123	60	63	14	7	7	109	53	56
18	Bid	92	43	49	28	11	17	64	32	32
19	Chandrapur	86	42	44	14	10	4	72	32	40
20	Nanded	81	38	43	37	12	25	44	26	18

Source : District Census Handbook, Migration Table, Nashik District for 2001.

..... Contd.

From Appendix-L

Trend of In-migrants Tribal Population in Nashik District, 2001

Sr. No.	Name of Districts	Total Population			Rural Population			Urban Population		
		Persons	Males	Females	Persons	Males	Females	Persons	Males	Females
21	Bhandara	60	44	16	8	7	1	52	37	15
22	Satara	60	33	27	19	9	10	41	24	17
23	Washim	57	33	24	19	11	8	38	22	16
24	Wardha	50	19	31	10	6	4	40	13	27
25	Ratnagiri	44	23	21	28	16	12	16	7	9
26	Gondiya	37	26	11	9	5	4	28	21	7
27	Hingoli	33	20	13	4	4	0	29	16	13
28	Latur	33	16	17	6	3	3	27	13	14
29	Sangli	28	14	14	8	3	5	20	11	9
30	Kolhapur	20	12	8	2	1	1	18	11	7
31	Osmanabad	13	7	6	2	2	0	11	5	6
32	Sindhudurg	10	5	5	4	2	2	6	3	3
33	Gadchiroli	7	1	6	2	0	2	5	1	4
34	Unclassifiable	2,058	845	1,213	1,905	768	1,137	153	77	76
	Total	41,312	16959	24353	29935	11348	18587	11377	5611	5766

Source : District Census Handbook, Migration Table, Nashik District for 2001.

APPENDIX-M

Tribal Population Main Workers Occupational Structure, Nashik District

Sr. No.	Tahsils	Cultivators		Agricultural Labours		Household Industry		Other Workers	
		1981	2001	1981	2001	1981	2001	1981	2001
1	Nashik	14239	7699	12946	10600	199	125	8659	3796
2	Peint	34450	24463	13987	12613	68	256	1613	2081
3	Dindori	21432	29927	17572	30521	90	383	2348	3914
4	Surgana	30024	36993	8424	19157	168	251	1767	2308
5	Kalvan	17884	34888	15729	18684	52	221	1619	2954
6	Baglan	11409	19016	24095	30173	158	236	1568	1912
7	Malegaon	3084	2731	19319	18436	127	237	2442	2453
8	Chandwad	1493	3327	6847	13635	32	54	1281	1335
9	Nandgaon	1844	2091	5397	7485	47	78	975	691
10	Yevla	754	1058	4201	7487	30	49	384	685
11	Niphad	1496	2537	21333	29535	73	258	1684	3774
12	Sinnar	3286	2883	5529	8748	58	136	1417	1943
13	Igatpuri	21109	18414	6655	8492	68	203	2554	3893
14	Trimbakeshwar	0	30350	0	11735	0	192	0	2036
15	Deola	0	1207	0	8780	0	38	0	632
District Total		162504	217584	162034	236081	1170	2717	28311	34407

Source : District Census Handbook, Nashik District for 2001.

APPENDIX-N

Tribal Population Occupational Structure, Nashik District, 1981.

Sr. No.	Tahsils	Main Workers			Marginal Workers			Non Workers		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
1	Nashik	36043	22858	13185	3038	540	2498	42735	18572	24163
2	Peint	50118	27783	22335	3998	454	3544	38591	18419	20172
3	Dindori	41442	23889	17553	4508	277	4231	34833	16660	18173
4	Surgana	40383	22809	17574	3941	267	3674	31700	15269	16431
5	Kalvan	35284	21876	13408	7074	513	6561	34821	16583	18238
6	Baglan	37230	20856	16374	3169	458	2711	32203	15296	16907
7	Malegaon	24972	13500	11472	671	166	505	19404	9006	10398
8	Chandwad	9653	5608	4045	1294	100	1194	7629	3589	4040
9	Nandgaon	8263	4905	3358	764	99	665	8249	3682	4567
10	Yevla	5369	3012	2357	282	43	239	4424	2036	2388
11	Niphad	24586	12852	11734	724	130	594	18214	8919	9295
12	Sinnar	10290	5690	4600	440	73	367	8726	4133	4593
13	Igatpuri	30386	18417	11969	4026	569	3457	32170	14595	17575
14	Trimbakeshwar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
15	Devala	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	District Total	354019	204055	149964	33929	3689	30240	313699	146759	166940

Source : District Census Handbook, Nashik District for 1981.

Note : The Boundary of Villages were Reframed hence, Population of Trimbakeshwar and Devla are not available.

APPENDIX-O

Tribal Population Occupational Structure, Nashik District, 2001

Sr. No.	Tahsils	Main Workers			Marginal Workers			Non Workers		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
1	Nashik	22220	12829	9391	5279	2085	3194	29011	14266	14745
2	Peint	39413	20647	18766	8676	3327	5349	41837	21033	20804
3	Dindori	64745	34658	30087	8758	3100	5658	65530	32768	32762
4	Surgana	58709	31526	27183	14632	5088	9544	64261	32355	31906
5	Kalvan	56747	29356	27391	5205	1909	3296	47003	23199	23804
6	Baglan	51337	27051	24286	6614	2178	4436	46346	23747	22599
7	Malegaon	23857	13612	10245	6330	2201	4129	30091	14782	15309
8	Chandwad	18351	9693	8658	2583	863	1720	16011	8076	7935
9	Nandgaon	10345	5393	4952	1894	774	1120	10544	5497	5047
10	Yevla	9279	4906	4373	1651	625	1026	9013	4519	4494
11	Niphad	36104	19427	16677	6366	2691	3675	37281	18233	19048
12	Sinnar	13710	7764	5946	3324	1238	2086	16576	8006	8569
13	Igatpuri	31002	17820	13182	11288	3765	7523	41021	20531	20490
14	Trimbakeshwar	44313	24040	20273	9019	3390	5629	48959	24401	24558
15	Deola	10657	5712	4945	1148	369	779	9549	4813	4736
	District Total	490789	264434	226355	92767	33603	59164	513033	256226	256806

Source : District Census Handbook, Nashik District for 2001

APPENDIX-P

QUESTIONNAIRE FOR TRIBAL STUDY IN NASHIK DISTRICT

Household No : [ ]

1) Name of Family Head - _____

2) Name of Village - _____ Tahsil - _____

District - Nashik

3) Family Details -

Sr. No.	Name of Persons	Relation with F.H	Sex	Age	Marital Status	Education	Occupation
1		Family Head					
2							
3							
4							
5							
6							
7							
8							
9							
10							
Total		-	M= F =	-	M= U=	L= Ill=	

4) Is their birth during the last year?
1) Yes 2) No

5) Is their death during the last year? If yes age.
1) Yes 2) No

6) Name of religion you belong?
1) Hindu 2) Muslims 3) Christian 4) Shikh
5) Buddhist 6) Others

7) Name of the caste you belong?
1) Open 2) SC 3) ST 4) OBC
5) Others

8) Name of the sub-caste? if ST.
1) Koli Mahadev 2) Kokna 3) Bhil 4) Thakur
5) Varli 6) Kathodi 7) Other……

9) Mother toung you possessing?
1) Marathi 2) Hindi 3)----------

10) Type of Houses.
1) Kaccha 2) Semipakka 3) Pakka

11) How many rooms you have in your house?
1) i 2) ii 3) iii 4) iv 5) > v

12) How much is the area of your house (sq. ft.)?
1) < 100 2) 101 – 200 3) 201 – 300
4) 301 – 400 5) > 400

14) Do you have separate kitchen in your house?
1) Yes 2) No

15) Toilet facility is available in your house?
1) Within house 2) Common 3) Public 4) No facility

16) What type of fuel used for cooking?
1) Wood/ Crop residues 2) Coal/ Coke/Charcoal
3) Kerosene 4) Electricity 5) Liquid Petroleum Gas
6) Others

17) What type of accommodation do you have?
1) Owned 2) Rented per month (Rs.)_____
3) Govt. or Company's Quarters

18) Do you have electricity in your house? Are you facing the problem of power cut?
If Yes, how many hours?
1) Yes 2) No
Hours_____

19) Does the household possess any of the following articles:
1) Radio / Transistor 2) Television
3) Music systems / DVD 4) Telephone / Mobile
5) Refrigerator 6) Washing machine
7) Cooking gas 8) Sewing machine
9) Bicycle 10) Scooter / Two Wheeler
11) Car / Jeep / Van 12) Tempo / Trucks
13) Any others (specific) _____

20) Which was your last residence place? If migrant.
1) Within tahsils 2) Within district 3) With in state
4) With in nation 5) no migration

21) How many people from your family migrated out? Where?
1) _____ 2) Place-_____

22) Are you filling safety at this place?
1) Yes 2) No

23) Name the first aids you use in an emergency?
1) Medicinal plants 2) Tablets 3) First aid box.

24) Is there an availability of Primary health center in village?
1) Yes 2) No

25) Do you prefer maternity hospital during delivery?
1) Yes 2) No

26) Have you heard about HIV/AIDS?
1) Yes 2) No

27) From where did you hear about AIDS?
1) TV/Radio 2) Books 3) Doctor's
4) Friends 5) Posters

28) Do you know how HIV/AIDS transmit?
1) Sexual relation 2) Blood transfusion 3) By mother
4) Any others

29) Which conception control for family planning did you use?
1) Condom 2) Calendar method 3) The diaphragm
4) IUD 5) Oral (pill) 6) Male sterilization
7) Female sterilization 8) Nothing

30) What is the main source of drinking water for your household?
1) Private 2) Common 3) Public
4) Hand pump 5) Well 6) Others_____

31) What do you do to purify the drinking water?
1) Strain by cloth/water filter 2) Boiling
3) Others 4) Nothing

32) Are you having bad habits?
1) Chewing tobacco 2) Smoking 3) Alcohol
4) Drugs 5) Redline

33) Which types of school levels are available within 3km. Radius?
1) Primary 2) Secondary 3) Higher secondary
4) College 5) Non

34) Are you satisfied with your socio- economic condition?
1) Yes 2) No

35) Which educational materials are available?
1) Newspapers 2) Journals 3) books
4) Educational channel (T.V.) 5) Internet

36) What are the educational problems?

1) _____

2) _____

37) Which is your occupation?
1) Agriculture 2) Labour 3) Forest
4) Own business 5) Service 6) Others

38) Yearly total income from all sources in lac.
1) <1 2) 1-3 3) 3-5 4) 5-10 5) >10

39) How much land is own by you? In Acre.
1) <1 2) 1-3 3) 3-5 4) 5-10 5) >10
6) No

40) Are you working as a labor in your farm?
1) Yes 2) No

41) Is irrigation facility available in your farm?
1) Yes 2) No

42) If yes, types of irrigations.
1) Well 2) Tube well 3) Canal 4) River 5) Non

43) Give name of produced crops in your farm?

1)_____ 2)_____

3)_____ 4)_____

44) Do you use fertilizer in your farm?

1) Yes 2)No

45) If yes, type of fertilizers.

1) Bio fertilizer 2) Chemical fertilizer 3)Both

46) Do you use Pesticides in your farm?

1) Yes 2) No

47) Are you satisfied with your present occupation?

1) Yes 2) No

48) How much annual gross income you get from agriculture? In lac

1) <1 2) 1-2 3) 2-5 4) 5-10 5) >10

49) What is an annual net income from agriculture? In lac

1) <1 2) 1-2 3) 2-5 4) 5-10 5) >10

50) Any Suicide from 14 to 59 year age group from last 3 year in your household? If yes, what is reason?

1) Yes 2) No Reason:-

51) Are you fill satisfy in your society? If no what are the reasons?

1) Yes 2) No Reason:-

52) Name the types of expectations from the government?

1) Economic package 2) Education 3) Social facility

4) Employment 5) Other_____

53) What are the identical tribal problems?

A)

B)

C)

D)

54) Suggest the measures for development of your area or community?

A)

B)

C)

D)

Name of Surveyor:_____

Signature: _____

Date: /09/2013.

APPENDIX-Q

A) QUESTIONNAIRE FOR SARPANCH OR GRAMSEVAK

1) Name of village-
2) Tahsil-
3) Distance from tahsil……Km. and District……Km.
4) Households- (2001)- …… (2011)- …….
5) Population- (2011) Male- ……..Females-……
6) Tribal Population- (2011) Male- ……..Females-…….
7) Education Facilities-
   a)
   b)
   c)
8) Heath facilities-
   a)
   b)
9) Do you have some NGO at your village?
10) What are the problems in your village?
   a)
   b)
11) Suggest measures for development of your area or Village?
   a)
   b)

B) QUESTIONNAIRE FOR VILLAGE INFORMATION

12) Physiography and slope-
13) River-
14) Forest area-
15) Latitudes and longitude coordinates-
16) Altitude from mean sea level in meters-
17) Types of roads-
18) Soil color-
19) Settlement types-

Name of Sarpanch or Gramsevak:……

Signature:……

Date: / /2013.

EXTRA

Formulas Used to Compute for Different Variables

1	Spatial Concentration Index	$= \frac{\text{Tahsil Population /Tahsil Area in square kilometer}}{\text{District Population/District Area in square kilometer}}$
2	Location Quotient Index	$= \frac{\text{Percent of tribal population to total population in a tahsil}}{\text{Percent of tribal population to total population in the district}}$
3	Population Growth Rate	$= \frac{\text{Population of current decade} - \text{Population of previous decade}}{\text{Population of previous decade}} X\ 100$
4	Population Projection (Crude Method)	$R = 1/n * ((P_n - P_o)\ x\text{^}2)/(P_o)\ X100$
5	(Compound Method)	$R = [(P_n / P_o)^{1/n} - 1] \times 100$ $P_n = P_o(1+R/100)^n$ Whereas: R = annual rate of growth P_n = population in the current year P_o = population in the base year n = number of intermediary years.
6	Young age Dependency Ratio	$= \frac{\text{Population aged } (0-14) \text{years}}{\text{Population aged } (15-59)} X100$
7	Old age Dependency Ratio	$= \frac{\text{Population aged } 60+ \text{years}}{\text{Population aged } (15-59)} X100$
8	Total Dependency Ratio	$= \frac{\text{Population aged } (0-14) \text{years and } 60+ \text{years}}{\text{Population aged } (15-59)} X100$
9	Index of Ageing	$= \frac{\text{Population aged } 60+ \text{years}}{\text{Population aged } (0-14)} X100$

10	Child Women Ratio	$= \frac{P\ (0-4)}{F\ (15-44)} X\ 1000$

Whereas :

P 0-4 = The number of children of both sexes under the age of 5 years.

F 15-44 = The number of women between the ages of 15 and 44 years.

11	Crude Activity Rate (CAR)	$= \frac{\text{Economically Active Population}}{Total\ Population} X\ 100$
12	General Activity Rate (GAR)	$= \frac{\text{Economically Active Population}}{Population\ Aged\ (15-59)} X\ 100$
13	Percentage	$= \frac{a}{b} X\ 100$
14	Ratio	$= \frac{a}{b}$
15	Sex Ratio	$= \frac{\text{Number of Males}}{\text{Number of Females}}$ X 1000
16	Crude Literacy Rate	$= \frac{\text{Number Literate Population}}{\text{Total Population}}$ X 100

EXTRA

Caste-wise Scheduled Tribes in Nashik District, 2001

Sr. No.	Name of Scheduled Tribe	Area	Persons	Males	Females	Sr. No.	Name of Scheduled Tribe	Area	Persons	Males	Females
1	Andh	Total	193	99	94	8	Bhil etc.	Total	300495	152130	148365
	Andh	Rural	119	60	59		Bhil etc.	Rural	281508	142451	139057
	Andh	Urban	74	39	35		Bhil etc.	Urban	18987	9679	9308
2	Baiga	Total	11	8	3	9	Bhunjia	Total	57	28	29
	Baiga	Rural	4	3	1		Bhunjia	Rural	0	0	0
	Baiga	Urban	7	5	2		Bhunjia	Urban	57	28	29
3	Barda	Total	11	6	5	10	Binjhwar	Total	30	19	11
	Barda	Rural	0	0	0		Binjhwar	Rural	30	19	11
	Barda	Urban	11	6	5		Binjhwar	Urban	0	0	0
4	Bavacha etc.	Total	6	4	2	11	Chodhara	Total	4	3	1
	Bavacha etc.	Rural	1	1	0		Chodhara	Rural	3	3	0
	Bavacha etc.	Urban	5	3	2		Chodhara	Urban	1	0	1
5	Bhaina	Total	4	2	2	12	Dhanka etc.	Total	372	210	162
	Bhaina	Rural	0	0	0		Dhanka etc.	Rural	57	29	28
	Bhaina	Urban	4	2	2		Dhanka etc.	Urban	315	181	134
6	Bharia Bhumia etc.	Total	14	9	5	13	Dhanwar	Total	28	20	8
	Bharia Bhumia etc.	Rural	1	1	0		Dhanwar	Rural	9	8	1
	Bharia Bhumia etc.	Urban	13	8	5		Dhanwar	Urban	19	12	7
7	Bhattra	Total	9	4	5	14	Dhodia	Total	4	3	1
	Bhattra	Rural	3	1	2		Dhodia	Rural	3	2	1
	Bhattra	Urban	6	3	3		Dhodia	Urban	1	1	0

Source : District Census Handbook, Nashik District for 2001

Caste-wise Scheduled Tribes in Nashik District, 2001

Sr. No.	Name of Scheduled Tribe	Area	Persons	Males	Females	Sr. No.	Name of Scheduled Tribe	Area	Persons	Males	Females
15	Dubla etc.	Total	4	4	0	24	Kol	Total	33	18	15
	Dubla etc.	Rural	1	1	0		Kol	Rural	1	1	0
	Dubla etc.	Urban	3	3	0		Kol	Urban	32	17	15
16	Gamit etc.	Total	340	177	163	25	Kolam etc.	Total	143	77	66
	Gamit etc.	Rural	215	111	104		Kolam etc.	Rural	51	27	24
	Gamit etc.	Urban	125	66	59		Kolam etc.	Urban	92	50	42
17	Gond Rajgond etc.	Total	2694	1520	1174	26	Koli Dhor etc.	Total	699	365	334
	Gond Rajgond etc.	Rural	592	368	224		Koli Dhor etc.	Rural	165	81	84
	Gond Rajgond etc.	Urban	2102	1152	950		Koli Dhor etc.	Urban	534	284	250
18	Halba etc.	Total	1816	926	890	27	Koli Mahadev etc.	Total	394631	200053	194578
	Halba etc.	Rural	44	24	20		Koli Mahadev etc.	Rural	340928	172809	168119
	Halba etc.	Urban	1772	902	870		Koli Mahadev etc.	Urban	53703	27244	26459
19	Kamar	Total	5	5	0	28	Koli Malhar	Total	366	220	146
	Kamar	Rural	0	0	0		Koli Malhar	Rural	117	61	56
	Kamar	Urban	5	5	0		Koli Malhar	Urban	249	159	90
20	Kathodi etc.	Total	7194	3640	3554	29	Kondh etc.	Total	23	16	7
	Kathodi etc.	Rural	6491	3292	3199		Kondh etc.	Rural	12	12	0
	Kathodi etc.	Urban	703	348	355		Kondh etc.	Urban	11	4	7
21	Kawar etc.	Total	147	93	54	30	Korku etc.	Total	34	18	16
	Kawar etc.	Rural	2	1	1		Korku etc.	Rural	22	11	11
	Kawar etc.	Urban	145	92	53		Korku etc.	Urban	12	7	5
22	Khairwar	Total	6	4	2	31	Nagesia etc.	Total	5	3	2
	Khairwar	Rural	0	0	0		Nagesia etc.	Rural	0	0	0
	Khairwar	Urban	6	4	2		Nagesia etc.	Urban	5	3	2

Source : District Census Handbook, Nashik District for 2001

Caste-wise Scheduled Tribes in Nashik District, 2001

Sr. No.	Name of Scheduled Tribe	Area	Persons	Males	Females	Sr. No.	Name of Scheduled Tribe	Area	Persons	Males	Females
23	Kokna etc.	Total	360755	181908	178847	32	Naikda etc.	Total	377	181	196
	Kokna etc.	Rural	343480	172637	170843		Naikda etc.	Rural	190	91	99
	Kokna etc.	Urban	17275	9271	8004		Naikda etc.	Urban	187	90	97
33	Oraon etc.	Total	113	59	54	38	Rathawa	Total	5	3	2
	Oraon etc.	Rural	10	4	6		Rathawa	Rural	3	2	1
	Oraon etc.	Urban	103	55	48		Rathawa	Urban	2	1	1
34	Pardhan etc.	Total	132	90	42	39	Thakur etc.	Total	62627	31470	31157
	Pardhan etc.	Rural	60	50	10		Thakur etc.	Rural	58219	29147	29072
	Pardhan etc.	Urban	72	40	32		Thakur etc.	Urban	4408	2323	2085
35	Pardhi etc.	Total	3566	1838	1728	40	Varli	Total	57131	28933	28198
	Pardhi etc.	Rural	2189	1115	1074		Varli	Rural	51453	25995	25458
	Pardhi etc.	Urban	1377	723	654		Varli	Urban	5678	2938	2740
36	Parja	Total	18	17	1	41	Generic Tribes etc.	Total	154	85	69
	Parja	Rural	0	0	0		Generic Tribes etc.	Rural	61	34	27
	Parja	Urban	18	17	1		Generic Tribes etc.	Urban	93	51	42
37	Patelia	Total	15	3	12	42	All Scheduled Tribes	Total	1194271	604271	590000
	Patelia	Rural	15	3	12		All Scheduled Tribes	Rural	1086059	548455	537604
	Patelia	Urban	0	0	0		All Scheduled Tribes	Urban	108212	55816	52396

Source : District Census Handbook, Nashik District for 2001

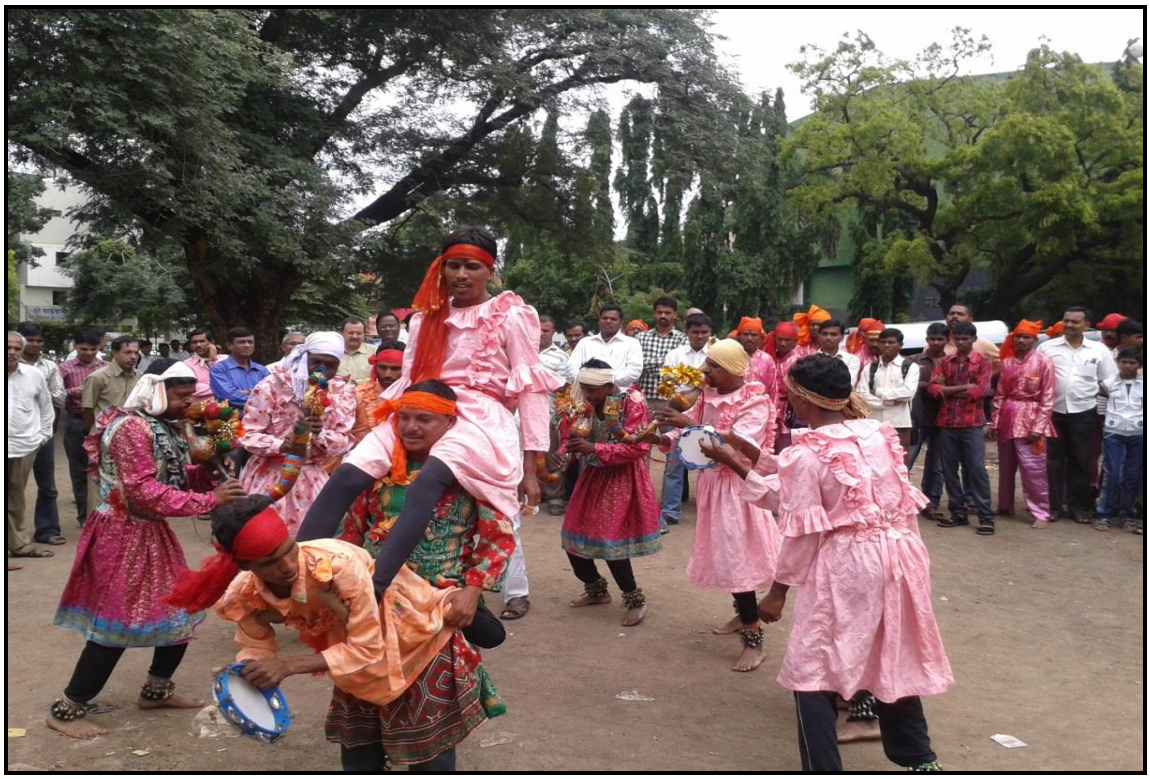

Photo-1: Typical Tribal Dance

Photo-2: Dance play by Male-Female on Basari

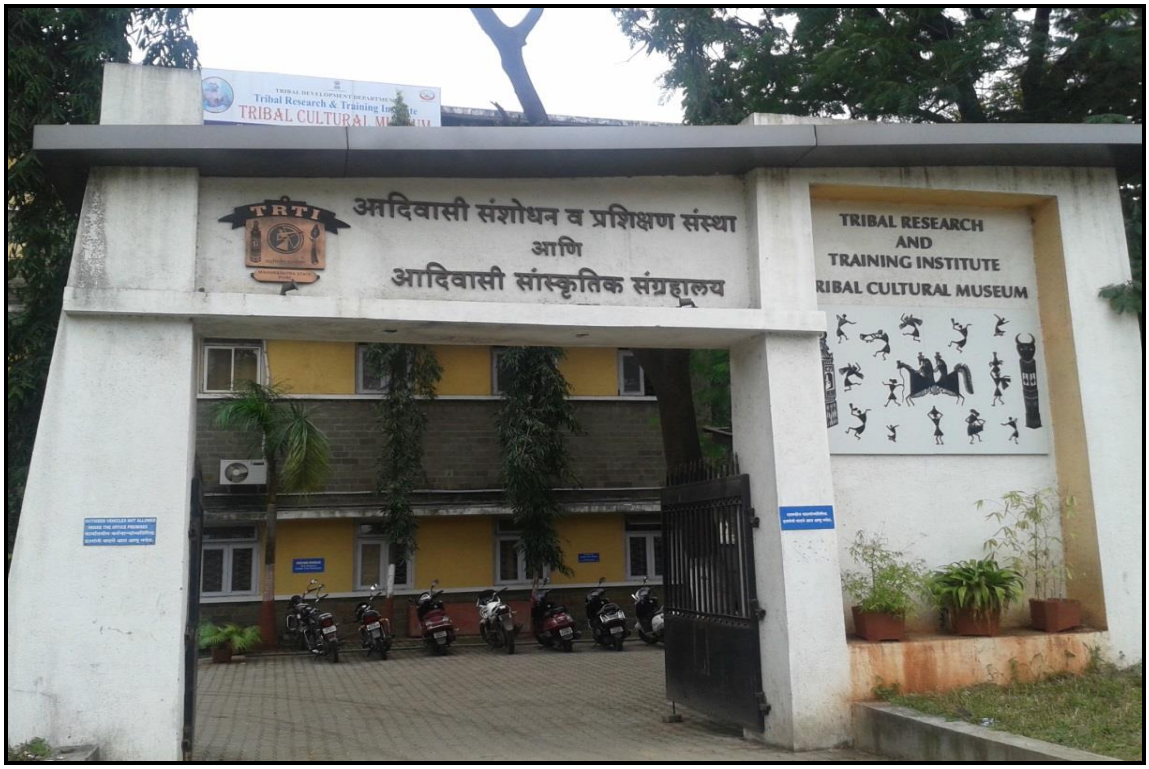

Photo-3: Building of Tribal Research and Training Institute at Pune.

Photo-4: Survey Team with Mr. Sudhakar Raut Z.P. Member
at Kotambi Village in Peint Tahsil

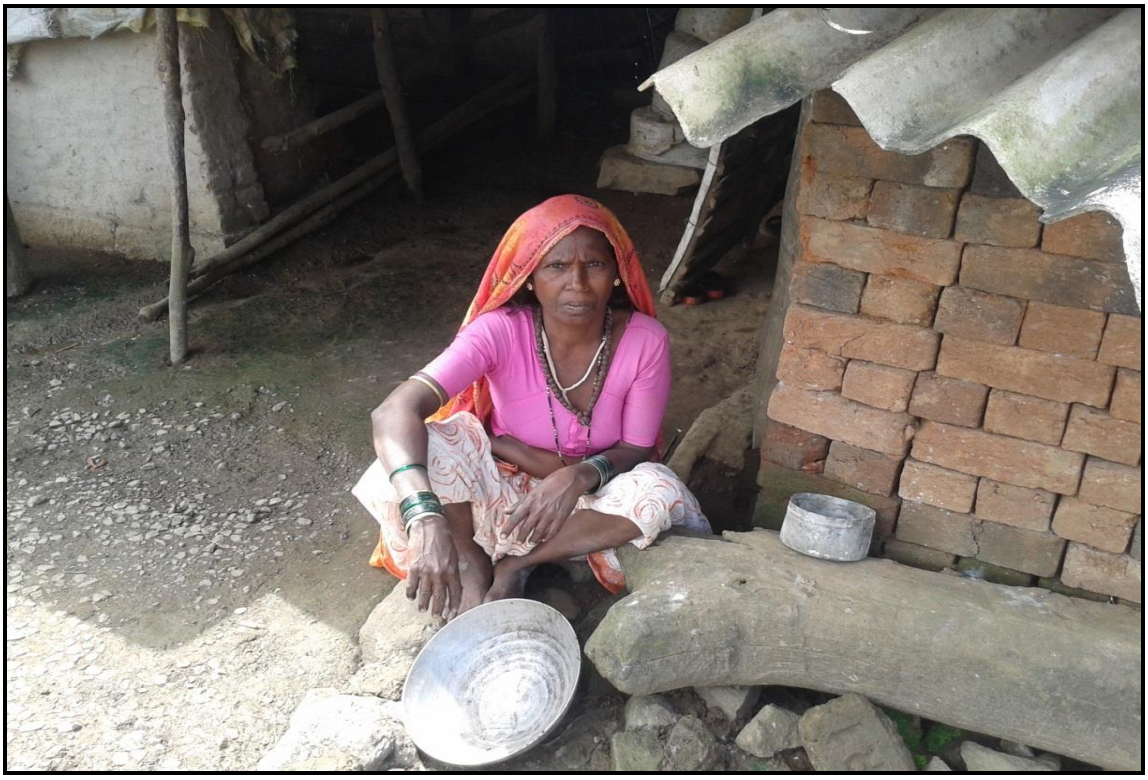

Photo-5: Typical Mahadev Koli Female at Kotambi Village in Peint Tahsil.

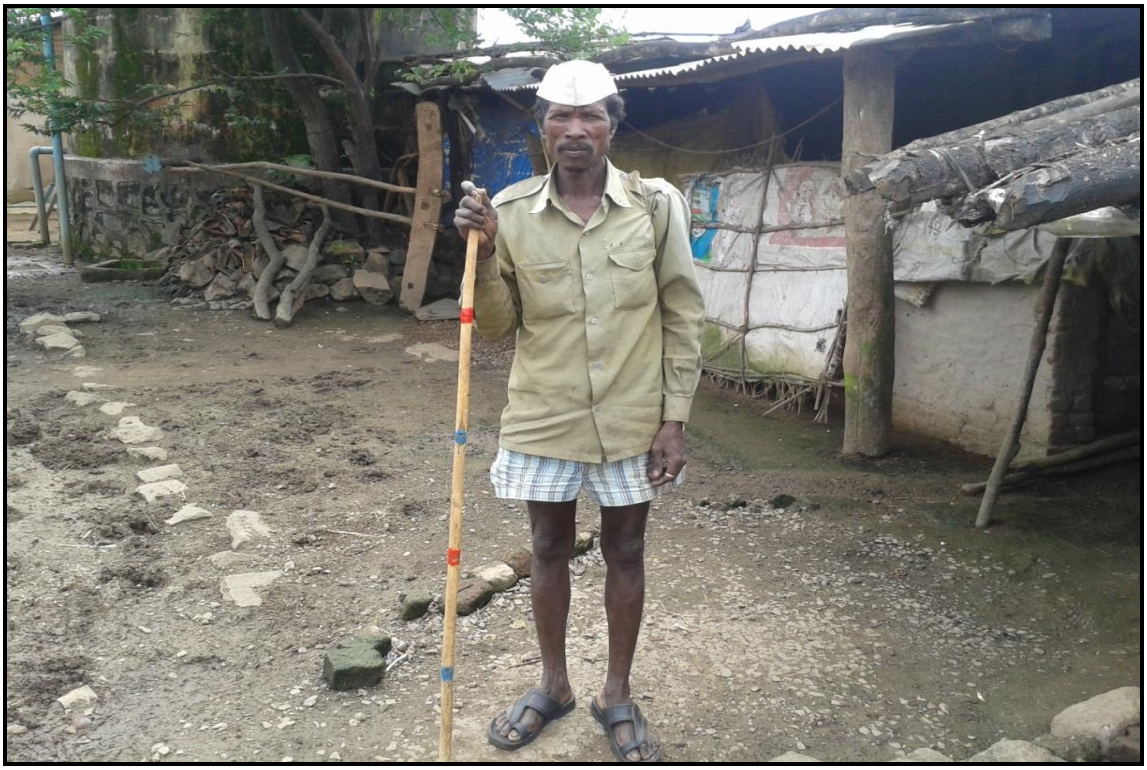

Photo-6: Typical Mahadev Koli Male at Kotambi Village in Peint Tahsil

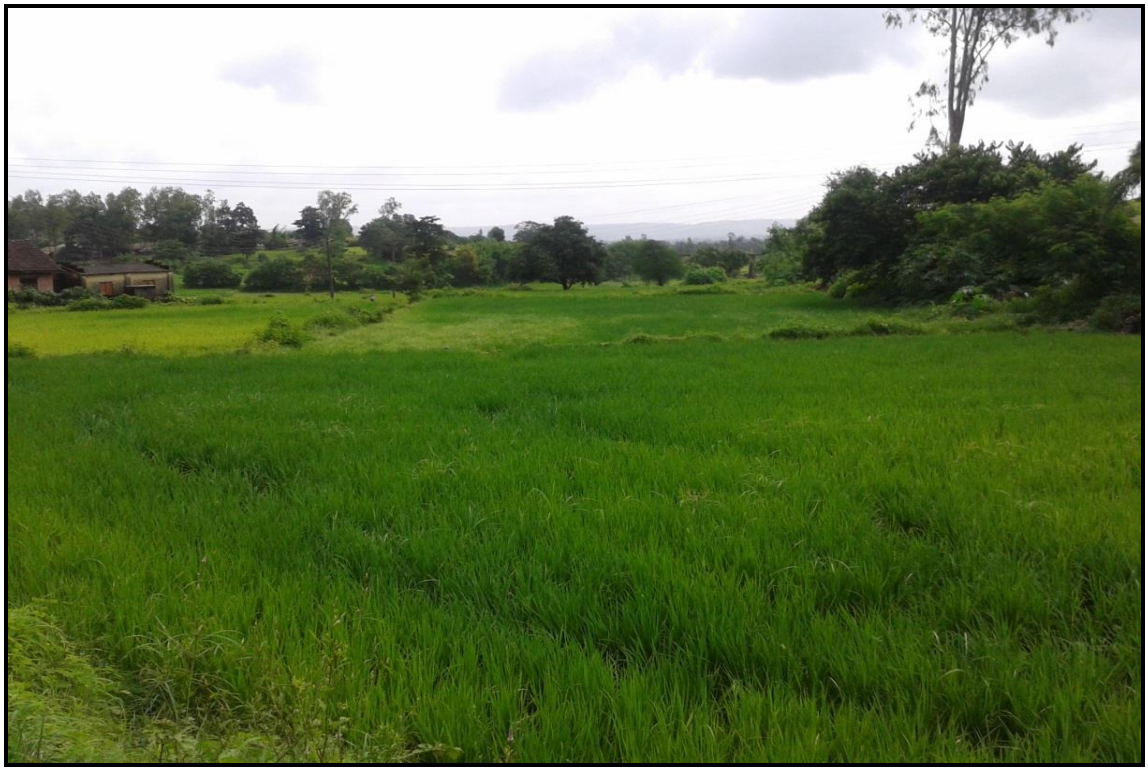

Photo-7: Paddy Cultivation (Rice) at Kotambi Village in Peint Tahsil.

Photo-8: Tribal God and Goddess- Hirva, Balveer and Kansari at Nanduri Village in Kalvan Tahsil.

Photo-9: Primary Health Centre at Nanduri Village in Kalvan Tahsil.

Photo-10: Wood Collection by Tribal at Nanduri Village in Kalvan Tahsil

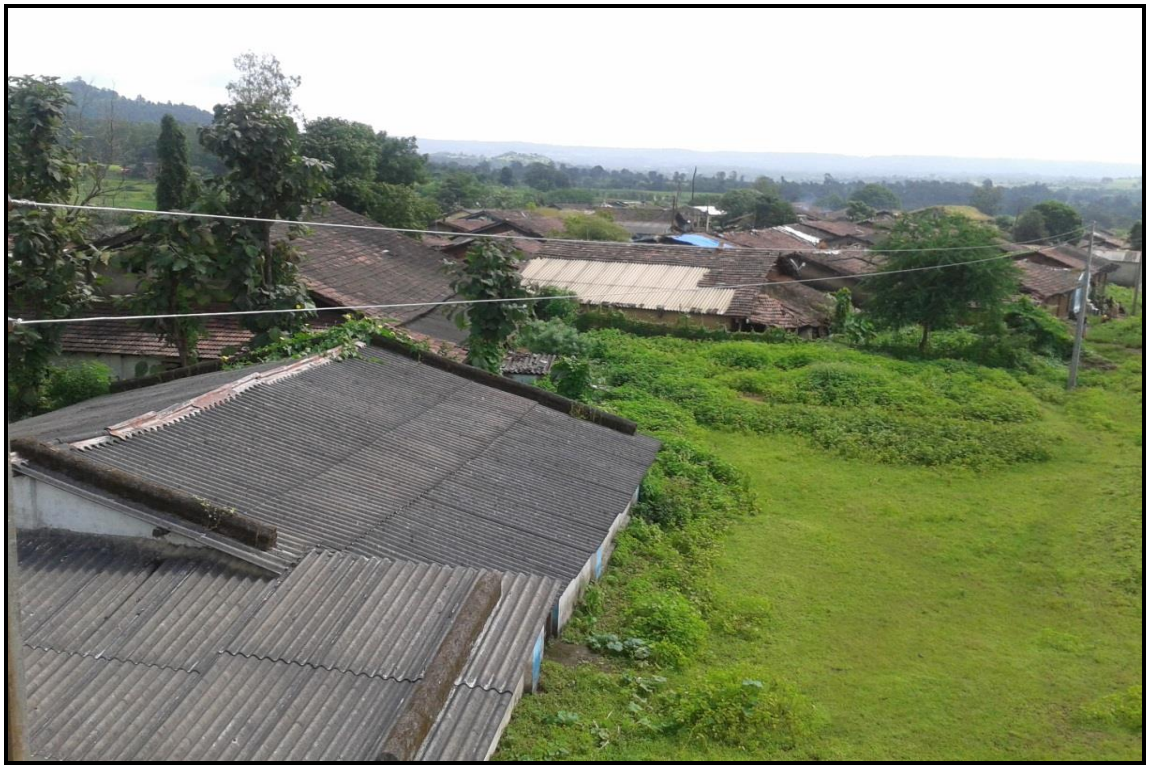

Photo-11: Tribal Settlements (Tilted Roof) at Kotambi village in Peint Tahsil.

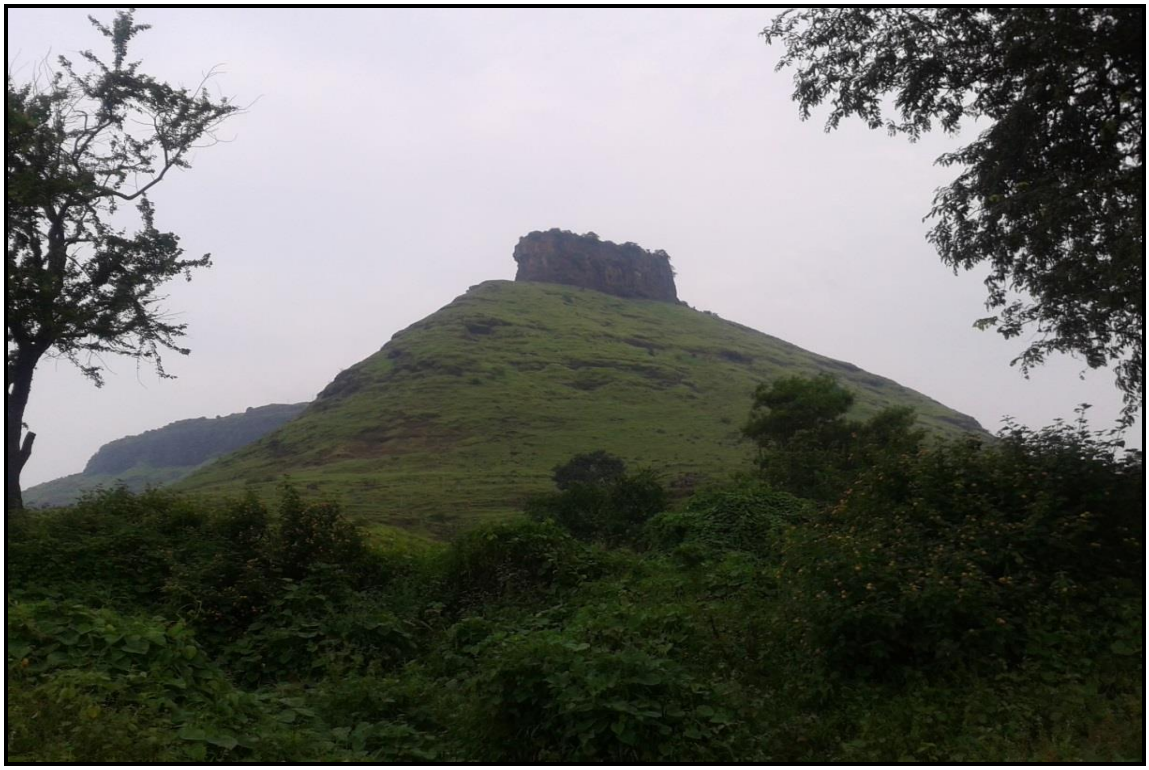

Photo-12: Ramshej Fort at Ramshej Village in Dindori Tahsil.

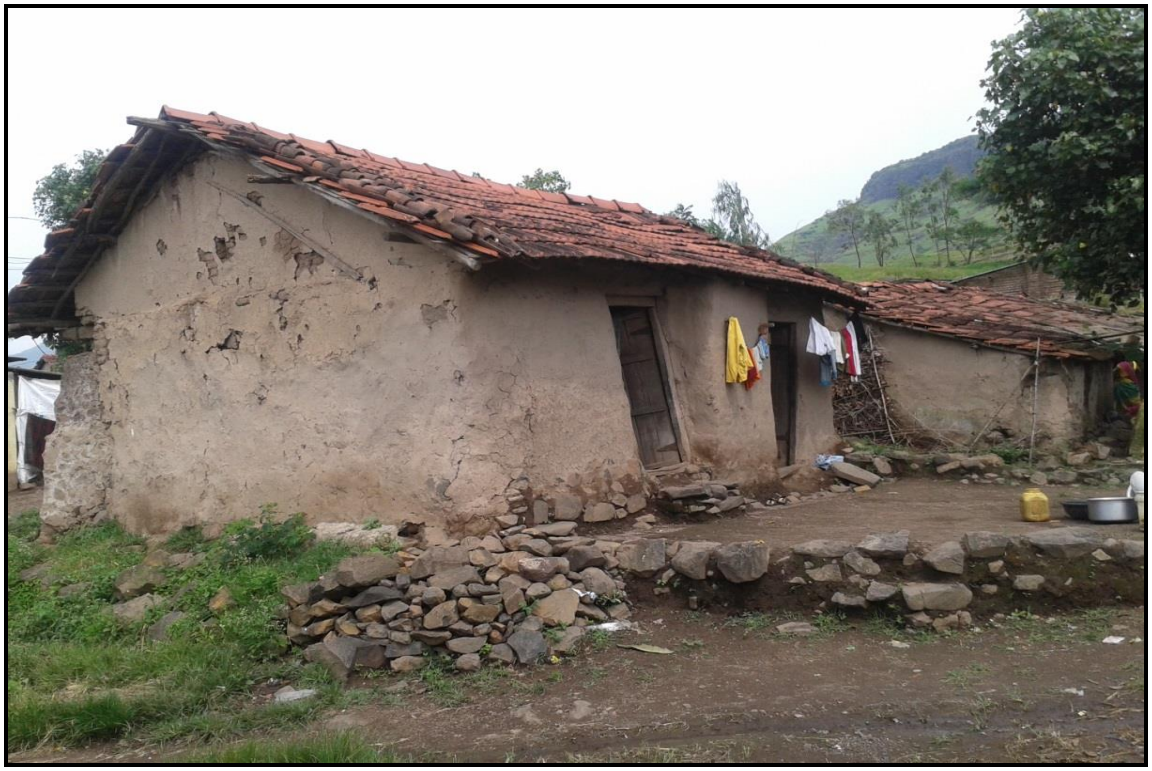

Photo-13: Typical Tribal House (Mud and Stone) at Ramshej Village in Dindori Tahsil.

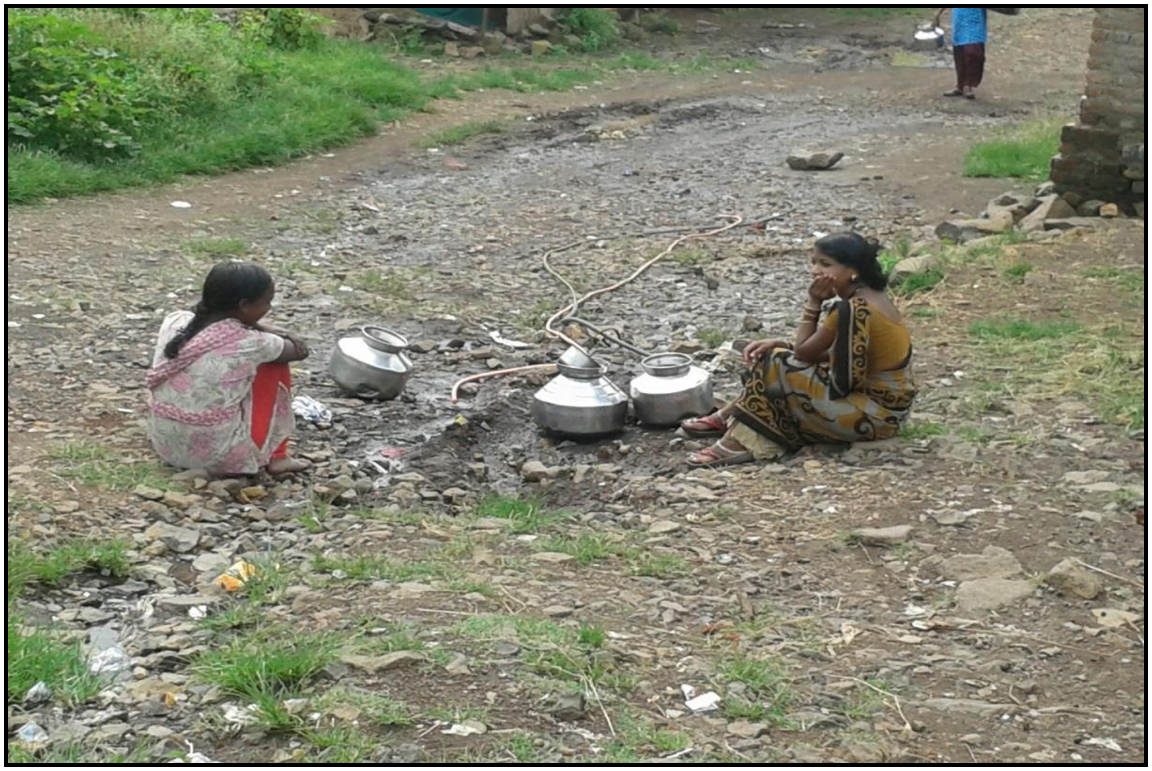

Photo-14: Water Obtained by Tribal Women and Kaccha Road at Ramshej Village in Dindori Tahsil.

Photo-15 : Settlements Pattern at Khambale Village in Igatpuri Tahsil.

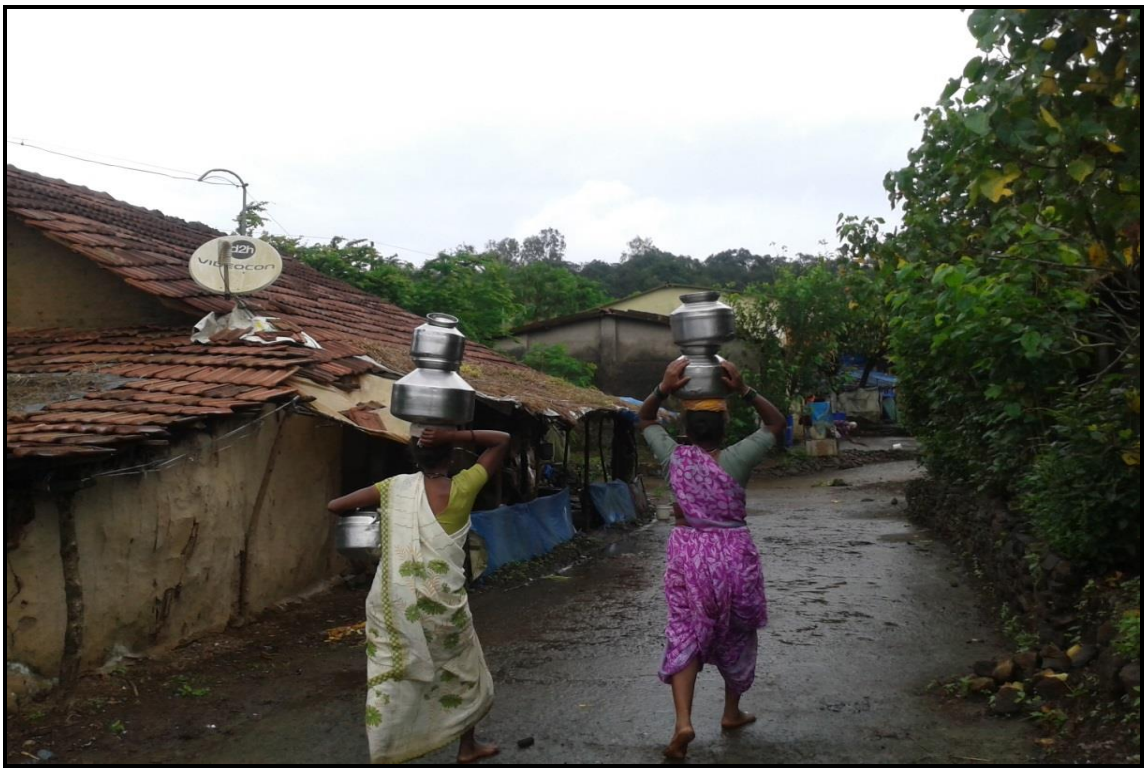
Photo-16: Water Carrying Tribal Women at Khambale Village in Igatpuri Tahsil.

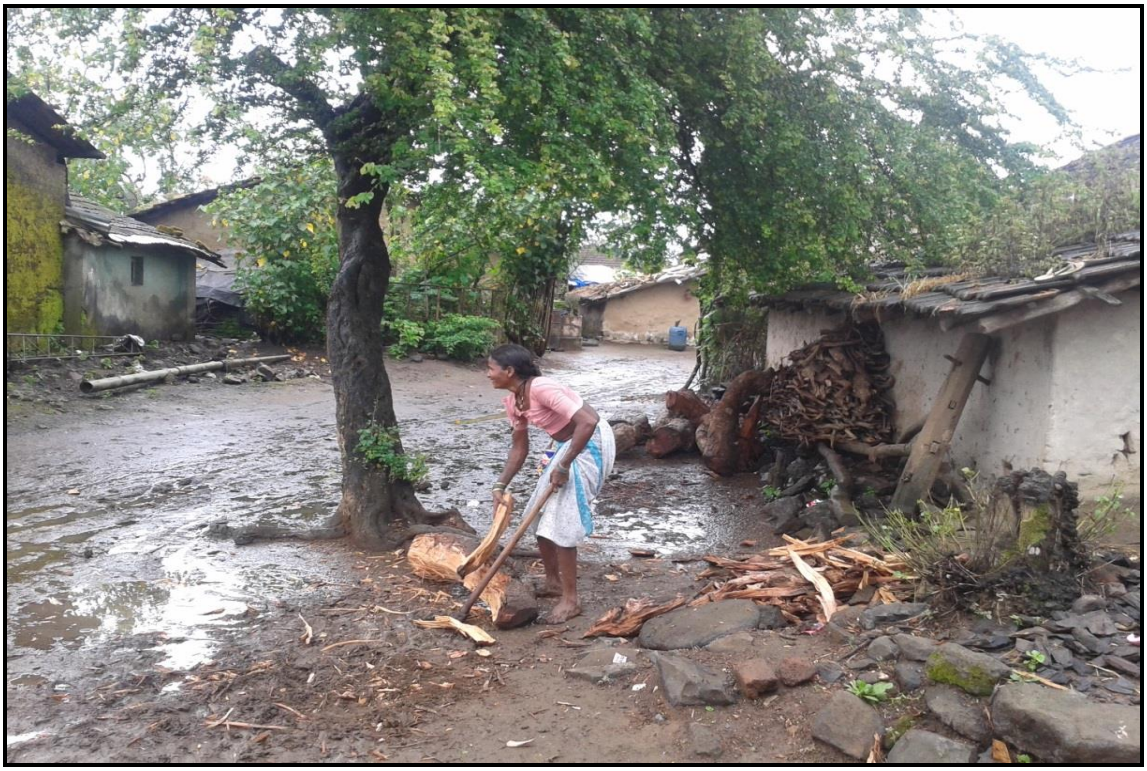

Photo-17: Wood Cutting by Katkari Woman at Khambale Village in Igatpuri Tahsil.

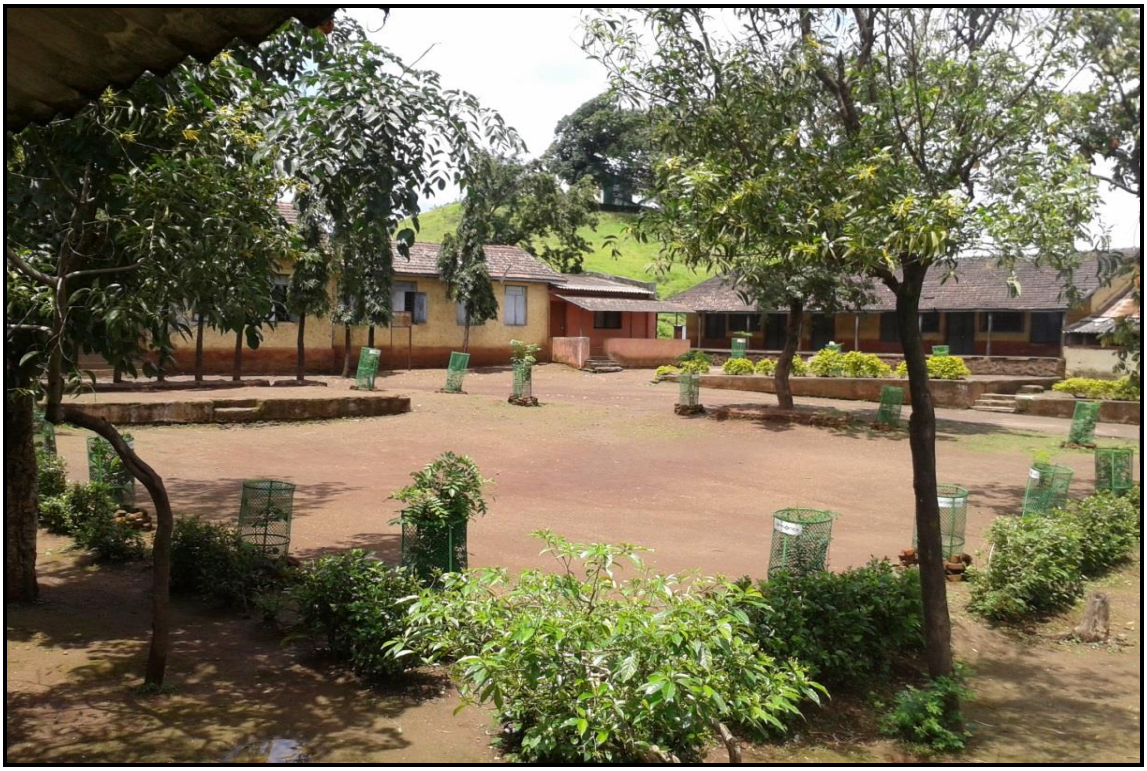

Photo-18: “Aadivasi Aashram School” at Khambale Village in Igatpuri Tahsil.

Photo-19: Primary School Students, Teacher at Khambale Village in Igatpuri Tahsil.


Photo-20: “Khichadi” Distribution in School at Behed Village in Niphad Tahsil.