Chapter VII

Conclusions, Problems and Suggestions

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Conclusions, Problems and Suggestions

7.1 Introduction:

The analysis based on the study from chapter 1 to 6 has some prominent conclusions. During the study, researcher has come to know some findings regarding various aspects of the rural settlements. In the field visit, some basic problems regarding rural settlements have been observed. In this chapter, an attempt is made to point out the conclusions, sort out the problems and suggest the remedies to overcome it.

7.2 Conclusions:

1. Jalgaon district is located in the north part of Maharashtra State. It is bounded by Satpuda mountain ranges in the north, Ajanta mountain ranges in south, Dhule district in the West and Buldana district in the east.

2. Jalgaon district is lies between 20° N to 21° N and 74° 55’ to 76° 28’ East longitudes. The East West stretch of the study region is 120 kilometers and North-South extension of the region is 110 kilometers. The district is rich in volcanic soil, which is well suited for Cotton and Banana production.

3. Geographical area of Jalgaon district as per 2011 census was 11776 square kilometers, population was 4229917 and density per square kilometer was 360 persons. Total urban population of the district was 1342711 and rural population was 2887206.

4. In 1999, Government of Maharashtra created a new tahsils i.e. Dhrangaon and Bodwad tahsil. Bodwad tahsil was separated from Bhusawal tahsil and Dharangaon from Erandol tahsil. Nowadays, Jalgaon district has 15 tahsils. Due to non availability of data of
Bodwad and Dhrangaon tahsils, they are not considered for data collection. So, only old 13 tahsils are considered for the study. In 1970, Parola tahsil was upgraded as a tahsil subsequently Mukatainagar and Bhadgaon were also elevated to tahsil status. In 1950 thirteen villages of Chalisgaon tahsil were transferred to Aurangabad district in 1956. Reorganization of states and subsequently in 1960 becomes a part of Maharashtra state. On 10th October 1960, the name of the district was changed to Jalgaon District instead of east Khandesh district.

5. Jalgaon district forms an upland district by its westward aspects. While the rest of the upland districts are drained to the East, the Tapi and its tributaries drain Jalgaon westward to the Arabian Sea. The headquarters of Jalgaon District as at Jalgaon and is located almost in the center of the district and the major transport lines. According to 2011 Census there were 1519 villages in Jalgaon district. The district ranks 9th and 1st in Khandesh respectively in terms of area.

6. Physiography is one of the dominated parameter of physical environment and its impact on patterns and density of Settlement is immense. Physiographically Jalgaon districts is divided in following division like Tapi Valley, Northern Belt, Southern Belt, Satpuda Hills, Satmala and Spurs.

7. About territory to the south of the Tapi, very little information is available as the area has not been surveyed geologically. However it can be stated that the hilly ranges south of the Tapi are covered with dark basalt. The trap weather with characteristic spheroid exploitation gives rise to large rounded boundaries on the outcrops. The trap soils produced by erosion and weathering are deep brown
to rich red on black (regur). These black soils are very rich in plants nutrients and are most favorable for cotton crops.

8. All the streams of district drain into one of the some principal rivers viz. Tapi, Girnaa, Bori, Waghur, which flows along the northern southern and the western boundaries of the district.

9. The climate of Jalgaon district remains dry except in the southwest monsoon season. The year may be divided into four seasons. The period of June to September is the southwest monsoon season while October and November constitute the post monsoon season. The cold season from December to February is followed by the hot season from March to May.

10. The cold weather commences towards the end of November when temperature begin to fall. December is the coldest month with the mean daily minimum at about 8.3°C and mean maximum at about 28.5°C in last thirty years. In cold season the district is sometimes affected by cold waves in association with the passage eastwards of western disturbances across north India on such occasion the minimum temperature may drop about 4°C to 5°C in the study region.

11. The average annual rainfall for the district is 793.6 mm. The rainfall in the district increases from the west to east varying from 430 mm at Chopda near the border above 750 mm. about 80% of the annual rainfall is received in the south west monsoon period. August / September are the rainiest month. The variation in the annual rainfall from year to year is fairly large.

12. The relative humidity of the study region is high during south west monsoon season. After September the humidity’s decrease gradually and in the cold and summer seasons the air is dry, particularly in the afternoons when relative humidity may be less than 30%.
13. Soils constitute the physical basis of an agricultural enterprise and play a very important role in the agricultural economy of a region. The soils in the district can be classified into four main categories on the basis of Structure and depth.
A) Shallow soils with depth below 7”
B) Moderate deeps soils between 7” to 9”
C) Medium deeps soils between 9” to 27”
D) Deeps soils between 27” to 45”

14. Jalgaon district has 14.63% area under forest in 1980-81. 0% to 15% area under forest was recorded in Busawal, Erandol, Amalner, Parola, Chalisgaon and Pachora tahsils, whereas 15% to 25% area under forest was observed in Chopda, Muktainagar, Jalgaon and Jamner tahsils. Above 25% area under forest was noticed in Yawal and Raver tahsils during the study period.

15. In the district, Tapi is the only river which has good deal of water capacity. Almost all the rivers get dry or have very less water after winter season. There is noticeable natural reservoir in the district. There are three major, Seventeen medium and Sixty three minor irrigation projects in the district.

16. The study region has got benefit from three projects, which has been located in Jalgaon and Dhule District. Out of them Girna project has irrigation potential of about 79283 hectares. Chalisgaon and Bhadgaon tahsils benefited from this project. Secondly Hatnur project has irrigation potential of 37838 hectares. Jalgaon and Bhusawal tahsil are benefited from this project. About 59150 hectares area from Jalgaon district is benefited by this Project. Lastly Waghur project constructed on the river of Waghur near Raipur village in Bhusawal tahsil has irrigation potentials of about 16984 hectares.
17. There are 17 medium irrigation projects which are completed before 2011 in different tahsils of the study region. Government has spent about Rs. 50144.33 lakh for the completion of 17 medium projects. Out of the total irrigation projects about 20.00% projects are situated in Raver and Pachora tahsils, 13.33% projects in Chopda and Pachora tahsils, 6.66% projects in Chalisgaon, Jamner, Erndol and Yawal tahsils and remaining 6.66% projects are situated in Nandgaon tahsil.

18. About 63 minor irrigation projects are constructed in Jalgaon district. Table 3.3 indicates, 26 minor projects constructed in Jamner tahsils. The percentage share of Jammer tahsil is 41.26% and it was the highest in among the tahsil whereas, only 1.58 % minor irrigation schemes were observed in Bhadgaon tahsil.

19. Irrigation wells are increased through five year plans in Jalgaon district. In 1981 there were 14543 irrigation wells in Jalgaon district. Out of the total wells about 93.46% wells were use on the other hand 6.53% wells were not in use numbers of wells in use decreased up to 82.83% in 2010-11 as compared to 1980-81 and number of wells not in use were increased up to 17.16% during the same study period.

20. Out of the total irrigation wells below 70% irrigation wells were used for irrigation in Jalgaon (69.24%) and Bodwad (66.84%) on the other hand 70% to 80% irrigation wells were used for irrigation wells in Jamner (74.18%) and Parola (70.56%) tahsils. Above 80% to 90% irrigation wells were used for irrigation Amalner (87.10%), Raver (85.67%), Bhadgaon (83.70%), Yawal (83.23%), Pachora (81.61%) and Earn dol (80.05%) tahsils. Above 90% irrigation wells were used for irrigation Muktainagar (96.60%), Dhrangaon (95.23%) and Bhuswal (94.21%) during 2010-11.
21. The percentage of net irrigated area to net sown area in increased from 233.88% to 322.54% in Jalgaon district during the period of investigation. Out of the total net sown area below 10% net sown area was found under irrigation in Bhuswal (8.53%), Chopda (8.14%), Parola (7.16%), Pachora (6.22%) and Chalisgaon (6.02%) tahsils whereas about 10% to 20% area was under irrigation in Bhadgaon (19.47%), Erandol (17.82%), Muktainagar (16.87%), and Jamner (13.69%) tahsil. Above 20% net sown area was under irrigation in Raver (38.10%), Jalgaon (35.42%), Amalner (33.74%) and Yawal (22.70%) tahsils during the same period.

22. The trends of general population decreased from 23.32% to 21.75% from 1980-2011. The highest growth rate was found in the decade 1980-81 and it was 23.32%. The population growth of Jalgaon district has remarkable decreased from 23.32% in 1980 to 12.169% in 2011.

23. There is tahsil-wise variation in the growth rate of population during the period of thirty years. The highest growth rate of population was noticed in Muktainagar (41.72%) tahsil, while Amalner tahsil has shown the lowest growth rate of 9.03%. Population growth rate of Jalgaon, Chopda, Parola, Raver, Chalisgaon, Jamner, Yawal and Bhusawal tahsil were 34.27%, 30.76%, 27.14%, 26.57%, 25.99%, 23.85%, 18.92% and 15.81% respectively. While Pachora (-35.71) and Earndol (-34.99) tahsil are decrease in population growth rate in Jalgaon district.

24. The Crude density of population was 228 persons per square kilometer in 1981. It was 329 persons per square kilometer in 2011 in Jalgaon District.

25. Physiological density/Sq. km. was 321 per Sq. km. in 1981 and it increased up to 329 per Sq.km. in 2011 in the entire study region and
it increased very high up to 436 per S.km. in 2011 in the entire study region.

26. Agricultural Density per square kilometer was 84 in 1981 and it was increased up to 121 in 2011. It can observe that caloric density per Square kilometer of Jalgaon District was 214 in 1981 whereas it has been increase up to 574 in 2011. Overall densities are increase in 2011 as compared to 1981. Growth of population is responsible for increase in various densities.

27. For the present study, livestock has been grouped into five categories such as total Cattle, Buffaloes, Sheep, Goats and Other Livestock. The proportion of cattle in the livestock was ranked first in 1981 as well as 2011, in all tahsils of Jalgaon District. Positive change was observed in Jalgaon and Bhadgaon tahsil during the study period. Cattle population is decreased due to application of modern implements in agricultural sector.

28. Buffaloes ranked third in livestock in Raver, Mukatainagar, Jamner, Jalgaon, Parola, Dhrangaon, Bhadgaon and Erandol tahsils. Whereas it was rank second as compare to other tahsils. Chopda, Yawal, Mukatianagar, Bhusawal, Amalner, Parola, Chalisgaon and Jamner tahsils are positive change in buffalo’s number during the study period. So according to table 3.8, the increasing demand of milk, trends of mixed farming and changing attitudes of farmers are dominant factors responsible for the positive change in number of buffaloes.

29. Sheep shared about 1.82% of the total livestock unties of the region. According to table 3.8, below 2% positive change in sheep population was experienced in Bhusawal (1.17%), Pachora (0.92%), Yawal (0.37%), Mukatainagar (0.27%), Erandol (0.26%), Chopda (0.07%) and Amalner (0.02%) tahsils during 2011.
30. Goats ranked second in livestock in Jalgaon District. Many tahsils from Jalgaon District has shown positive change in goat population. Above 6% positive change of goat population observed in Parola (13.97%), Mukatainagar (9.68%), Amalner (9.44%), Jamner (9.16%), Yawal (8.34%), Erandol (7.06%), Raver (6.01%) and Dharangaon tahsils from 1981-2011 (Table 3.8).

31. The tools and implements used by the Indian farmers are comparatively few in number, small in size, obsolete, crude and antiquated in character, simple in kind and very significant in value as compared to the most up to date farm implements used by the western farmers. The highest density of wooden ploughs per 100 hectare was found in Earndol (10.69), whereas the lowest densities 1.18 per 100 hectare were found in Jamner tahsil in 1981. Similarly the highest densities’ of wooden ploughs per 100 hectare was found in Jalgaon (7.86), whereas the lowest densities 0.07 per 100 hectare were found in Jamner tahsil in 2011 (Table 3.10).

32. However estimate of table 3.9 indicates that the iron ploughs decrease by 0.82% from 1981 to 2011. As compared to 1981 the densities per 100 hectare of iron plough decreased in all tahsil of the region in 2011.

33. Bullock carts increase from 22736 to 55231 between 1981 and 2011. It is remarkable increased for study region.

34. Sugarcane crushers were decrease during the study period of investigation. The highest increase in oil engines about 32.03% were found in Bhusawal tahsil while only 0.42% oil engines were found Jalgaon tahsil in 2011.

35. According to table 3.10, about 0.80 to 5.74 densities of electric pumps per 100 hectare was observed in all tahsils during the 1981, whereas 2.34 to 12.04 densities per 100 hectare were recorded in
2011. It means that density of electric pumps per 100 hectare was increased in all tahsils during the period of investigation.

36. In the study region number of tractors also increased in 1981 to 2011. According to table 3.11, about 0.60 to 0.67 densities per 100 hectare was observed in 1981 whereas 0.30 to 2.19 densities per 100 hectare of tractors were found in all tahsils in 2011.

37. Table 3.11 revealed that out of the total credit societies about 10.07% societies were found in Erandol and Jamner tahsil whereas 3.24% credit societies were found in Mukatainagar tahsil as on 31st March 2011. In loan advanced Jalgaon tahsil was ranking first whereas Bodwad was least.

38. There are 31 sub-market centers which are unevenly distributed in 15 agricultural marketing committees in the study region.

39. Table 3.12 revealed that out of the total Consumption of electricity about 37.82% electricity consumed in the other Consumption area where the shares of industrial, Domestic, Agricultural, Commercial and Road lighting were 33.62%, 15.86%, 6.89%, 3.54% and 2.24. In 2010-11, out of total consumption of electricity about 60.55% electricity was consumed by Agricultural sector whereas the shares of Industrial, Domestic, Other consumption, Commercial and Road lighting were 22.21%, 11.03%, 2.91%, 2.02% and 1.24% respectively.

40. The study region has the facility of Railway and Road transport. Table 3.13 also revealed that total length of the district was only 4746 km in 1981. Out of total road length highest share was found Major district highway it was 22.01%. Out of the total length highest share was found under Village road and it was 41.89%. The share of Major district highway, other district road, State highway, other classified road, Railway and National highway were 19.39%,
13.40, 11.22%, 8.10, 3.49% and 2.48% respectively in 2011.

41. Total length of Railway route was 480 kilometers. Out of total railway route, 296 kilometers was broad-gauge. Out of 296 kilometers were 201 km Double track and 95 km single railway track and 54 km was narrow-gauge in Pachora to Jamner. Chalisgaon, Pachora, Jalgaon, Bhusawal, Yawal are the major Railway Stations in the study region.

42. The distribution study of settlements is to identify the Relief, Slope, Drainage, Rainfall, Soil type, Roadways and Railways. For this study 2011 census data of settlements, toposheets, Relief and Slope analysis contour and settlements from toposheet are used. Simultaneously for Drainage, Roadways and Railways Researcher used buffer with respect to distance with the help of toposheet. To know the soil influence, district planning map of soil and toposheet for settlements is used.

43. From the study it is observed that Jalgaon region divided into three parts as follows,

   i) The Plains or Basins: The tahsil like Jalgaon, Muktainagar, Bhusawal, Amalner, Erandol, Dharangaon, Pachora and Jamner are lies in it.

   ii) The Plateau: Bodwad, Parola, Bhadgaon and Chalisgaon tahsil fall into this category.

   iii) Hilly region: Chopda, Yawal, Raver of Jalgaon district are come in Satpuda range.

44. In the study region lower height is 410 meter and the highest pick height is 1243 meter. Generally it is found that 68.26% settlements are distributed less than 600 meters. In between 700 to 900 meters there are 25.36 % settlements found and above 900 meters 6.38 %
settlements are located in Jalgaon region.

45. The slope of the study region is divided into five groups. Each group contain uniform class interval of 3° except the highest group. The lower slope group i.e. 0° – 3° covers 78.73 % settlements, second group 3° - 6° covers 12.44 % settlements, third group 6° – 9° covers 4.21 % settlements, fourth group which lies between 9° – 12° hold 3.81 % settlements and last group which is above 12° acquire 0.78 % settlements. The correlation value for slope of whole district is -0.75 it shows strong negative correlation i.e. increases the slope decrease the settlements.

46. To understand the influence of drainage in the study region researcher drew the buffer (i.e. distance from the drainage) and it is divided into four groups namely distance from drainage or river is less than 1 km., 1 to 2 km., 2 to 3 km. and above 3 km. It is observed that 56.38 % settlements found in less than 1 km. space from river or drainage, 1 to 2 km. holds 30.47 % settlements, in the 2 to 3 km. distance there are 28 % settlements located and 3.88 % settlements are merged in more than 3 km. distance from river or drainage.

47. In the study region there are three types of soil, namely Deep black soil, Medium deep black soil, Gray soil. On Deep black soil there are 38.77 % settlements are rest, 47.13% settlements are located on medium deep black soil and in Gray soil 14.08% settlements are found.

48. In Jalgaon district upto 2011 there was found 13266 km. length of Road out of which classification of road is National highway 342 km., State highway 1543 km., Major district roads 2666 km., Other district roads 1842 km. & Village roads 5759 km.

49. Mumbai-Itarsi, West and Central railway line is passing through the
study region. It is broad gauge double line covering a length of 201 km. and 34 stations in the district. The railway line almost bisects this district vertically and traverses through Jalgaon, Raver, Bhusawal, Amalner, Bodwad, Chalisgaon, Pachora, Jamner, Dharangaon and Bodwad tahsils. The other five tahsils do not benefit by any railway line. To understand the distribution of settlement and rail route Researcher drew buffer in a particular distance these zones are

1. Less than 1 km. contains 5.85% settlements.
2. In between 1 to 2 km. 2.83 % settlements are found.
3. In 2 to 3 km. hold 4.01 % settlements.
4. In 3 to 4 km. hold 3.81% settlements.
5. In 4 to 5 km. found 7.30% settlements.
6. More than 5 km. 76.16% settlements are found.

50. Four quantitative methods were used to find out types of rural settlements and divided into Compact, Semi-compact, Semi-sprinkled and Dispersed type for detailed analysis.

51. According to Bernrad method for settlement concentration and Table 5.1, it is observed that with the growth of decade, there is growth of concentration of settlement type except few tahsils. The maximum concentration of settlements throughout four decade is found in Bhusawal, Jalgaon and Erandol tahsils. But other some tahsils show gradual growth in concentration of settlements from 1981 and 2011 decade. These tahsils are Yawal, Bhadgaon, Chalisgaon, Jamner and Bodwad tahsils.

52. According to Debouverie method for settlement concentration it is cleared that high concentration of settlements found in Bhuswal, Erandol, Jalgaon and Yawal tahsils.

53. According to Demangeon method for settlement dispersion and
Table 5.3, it is cleared that the degree of dispersion is opposite condition of concentration. It means that the value of index (result) is high than it’s indicate dispersed type of settlement and as the index of dispersion is reduced it indicates semi-sprinkled, semi-compact and compact settlement type.

54. According to Houston method for settlement dispersion, Jalgaon and Chopda tahsil shows the tendency of high degree of dispersion while tahsils like Jamner, Amalner and Dharangaon show low degree of dispersion.

55. In the study area, there are 1519 rural settlements are observed. Study of each settlement pattern is quite difficult, so researcher study only those rural settlements which are having more than 5,000 populations according to 2011 census. For the study purpose researcher uses Google Earth images. It shows proper analysis of shape of settlement than the toposheet settlements shape.

56. To find out the spacing in rural settlement researcher used Rana R. B. Singh method and according to that tahsils like Muktainagar and Chopda show the moderate spacing among the settlements in the decade 1981 to 1991. But these tahsils showed the low spacing in the decade 2001 to 2011. That means there is increase in settlement. This increase in settlement is due to some wadi and wasti or group Grampanchayat villages acquire the status of separate Grampanchayat because its population is increased. It happens because in this tahsils after 1991 decade there is improvement in irrigation system, change in cropping system, establishment of sugar industry etc. which influence the population and it leads to increase in settlements. On the other hand north part of study region which holds tahsils like Erandol, Jalgaon and Jamner shows the low spacing which has more settlement density. It is due to more
fertility of soil, Black soil nature and texture, more irrigated area leads to more settlement in small region which holds large population size.

57. Settlement size is the population settlement ratio. It is observed that settlements of Jalgaon and Bhusawal tahsils show the high to very high size of settlement since 1981-2011. It is also observed that in Jalgaon tahsil, high soil fertility & irrigation facility is there and industries like Cotton, Paper, alcohol etc are established. The tahsils like Parola, Bodwad and Dharangaon show very low to low size of settlements in terms of population. It is because this area is located in water scarcity in late winter and summer, less productivity of soil, seasonal river flow etc. These factors affect on the size of settlement in terms of population in study region. But it is also observed that there is increase in size of settlement with increasing decade. This change happens because human influence i.e. positive impact of social and economic factors.

58. Different types of groups from the rural service center or amenities which are available in the village indicate the social, cultural and economic progress of the villages, these amenities are provided by the various government agencies, particularly Zilla Parishad, District Collector office, Director of Health, Maharashtra state Electricity Board and some private and other institutions such as co-operative sugar factories etc. Primary necessities like availability of Educational facilities, Medical facilities, Drinking water, Post office, communication facility to increase the betterment of life of the rural people.

59. There are 2269 primary schools in Jalgaon region, 506 secondary schools and 98 higher secondary schools in the study region. On the other hand in the study region there are Primary health center
(P.H.C.) are noticed in each tahsil as per the Govt. policy. The highest number of Primary health center was recorded in Chalisgaon tahsil (12.90%) and the lowest Primary health center was noticed in Bodwad, Erandol and Dharangaon tahsils. While there are only 506 number of post office in the study area. The highest number of post offices was found in Chalisgaon tahsil (11.30%) and the lowest percentage of post offices in Bodwad tahsil (2.26%) during the period of 1981-2011. Alternative communication facilities like PCO or telephone is latest trend that’s why post service is now not become more usable as compare to telephone or electronic mailing facilities. Though there are 8626 total PCO are recorded in the Jalgaon district.

60. According to 2011 census the total population of all selected settlements is 241798 and out of them total male population is 125308 and female population is 116490. Shortly male population is dominant than female population.

61. Highest percentage of people who take a primary and secondary school education were recorded in Naigaon (50.69) whereas lowest was recorded in Lohara and Anturli. In rest of the cases slight change is found in secondary school education.

62. Total number of rooms available for each family. It is observed that people belong to case study area acquire 1 to 3 rooms per families in large quantity, it is 92.31 % in Lohara followed by 91.94 % in Raver rural. All above family perform agriculture and service activity. While people of low income group which is related to wages and also most of scheduled cast and scheduled tribe community acquire minimum room which is built by grass, mud or brick which create square shape house specially Erandol 51.20% and Bodwad 40.84%. While Lasur and Lohatara has maximum
rooms per family 9.36% and 7% respectively.

63. The private rented sector was larger in rural areas as compare to urban areas. About one in seven households in rural areas were living in privately rented accommodation compare to one in eleven household in urban areas.

64. In 2011 budget, these Indira Awaas Yojana and Rajiv Gandhi Gramvikas Yojana are funded with amount 89.96 billions. Table 6.12 revealed that, out of thirty selected rural settlements, the villages like Naigaon has 22 and 13 number houses respectively by Indira Awaas Yojana and Rajiv Gandhi Gramvikas Yojana followed by Lahatar having 12 and 08 number of houses by Indira Awaas Yojana and Rajiv Gandhi Gramvikas Yojana. While some villages are less benefited from these Central government scheme like Shelwad and Erandol which has 03 and 02 number of houses respectively from by Indira Awaas Yojana and Rajiv Gandhi Gramvikas Yojana.

7.3 Problems:

The detailed study of rural settlements in the study region reveals that, there are several imbalances in different aspect of settlement pattern. In study region, there are certain causative factors which are responsible for the imbalances. The brief summary of the problems is as below:

1. Number of Jurisdictional changes has occurred in the district boundary since 1961. But a few harmless which so far were annexed to main villages have been separated and granted the states of villages.

2. The success or failure of the rural settlements is determined by the intensity of the climate factors. The climate of this district is on the whole dry except in the southwest monsoon season. In cold season
the district is sometimes affected by cold waves in association with the passage eastwards of western disturbances across north India on such occasion the minimum temperature may drop about $4^0$ to $5^0$ c in the study region. Variations in rainfall characteristics affect settlement and agricultural as a whole.

3. Population growth is determined to considerable extent by the amount of nutrients in the soils. The main factor that has influenced the development of soils in Jalgaon district is the undulating and hilly topography.

4. Due to the pressure of increasing population over land and the ever-increasing demand for land, forest areas have recede to distance hilly tracts with poor and shallow soil with the result that the forest are in bad state.

5. Tapi is the only river which has good deal of water capacity for major part of the river. On the contrary, almost all the rivers get dry or have very less water during winter and summer.

6. The tahsil like Jalgaon, Muktainagar, Bodwad, Dhrangaon and Amalner are neglected in case of medium project due to unfavorable geographical conditions. Most of the medium projects in the study region are not fulfilled during every rainy season but sometimes they become overflow.

7. Cattle population is decreased due to application of modern implements in agricultural sector.

8. There are only 31 sub-market centers which are unevenly distributed in 15 agricultural marketing committees in the study region. While marketing centers are also facing various problems like water, drainage, godowns facilities lack of good transport network etc.

9. In case of transport highest negative change in road length was
found under other classified road (-12.33%) on the other hand lowest negative change was observed under National highway (-1.24%). The tahsilwise correlation between relief and settlements shows that the tahsils like Chopda (-0.79), Yawal (-0.80) and Raver (-0.76) shows the negative correlation. It means that as the height increases, the settlements decreases.

10. The correlation value for slope of whole district is -0.75, it shows strong negative correlation i.e. increases the slope decrease the settlements.

11. The correlation value of whole district is -0.78. It is observed that there is very strong negative correlation between drainage distance and settlement. In other words increase the distance from drainage or river there is decrease in settlements. The tahsils like Parola (-0.72), Erandol (-0.61) and Amalner (-0.22) shows strong negative correlation. It means increasing rainfall leads to decrease in settlements.

12. In case of educational facilities. the level of highest Secondary school holds first place in the region i.e. Jalgaon tahsil - 75 (14.82%) and the lowest secondary school was noticed in Bodwad tahsil 08 (1.58%). Which mean that secondary and higher education facilities are minimum in study area as compare to population rate.

13. Inadequacy medical facilities in the rural areas of the region is further aggravated by the reluctance of the personal to say in rural areas or to visit the villages frequently. During the rainy season the disease problem become more critical for the rural people because of the inadequate facilities in the remote place.

14. Jalgaon district is inadequately served by drinking water facilities and postal services as compare to the number of total villages, i.e. 1519. There are only 506 post offices in the study area.
7.3 **Suggestions:**

Based on the problems and existing situation in the study region, some suggestions are offered as below:

1) Jalgaon district has very less forest area as compared standard requirement of forest area i.e. 33% to total geographical area. So measures should be taken to increase the area under forest for environmental balance by way of social forestry and certain land should be kept under forest. Watershed management programmes should be implemented and landaus pattern should be modified according to available water resources. Every farmer should utilize his land holding by way of at least 25% land under horticulture, 25% under food crops and 50% under cash crops where ever irrigation is available.

2) Physical and cultural factors are responsible for the process of dispersion of rural settlement in recent times in the study area. It is quite a natural tendency of the people to live in the vicinity or at the proximity of the farm. Their social isolation can be minimized if certain groups of hamlets are provided the common social place with social services and amenities and connected by the transportation and communication network. So that they can enjoy both the social life as well as proximity of the land.

3) The district has experienced uncontrolled population growth since last 3 decades. Fast growth of population may be controlled by educating the farmers about the demerits of large family size, high birth rate effects on family health and merits of small family size, female child education and awareness of health for increasing livelihood. This may give some relief to
population pressure on land and fragmentation of land. Population control measures should be effectively implemented up to remote areas of district despite of caste and religion. Literacy will bring a definite positive change in the attitude of the people of the region.

4) Morphological structure of the villages and sample villages in the study area marked by narrow streets, houses with common wall. Most of the village streets and lanes are tortures, dusty, and dirty. Such congested and unhealthy internal structure should be altered by improving the condition of internal streets. Drainage system should be development as well as new sites for living with common civic facilities should be developed. This may improve the living conditions of the rural settlement in the study area.

5) In rural area of the Jalgaon district, most houses are built with raw material which are danger in the situation like earthquake, heavy rain or flood. Better houses for sufficient shelter and comfort with properly processed local building material can be constructed. They should be constructed by taking into account the probability of an earthquake in order to minimize the loss of lives. Some earlier earthquakes incidents like Latur and Kachch has shown bad impact over human life. Earthquake prone housing concept should be implemented.

6) Social amenities which are lacking in certain villages of study area should be initiated i.e. establishment of primary health centers dispensaries, maternity homes and hospitals in each hierarchical centers. It should also include fresh tap water supply.

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Control of epidemic and educating people in hygienic living and village sanitation, Transportation and communication facilities become very much important in respect of accessibility to other villages. So the road system in the rural area should be developed to link every village through feeder roads with the main roads and there should be no single village which is located 3 to 5 km. from the main road.

7) In order to obtain overall development of rural settlements, rural service centers play vital role. Potential service centers should be located on the basis of an area, economic base. It should be arranged in relation with population so as to cater the diverse needs of nearby rural settlements.