

CHAPTER VII

CONCLUSION AND SUGGESTIONS

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From the foregoing study following conclusions have been duly made:

1. Concluding the salient feature of the growth character of rural settlement, it is observed that the block which is agriculturally prosperous and economically better developed indicate these blocks have an addition of more new villages which have been carved out of the old large size village e.g. Kale, Kodoli, Kotholi etc. The population of so many big villages has deceased due to the bifurcation. During the 1981 and 1991, several new villages have been emerged in different blocks of the study region looking into the cause of the emergence of new settlements. It was found out that in 1971 several hamlets and “Wadi” settlements which are the part of big parent village have been given independent status in 1981 and also 1991 e.g. Manewadi in Kotholi block. These various newly emerged rural settlements were given independent status because of the over-grown size of the original settlements under which they form.
2. In the study region of Panhala Tahsil, size and spacing depend on the factors like the agriculture prosperity, surface relief of the land or suitability of the land for settlements, historical perspective of the area, natural fertility of soil, availability of water, natural landuse and land cover, rur-ban centers etc.
3. The spatial characteristics of rural settlement vary from block to block. Different physical and historical factors affect the distribution of rural settlements. Therefore, size and spacing of rural settlement is different from block to block.
4. The changes in mean areal size of rural settlement indicates block-wise that indicate Kodoli and Kothli blocks have larger areal size of the rural settlement and it reduced year after year. In year 1971 there were only

102 villages which increased in 1981 by 18 villages and become 121. In year 2001 the total number of villages becomes 130.

5. The population of villages also increased year by year whereas size of area of villages are reduced as comparison to population so that the areal size of block in 1971 is large than 1981, 1991 and 2001. All blocks had larger areal size of the rural settlements in 1971 but by 1981 started reducing the mean areal size of the rural settlements has been reduced considerably.
6. The average areal size of block have not maintained in throughout the year/period. It is observed that the mean areal size of the rural settlement has been reduced in the blocks due to bifurcation of villages.
7. The regional average of areal size is so large in 1971 it is 5.66 sq. km but in 1981,1991, and 2001 it has been reduced up to 4.38 sq. km respectively.
8. It is observed that average spacing in the rural settlement is considerably (more than 2.50 km) observed in Kodoli, Kotholi and Bajarbhogaon blocks in 1971.
9. In plain area Kodoli block the average spacing is high and size of population is so high than other blocks .Another Bajarbhogaon having second high spacing block after Kodoli. In this block in 1971 average spacing are having 2.61 km and it reduced and stable in 1981, 1991 and 2001 it is 2.35 km. In Panhala block the average spacing in 1971 is 2.14 km it is medium spacing but in the year 1981,1991,and 2001 spacing is very low and stable it is 1.87,1.86 km respectively. Because Panhala is a Rurban center and tourist attraction point and it's having historical importance and were having Tahsil head quarter.
10. All over Tahsil the high average spacing occurred in 1971 it is 2.38 km, but it reduced up to 2.16 km in 1981, in 1991 and 2001 spacing between settlements is stable it is 2.09 km.
11. The concept of size and spacing of rural settlement are correlated an interdependent upon each other. In areas with large size settlement, their

spacing is abnormally high while in areas with small settlements the spacing is very close, except for the hilly, forested and flood affected areas.

12. Since the 'Rn' value is floating in-between '1' and '0', almost all rural settlements in the Panhala Tahsil are of 'semi-sprinkled' or 'hamlet' type. This is further strengthening the conclusion, that most of the low lying study area is occupied by shallow water table with numerous rivers and water tanks. Hilly and partly mountainous area with sporadic forest patches has high water table, however, agricultural land is comparatively fertile. Most of the farmers are therefore, tend to construct their houses in the fields, which further due to the traditional fragmentation of the land among the offspring of the family expand the settlement in the form of 'wadi' or 'hamlets'.
13. The average population size and areal size is larger in Kodoli block than the other blocks and the population size lower in Bajarbhogaon blocks.
14. The coefficient of correlation for the average areal size and average spacing between settlement obtained $r = 0.99$ which is shows the high positive correlation than the correlation between average population size, average spacing and average population size, average areal size. The relationship between population size, areal size and spacing of rural settlements has been studied for the existing distribution of rural settlements.
15. From the case study of about thirty villages it is drowned that most of the villages has duly grown their satellite settlements within the 1 to 3 km around them. Each village at lower height or in river valley has at least two such appended settlements in the form of wadi, pada or farmhouse. Jakhale village being an agro-centre in Kodoli block has almost twenty small settlements appended around it. Panhala, Kololi, Kodoli, Porle villages have 6/5 such satellite settlements.
16. In the study area most of the villages having 250 to 750 households settled in the village. From the case study it is seen that being one of the

important centers in the tahsil and enjoying nearness to main road, Kodoli a block centre has 3919 households in main village and around 139 households residing around the village in small farmsteads and wadis. Number of multistory houses is also considerable in this village. They are about 200.

17. Most of the villages in Panhala tahsil are situated in the plain area of river valley. Being strategic site selection, agriculture land is very fertile; therefore, agriculture is developed in this region. Most of the settlements are compact type leaving maximum land available for agriculture. It is concluded from the case study of some '27' villages of all types that, the average land available for the village cadastral is some 566 hectares. The Kodoli village which has a historical background and being a centre of attraction of the then British government the missionary church, school, hospital and government office was established there before independence. This village now block centre has maximum land in its cadastral i.e. 2235.37 hectares. Nikamwadi in Kotholi block has minimum area under cadastral i.e. only 100.73 hectares.
18. The average land holding capacity of cultivator is about 7.7 and minimum is 1.9 hectares. Averagely 30 families from each village dismally having no land for cultivation. The rate of land considerably high because of high fertility and good irrigation facilities. The average rate of land is about Rs. 45,137/- Per Guntha (about 1000 sq ft.). In Kodoli it is sky rocketed to Rs.200000/- Per Guntha. By virtue of historical place and a hill station there is Rs. 300000/- Per Guntha at Panhala Rural and Satve Tarf Pimple village. Being a far remote i.e. 60 km away from head quarter and 25 km from nearest tar road, the rate of agriculture land is comparatively less up to Rs. 20000/- in Padsali village of Bajarbhogaon block.
19. Maximum villages in the study area are situated along the bank of either major or minor river. Taking a benefit from this natural water source

maximum land is under the river water irrigation. Individual farmer or league of farmers spot the pump set along the river bank to pump the river water in their farms. There are averagely 98 pump sets in each village from which about 30 pump sets are installed to pump the water from river. Kodoli, Kakhe, Satve, Savarde, Mohore villages are situated along the Warana river bank and practicing therefore, river water irrigation.

20. By virtue of proclamation and effective implementation of Pradhan Mantri Gram Sadak Yojna has extended an approach thankfully to each and every village in the study area. However, quality of terrain posing a threat to the mettle roads in almost all low lying villages. It is therefore, these roads always remain under maintenance.
21. Being in a maximum rainfall receiving area some area of the study region experiencing several problem regarding severe land and soil degradation by running water. Warana River is a perennial river which floods the banks and therefore, agriculture land along the bank is always in threat of flooding.
22. Land sliding is another geomorphological problem faced by villages in study region. Especially around the Panhala fort and Masai plateau the upper phases of steep slope dislodges from the parent body and collapse and roll over the agriculture land and even settlement some time. In monsoon season, Aпти, Nebapur, Bandiwade, Bongewadi, Gude, Vekhandwadi villages experience frequent land sliding, solifluction and soil creeping. In some cases cultivators virtually loss their agricultural land in massive solifluction.
23. In the greed of maximum agriculture output farmers in this area tend to utilize excessive chemical fertilizers. This chemical fertilizer eventually leads agriculture land to irreparable stage of soil degradation. More over considerable land has become saline caused by excessive irrigation. In Kodoli village the extent of such saline land is more.

7.2 SUGGESTIONS

1. Due to the remoteness and rugged terrain of some villages implementation of Pradhan Mantri Gram Sadak Yojna has not been done so far. It is therefore at least approachable road should be constructed in these areas. Adjoining villages to Panhala and Masai Plateau, Wadi Ratnagiri are experiencing very poor approach to the villages.
2. Thick soil layers and devoid of hard basement in the low lying area along the bank of Warana River posing a threat to the mettle roads in all villages. It is therefore, these roads always remain under maintenance. It is suggested therefore, to heed an attention to the maintenance of roads and path ways. Permanent solution to keep roads in good condition is to check the infiltration of water particularly in rainy season by reclaiming the hard material like murum, stone etc.
3. To tackle problems like severe land and soil degradation by running water, slope wash, soil creep and solifluction slope arrest technique of applied geomorphology should be adopted.
4. Warana River is a perennial river which floods the banks and therefore, agriculture land along the bank is always in threat of flooding. To tackle this problem through implementation of watershed management should be done. Flood preventive bunds and walls should be constructed along the river banks flood zone at least near the settlements. River course cleanup is also effective in the regards. Moreover watershed treatment and management, stream bank stabilization also can be practiced.
5. Encroachment in the flood zone of river to obtain more cultivable land is a common practice of the farmers which create the main course of river very narrow. In the monsoon season this narrow river channel could not facilitate the easy flow of water then poses threat

of the flood. It is therefore, should take in notice that river channels should remained in natural position.

6. To solve the problem of land sliding around the Panhala fort and Masai plateau the upper phases of steep slope should be arrested by the mechanical means i.e. application of Geo-net, Chain-Link Net, plantation where ever possible, should be implemented.
7. In monsoon season, Aпти, Nebapur, Bandiwade, Bongewadi, Gude, Vekhandwadi villages experience frequent solifluction and soil creeping. In this case farmers should shun the conventional type of agriculture practice. Cultivators should adopt scientific agronomic practices like terrace farming, contour farming, strip cropping, mulching etc.
8. Since most of the study region (49.30%) come under the hilly and rugged terrain the soil layer is very shallow and always remain in the danger of soil loss by fluvial erosion. In this case existing soil layer should be protected from all kinds of erosion. Soil on top of hills and flanks or slope of hills should be protected from the impact of rain drop, sheet erosion, rill erosion, gully erosion by cultivating grass, plants, contouring, terracing, stripping, gully plugging, slope arrests etc.
9. Chemical soil degradation is another menace posed by the overuse of chemical fertilizers and over irrigation in most of the low lying area of Warana river valley and Kasari river valley. To avoid the problem of soil salinisation and alkalinisation good water drainage should be provided to the agriculture land. Minimizing the use of water in the field also affective measure to control the salinisation of soil. Planting the salt tolerant vegetations like cotton, spinach, grasses applicable for the same. Adding gypsum in the upper thin layer of the soil is also very effective in minimizing the alkalinity of the soil.

10. The government with the help of local governance body (Gram Panchayat) should look into the problem of soil and land degradation. For the restoration of degraded land government should take effective steps.
11. To minimize the gulf of regional imbalance government should look into the infrastructure problems like approach, uninterrupted supply of electricity, economical boosters like self help groups, banks, schools should be provide at least block level.
12. Agro based industry can face lift the country side so that agro industry should be promoted in this rural region.
13. The tahsil has potential to generate the electricity by wind mills. There are many such sites which are in the prevailing wind where wind velocity remain more in the most of the time during day and night. Western rim of Panhala Fort, Masai plateau, Wadi Ratnagiri Hill have such grate potential to generate electricity. It is therefore, suggested to install wind mills. Moreover solar energy can also be trapped providing solar cell panel to the individual.
14. Civic facilities like continuous potable water supply, good drainage, street lights, common lavatories, common toilets, dustbins, photo paths are expected to provide in all villages. Most of the villages are congested and lack of common facilities so that these should be provided common facility centre. Where all villagers can perform their functions.
15. Schemes of credit for housing to the villagers in poor class like Indira Awas Yojana should be implemented impartially and effectively. Construction assistance for house should be provided on partly on loan and subsidy to the villagers above poverty line.
16. Insurance against loss of crop and natural calamity should be awarded to the farmers and villagers.

17. To avoid the societal conflicts and problems basic education emphasizing on value education should be provided to the villagers. For this adult education and Anganwadi Yojana, Sarva Shiksha Abiyan, should seriously be implemented. By virtue of nearness of the state University (Shivaji University, Kolhapur) should look into this educational problem.

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