CHAPTER VII

SUMMARY AND CONCLUSION

All over the world, urban centers, cities or small towns are expanding by migration and natural increase in population. One important aspect of urbanization is the tendencies towards concentration of population in larger urban centers are having serious implications. These cities are growing rapidly and services are not able to keep up with the pressure of population. These growing cities have literally expanded into the surrounding areas leading to changes in land use pattern, morphological character, socio-economic and demographic lives of the rural folks living in the fringe areas. Fringe areas grown around cities have assumed a vital significance for the planning of cities in future. The villages of the today’s fringe are likely to become an integral part of the city tomorrow. The study area lies between 33°52′15″ to 34°15′33″ North latitude and 74°34′49″ to 75°01′24″ East Longitude covering the area of 890.36 square kilometers with the population of 525514 persons (Census 2001) reflecting the population density of 590.23 persons per square kilometer. It covers a vast area of Jhelum valley floor characterized by gentle undulating topography, while the South-West and Southern peripheries have presence of elevated lands known as karewas. The study area comprises of 418 inhabited villages and spread over the districts of Srinagar, Ganderbal, Baramulla, Budgam and Pulwama.

In most general terms, the problem of the fringe arises from two sources. The first is isolation, and second is a tension which is created by the impact of city expansion upon the open countryside. The later one is very acute in small regions
where the space is limited. So far as the region of Kashmir is concern, it is in an axial form surrounded by mountains from all sides with the primate city of the state where the trend of urbanization is very fast. Srinagar being the state capital and the most dynamic among all the urban centers of the region constitute 66.30 percent of total urban population of Kashmir region and 38.77 percent of the total urban population of Jammu and Kashmir State in 2001. The growth of the Srinagar city has influenced the whole region but most importantly the area nearby it. Srinagar city and its environment have changed both in terms of population and area. Which has not only changed the morphology of the city but also it’s surrounding area. Present study deals with the dynamics of rural urban fringe of Srinagar city in terms of its socio-economic and demographic profile and land use pattern. The present research has accomplished basic four analyses, discussed in last four chapters which form the core of the present research. One is to analyze the growth of the Srinagar city in terms of population and area from 1901 to 2001 and land use change for last three decades (1979 to 2010). Secondly is the delineation of rural urban fringe and differentiating the ‘Inner City Fringe’, ‘Urban Fringe’, ‘Rural Fringe’ and Purely Rural Villages. These divisions have been made on the basis of demographic and economic characters of the area. Thirdly, in order to analyze the magnitude of urban influence on socio-economic and demographic profile, statue and land use pattern, the area has been divided into three zones on the basis of distance from city center as 0 to 10 kilometers, 10 to 15 kilometers and 15 to 20 kilometers as Zone 1, Zone 2 and Zone 3 respectively. The variations in the degree of urban influences were analyzed on selected variables among the Zones.
7.1 FINDINGS

7.1.1 Srinagar City and Its Environment: A Geographical Background

1. The city has experienced slow growth rate from 1901 to 1941 with the increase of 4.8 \( \text{Km}^2 \), after 1941 to 1971 it has experienced fast areal growth has accelerated after 1971 to 2011 with the increase 334.22 \( \text{Km}^2 \).

2. The population of Srinagar city has increased from 6 lakhs in 1981 to 11,92,792 persons in 2011 with its annual growth rate of 22.8 percent.

3. The areal growth of Srinagar city is found to be 265.3 \( \text{Km}^2 \) from 1901 to 2001 if this trend continues, sooner or later, the city would encroach up to the neighboring tehsils of Budgam, Chadora, Pampore and Ganderbal so as to form a State Capital Region.

4. During the past few decades urbanization has taken place on agricultural lands up to Ganderbal on the north, Pampore on the south and Narbal on the west and up to Budgam in south-west.

5. This expansion has taken place along the arterial routes towards Budgam, Baramulla, Pampore, and Ganderbal. The development of Bemina colony on the low lying land and the accelerated building activities in the low lying area of Hyderpora and Nowgam in the south have also opened the a new area of expansion of city limits.

6. Despite the constraints posed by the urban water bodies and the wet land of Dal Lake and the mountains in the east, Nambal (Marshy) land and the Anchar Lake in the north-west, low lying and flood prone area in the south, the city is experiencing urban sprawl in these areas because of rapid
urbanization which is evident from the fact that building activities are heavily
taking place in and around the Dal Lake and Wetlands of the city.

7. Due to the increasing population which in turn results the increasing demand
of land, built-up land has increased from 11.58% in 1979 to 26.08% in 2010
indicating the percentage change of 14.50%. Similarly the area under
plantation and orchards have been increased by 13.23%

8. The area under agricultural activities has shown a significant change, the area
have decreased from 68.85% in 1979 to 47.77% in 2010.

9. The marshy area have been reduced from 5.52% to 1.35%, similarly water
bodies have been reduced by 1.37% , Forest area by 0.65% and Barren land
by 0.46%.

10. Physical barriers play an important role in monitoring the pattern of urban
pattern

7.1.2 Delineation of Rural Urban Fringe

11. The fringe area has shown growth towards South - East in the territory of
District Budgam and Pulwama mainly along the National Highway NH1, in
the North it has extended along the Ganderbal route and in the North West
along the Baramulla road.

12. Physiography has played a significant role in controlling the growth of fringe.

13. Though the numbers of settlements in inner city fringe has remained same
both in 1981 and 2001 but in case of urban fringe the numbers of settlements
have increased from 72 to 169 indicating the increase of 97 settlements.

14. Due to urban influence the number of settlements in rural fringe have shown a
decrease of 86 settlements i.e., from 326 to 240.

15. Similarly the purely rural villages have decreased by 11 settlements i.e., from 25 in 1981 to 14 in 2001.

16. Ratio of non-agricultural worker has reflected the urban influence as the number of settlements which fall in city fringe have increased from 2.69 percent in 1981 to 5.10 in 2001.

17. In case of population density the percentage of settlements in city fringe and urban fringe from 1981 to 2001 have increased while as in rural fringe the case is reverse.

18. It has been observed that the literacy rate is high in the south, southeast and in north peripheral settlements in 2001 as compared to 1981, thus fulfilling one of the characteristic of rural urban fringe.

7.1.3 Socio- Economic and Demographic Profile of Rural Urban Fringe

19. The variables like Household density, Population density, Literacy Rate, Percentage of Non-agricultural workers, Land Value, Population Growth of different distance zones display the existence of density decline in terms of distance from the city boundary to the peripheral areas. While as Sex Ratio have shown the positive correlation with the increase in distance.

20. The population density of Zone 1 (0-10 km) is significantly different from Zone 2 (10-15 Km) and Zone 3 (15-20 Km) at five and one percent level of significance while as the difference between Zone 2 and Zone 3 is not significant at 5 percent level of significance.

21. The household density of Zone 1 is significantly different from Zone 3 at one
percent level of significance. While as the difference in household density between Zone 1 and Zone 2 is not significant at five percent level of significance. Likewise the difference between Zone 2 and Zone 3 is not so much and the difference is not significant at five percent level of significance.

22. The population growth of Zone 1 is higher than Zone 2 and the population growth of Zone 2 is higher than Zone 3, but these differences are not statistically significant at five percent level of significance.

23. The differences among the Zones in terms of Literacy rate in 1981 are not significant at five percent level. While as in case of 2001, the difference between Zone 1 with other two Zones is significantly different at one percent level of significance. While as in case of Zone 2 and Zone 3 the differences are not significant at five percent level.

24. Though the sex ratio has increased with the increase in distance in both the decades but the differences in sex ratio among the zones are not statistically significant at five percent level of significance.

25. In case of 1981, it is found that from the test that the ratio of non-agricultural workers in Zone 1 is significant difference from Zone 3 at one percent level of significance, similarly the difference at one percent level of significance is also observed between Zone 2 and Zone 3. While as, there are differences between Zone 1 and Zone 2 are not significant at five percent level. The difference in the ratio of non-agricultural workers between the Zones in 2001 reveals that the Zones differ from each other, but the difference is not significant at five percent level.
26. The land value differs among the Zones and the differences are significant at one percent level of significance.

27. The number of persons engaged in primary and secondary activities are less in Zone 1 and increases with the increases in distance, the case is reverse in terms of tertiary activity, number of persons are found in Zone 1 are more and decreases with the increase in distance.

28. It is found that the number of literates in Zone 1 is significantly different from Zone 2 at five percent level of significance, while as the difference between Zone 1 and Zone 3 is not significant at 5 percent level of significance, likewise the difference between Zone 2 and Zone 3 is not significant at 5 percent level of significance. On the other hand the difference in number of illiterates in Zone 1 is significantly different from Zone 2 at one percent level of significance and from Zone 3 at five percent level of significance. While as the difference in the number of illiterates between Zone 2 and Zone 3 is not so much and also difference is not significant at five percent level of significance.

29. The people engaged in tertiary activity have shown the significant difference between the Zones at 1 percent level of significance showing that the numbers of people engaged in tertiary activity are not same in all the Zones.

30. The difference in the number of Primary and Middle schools between the Zones is not significant between at five percent level of significance. In case of Secondary schools Zone 3 is significantly different from other two Zones at one percent level of significance while as the difference between Zone 1 and
Zone 2 is not significant at five percent level of significance.

31. The Comparison of medical facilities among the Zones reveals that the difference between the groups in terms of medical facilities is significant at one percent level of significance.

32. The maximum educational linkage with the city among all the Zones have been found in Zone 2 followed by Zone 1 and Zone 3.

33. It is found that from the test that the educational linkage of Zone 1 is significantly different from Zone 3 at five percent level of significance, while as the difference between Zone 2 and Zone 3 is significantly different at One percent level of significance. Likewise the difference between Zone 1 and Zone 2 is not significant at Five percent level of significance.

34. Mostly people in the rural urban fringe have monthly medical linkage with the city.

35. It is found that from the test that medical linkage of Zone 2 and Zone 3 is significantly different at Five percent level of significance. While as the difference between the other Zones is not significant at five percent level of significance.

36. The postal linkage of the fringe area with the city is very low in all Zones.

37. The difference in marketing linkage between the Zones is not significant at five percent level of significance. So it can be said that marketing linkage of all three Zones of the sample villages are similar to some extent.

38. For socio-cultural purpose people mostly make monthly visits to city.

39. The postal linkage between the zones reveals that the Zone 3 is statistically
different from Zone 1 at five percent level of significance and from Zone 2 at one percent level of significance. While as the difference between Zone 1 and Zone 2 is not statistically significant at five percent level of significance.

40. The marketing between the Zones is not significant at five percent level of significance. So it can be said that marketing linkage of all three Zones of the sample villages are similar to some extent.

41. The differences in Socio-cultural Linkage of Zone 3 are significantly different from Zone 1 at five percent level of significance and from Zone 2 the difference is significant at one percent level of significance. While as the Socio-cultural Linkage of Zone 1 and Zone 2 is not so different and also the differences are not significant at five percent level of significance.

42. Service Linkage shown reveals that Zone 1 is significantly different from Zone 3 at five percent level of significance. While as the difference between Zone 2 and Zone 3 is less so the difference is not significant at five percent level of significance, similarly the difference between Zone 1 and Zone 2 in the service linkage with the city exists but is not significant at five percent level of significance.

43. The commuting linkage of fringe people is high in Zone 3 (26.19%) followed by Zone 1 (17.24%) and Zone 2 (7.89%).

44. Commuting Linkage of Zone 2 differs from Zone 3 and the difference is statistically significant at five percent level of significance. While as the difference prevail between the Zone 1 and Zone 2 but is not significant at five percent level of significance and also the difference between Zone 1 and Zone
3 is not significant at five percent level of significance.

45. The transport frequency of the fringe area follows the declining gradient with the increase in distance.

46. The number of people who wants to keep the land same are high in Zone 3 and decreases with the increase in distance and reverse is the case with people who wants to convert their land into commercial use.

47. The responses of respondents regarding to their future plans of land use reveals that the future plans of land use change of Zones 1 differs from Zone 2 and Zone 3 and the differences are significant at one percent level of significance. While as the difference between Zone 2 and Zone 3 are not so much, therefore the difference is not significant at five percent level of significance.

48. The percentages of persons who favor the urban influence are more in Zone 1 and followed by Zone 2 and Zone 3.

49. The responses regarding urban encroachment of Zones 1 is significantly different from Zone 3 at five percent level of significance. While as the difference in the opinions of the respondents of Zone 1 and Zone 2 are not different at five percent level of significance. Similarly the differences between Zone 2 and Zone 3 are also not significant at five percent level of significance.

50. The distribution of newspaper decreases with the increase in distance from the city.
7.1.4 Rural Urban Fringe Land Use Land Cover Change Analysis

51. The influence of city on its fringe is also reflected in land use, which is more on Zone 1 and decreases with the increase in distance from the city.

52. The area under agricultural land has reduced from 73.87 percent to 63.06 percent indicating the decrease of 10.84 percent. On the other hand the area under plantation has increased by same percentage (10.84%) from 8.01 percent to 18.85 percent.

53. The area under built-up area has increased from 4.59 percent to 6.65 percent similarly the area under horticulture has increased by 2.89 percent.

54. Water bodies have showed the reduction of 0.45 percent similarly the area under wet lands have reduced by 4.54 percent.

55. The increase in built-up area has found more in Zone 1 (9.89%) followed by Zone 2 (4.27%) and Zone 3 (1.04%). While as the decrease of agriculture area has also following the same trend.

56. The increase in plantation area has observed more in Zone 2 followed by Zone 1 and Zone 3. Likewise the increase in horticulture area has found more in Zone 3 followed by Zone 1 and Zone 2.

57. The decrease in wet lands have observed more in Zone 2 (-6.52%) followed by Zone 1 (-5.28%) and Zone 3 (-3.39%). On the other hand the reduction of area under water bodies were found more in Zone 1 (-0.98%), followed by Zone 3 (-0.46%) and Zone 2 (-0.12%).

58. Due to growing demand from city many farmers have shifted to vegetable cultivation especially along the rural urban fringe of the city. Fifty percent of
the area under wetlands has been transformed into human-made environments.

7.2 Suggestions

1. Urban growth has negative impacts on the land use pattern of the surrounding area in order to overcome these consequences it is better to implement considerable debates, strategies, plans regarding the role of spatial planning in influencing general land use trend. Therefore it is essential to explore the apparent link between urban sprawl, spatial planning and changing land use pattern in rural urban fringe.

2. It has been observed that the fringe area lacks most of the facilities and infrastructure base like education, health, transportation and other community services. Therefore infrastructure facilities should be uniformly distributed in the rural-urban fringe. This will make life pleasant in fringe areas and also lift extra pressure on the existing facilities of the city which is necessary for their smooth functioning.

3. The present fringe will be the part of city but the fringe area has been neglected by policy makers all to gather. Therefore it is necessary for the policy makers to frame and implement some policies so that the economic status of the fringe area will be developed. As the area is having a great scope for the development of handicrafts, floriculture, tourism and horticulture.
4. The rural-urban fringe of the city possess vast expanse of wetlands, Zabarwan hills, Domadar kerawas of Budgam and kerawas of Pampore. All these land uses are having economic potential from the point of tourism, agriculture, horticulture and ecology. More ever construction of any type on these features should be strictly banned.