

Impact of Jammu City on Its Peri–Urban Zone

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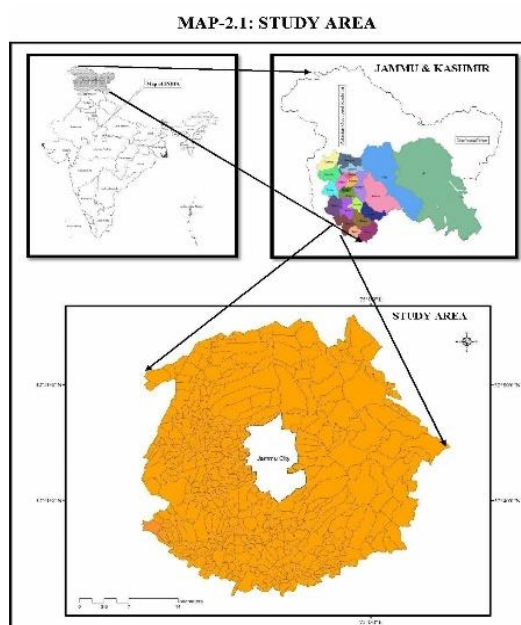
Abstract: Due to the fast galloping population, increasing traffic the space in the city area is shrinking fast and the urban area is modifying its characteristics with high migration rate. The adjoining villages are gradually changing their rural character into urban in all the cities of India and not within limit of well-defined boundary. Consequently this process creates different transitional zones between city and countryside. These transitional zones generally known as peri-urban areas varying in width and nature and have rapid change with increasing population pressure. In the present paper the author try to reveal the various impact of city on its surrounding peri-urban area leading to changes in landuse, social and economic structure of the rural folk living in the peripheral area of the city.

Keywords: peri-urban, landuse, economic structure, fringe, population pressure.

1. Introduction

Jammu city has exerted its impact on the all-round development of the surrounding countryside and progressively extend its social and economic influence to the surrounding urban field. This creates mental or perceived urbanization of the nearby rural settlements, i.e. social transformation of National rural societies into urban societies. This outward spread of the urban centers into the nearby rural areas absorbs the peripheral villages into the urban economic system. This process can be explained as the urbanizing villages, urbanized villages and the suburban development and the rural urban fringe. It is mainly due to increasing population, over congestion and high land values in the city.

2. Study Area



The area under study including maximum part of Jammu district and some villages of Samba district is lying in this province. To set the agenda for research, the first effort has been set forth as the identification of the area. It is extended between 32°32" N to 32°54" N latitudes and between 74° 39" E to 75° 4" E longitudes. It is bounded by Akhnoor Tehsil in the north west, Samba district in the south east, R.S. Pura Tehsil in the south west and Bishnah Tehsil in the south. Western parts of the study area shares the international border with Pakistan.

3. Methodology

In order to draw upon a comprehensive range of information, the study, make use of a variety of resources and methods. This study excepting its conceptual part is based on the data procured from the primary as well as secondary resources. The secondary data have been borrowed from various government and semi-government offices of district, tehsil and block level. The census data and other records are used to get a more general picture of the population profile and employment structure. The basic household survey provides basic information about the village population for the detail analysis of fringe character 16 villages were selected. Eight villages were chosen from each category of fringe i.e. the primary or inner fringe and, secondary or outer fringe. House hold survey from each sample village was carried on by using a detailed questionnaire. In all 300 households were interrogated, taking 20-25 households from each village. The data thus collected from various primary and secondary areas is represented by several cartographic and statistical methods. The results are presented through various maps and tables generated in Arc GIS, and interpretations are sought accordingly.

4. Objectives

Objectives are an integral part of study which needs to be accomplished. To fulfill the aims of present study the main objective is to analyze the expansion of Jammu city and its various impact on peri-urban area leading to change in landuse, social and economic structure of the people living in peripheral area of the city.

5. Results And Discussions

Jammu urban area has been witnessing phenomenal growth both in terms of area and population during recent years. The growth of Jammu city during the last century (1901-2011) has been phenomenal. It has increased from 36,130 persons in 1901 A.D to 5,49,791 persons in 2001 and 5,76,198 persons in 2011 indicating nearly fifteen fold increase amounting 1495 percent growth with a net increase of 5,40,068 persons.

Table 1. Jammu city: Population growth (1901-2011)

Year	Area (kms)	Population	Decadal growth rate
1901		36,130	-
1911		31,728	(- 12.2)
1921		31,506	(- 0.7)
1931		38,613	+ 22.6
1941	4.00	50,379	+ 30.5
1951		76,558	52.00
1961	(18.3) 2560 Acres	1,02,738	34.2
1971	21.42	1,57,908	53.7
1981	61.42	214,737	36.0
1991	NA	NA	NA
2001	150.4	5,49,791	156.2
2011	288	5,76,198	4.80

Source: Census of India 1901- 2001
NA (Not available)

Above shows that the population in 1951 was about 76,558 persons. Between 1951 and 1961 the population grew by about 34.2 per cent. In 1961 to 1981 the growth of population of the city was over 36.0 % and 1981-2001 the population grew to 5,49,791, which amounts to a decade growth of 156.02 per cent. The main factor for this accelerated population growth during this period have been in migration from Kashmir, increase in birth rate and fall in death rate. This distinguishes Jammu as the fastest growing urban area in the country which introduces urban agglomeration concept which brought a number of rural areas under the jurisdiction of Jammu city. The ever increasing population coupled with limited space and haphazard growth has resulted in unwieldy expansion of the city which is reflected from the fact that the city has only 4 sq km area before independence which spread to 18.30 sq. km, in 1969 which further increased to 21.42 sq kms in 1970 and now expanded to 288 sq. kms. Therefore, registering an increase of 284 sq. km during last 50 years.

As per provisional reports of Census India, population of Jammu in 2011 is 5,76,198; of which male and female are 2,65,346 and 2,38,344 respectively. The sex ratio of Jammu city is 898 per 1000 males.

In education section, total literates in Jammu city are 4,13,366 of which 2,25,410 are males while 1,87,956 are females. Average literacy rate of Jammu city is 89.66 percent of which male and female literacy was 93.13 and 85.82 percent.

Table 2. Demography of Jammu City (2011)

Jammu City	Total	Male	Female
Population	503,690	265,346	238,344
Literates	413,366	225,410	187,956
Children (0-6)	42,655	23,317	19,338
Average Literacy (%)	89.55	93.13	85.82
Sex ratio	898		
Child sex ratio	829		

Source; Census of India 2011

Total children (0-6) in Jammu city are 42,655 as per figure from Census India report on 2011. There were 23,317 boys while 19,338 are girls. Child sex ratio of girls is 829 per 1000 boys.

Jammu city is governed by Municipal Corporation which comes under Jammu Urban Agglomeration. Although Jammu city has population of 503,690; its urban/metropolitan population is 651,826 of which 350,035 are males and 301,791 are females.

The outgrowths beyond the Municipal Limits:

Sometimes outside the limit of Municipal towns certain specialized functions develop that these areas cannot themselves qualify to be treated as town, but they are treated as outgrowths (OGs) by Census Department. These outgrowths may be either totally new developments or overgrown and transformed rural settlements under the impact of Municipal body. The growth of the outgrowths depends on the size, function, location and direction of inter urban interaction. The population of its constantly changing in the fringe area as it is developing rapidly. The number of outgrowth have increase from 6 in 1981 to 36 in 2011. It is also clear from the table that absolute population of the outgrowth has increased from 8602 to 1,88,614 from 1981 to 2011.

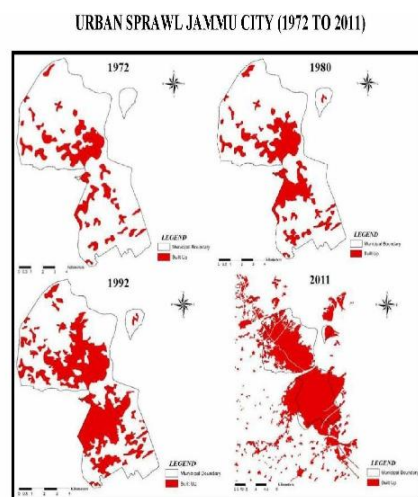
This outward expansion of the city engulfs several fringe villages (OGs) allowing them to remain intact and compact as village pockets in urban dynamics.

The rural area of Jammu on the periphery of the city has special significance. Jammu district has 1192 villages, out of which 1054 are inhabited. More than 1/4th of the villages, city is expanding very fast in size and shape. The urban extensions have engulfed many more rural areas especially towards the southern side. As a rough estimate, more than 1000 ha of agricultural land is being converted to urban use every year. Urban sprawl is also depleting forest reserves. Ribbon development is occurring towards South on NH-1A and along the railway line. Outgrowth of satellite township i.e. Bari Brahmana, Samba and Birpur is also occurring and the land pockets with defense establishments around the city periphery are also part of sprawl.

Table 3. Outgrowth of Jammu city 2001;

Outgrowth	Population	Outgrowth	Population
Nagrota	10357	Chatha	5720
Kamini	596	Rakh Raipur	141
Khanpur	1098	Chak Gulami	241
Setani	789	Gujral	3051
Narwal Bala	6696	Hazuri Bagh	669
Rakh Bahu	3718	Palora	21300
Chhani Rama	11901	Muthi	10027
Thabgad	760	Barnai	4182
Chhani Hemmat	18125	Dharmal	1985
Chhani Beja	5252	ChakChangadwan	9373
Gadi Garj	3592	Bhore	5877
Chhani Kamala	2846	Chinore	2950
Chak Talu	2299	Chawadi	2914
Sunjwan	9708	Keran	1990
Chak Kalu	5853	Gangial	4948
Deeli	10686	Digiyana	1404
Satwari	2499	Raipur	1096
Narwal Pain	113	Rakh Gadi Garh	4365
Gadi Garj	3592	Bhore	5877

Source: Census of India 2011



Map 6.1

* Source: Official Website of Jammu University, Department of Remote Sensing, University of Jammu, Jammu.

Table 4. Outgrowth of Jammu city 1981 (Population)

Nagrota	2486
Satwari	1951
Narwal Bala	989
Digiyaana	2500
Khanpur	410
Kamini	266

Toph Sherkhanian, Chinore were uninhabited.

This urban expansion swallows villages, transform agricultural land into either residential or industrial land. Among several changes that occur in the fringe, those related to land use, economy and social change are more important.

Jammu city, in its process of expansion has exerted its impact on the development of the country side and more or less determined the character of social, occupational, agricultural and commercial pursuits. Jammu city provides various facilities not only for the population of its urban area but also for the villages lying its vicinity. It is the centre of various functions pertaining to education, health and medical facilities, administrative and commercial activities. There exist advanced medical facilities, including, intensive care units for specialized treatment, as well as emergency services to the victim of accidents. Tele-communication and several other modern facilities are also available in a large city. The rural population living in the fringe area is also benefited considerably by these facilities of the city. All the urban facilities remarkably affect the population of the fringe area. On the other hand, city also receives many articles of its daily use from its fringe such as milk, fruits, vegetables, cereals etc. in addition to the servants and labourers. There establish a reciprocal relationship between the city and its fringe area.

Impact on land use pattern:

Rapid urbanization and increasing land use changes due to population and economic growth in selected landscapes is being witnessed of late in India and other developing countries. The cities are expanding in all directions resulting in large scale urban sprawl and changes in urban land use. The spatial pattern of such changes is clearly noticed on the urban fringes city peripheral rural areas than in the city center. In fact, this is reflected in changing rural urban land use patterns. The land use pattern of surrounding villages and their agricultural specialization are invariably influenced by the need of city. Agricultural pursuits are the most outstanding land utilization and significant economic base of among the fringe villages, of the Jammu city. The traditional agriculture is being converted into cash crop farming and the non-agricultural land uses are gaining importance in the study area. The impact of the city on the fringe villages, have modified the traditional pattern of intensive cultivation. Due to the improved and high yielding variety of seeds provision of various types of manures, increase in irrigation facilities, double, triple as well as mixed cropping has been practiced. Remarkable impact of Jammu city has been observed in the cropping pattern of the fringe villages. Due to the awareness of the latest development and advanced techniques researched out in the institute of SKUAST (Sher-e-Kashmir University of Agricultural Sciences and Technology) farmers are now giving way to the crop rotation, mixed, double and triple cropping system. Increasing demand of the food grain and fragmentation of land holdings, intensive cultivation in the fringe belt has been practiced. More land is brought under commercial crops like vegetables and fruits, oilseeds and pulses due to the availability of cheap transportation. The main motive of the fringe dwellers is to earn more profit by immediate selling of their farm products in the city.

Table 5. Type of Cultivation in Peri- Urban Zone

Distance from the Core of City	Type of Cultivation	
	Cash Crops Vegetables and Fruits in Percentage	Food Grains in Percentage
4 – 6	84	16
6 – 8	72	28
8 – 10	61	39
10 – 12	48	52
12 – 14	42	58
14 – 16	30	70
Above 16	20	80

Source: Field Survey 2011

Above table shows relationship between distance and the proportion of cash crops grown in the fringe village, it is observed that the villages falling 4-6 kms distance from the city center are deeply influenced as about 84% of their total cultivated land has been devoted to the perishable vegetables e.g., tomato, pumpkins, cabbage, cauliflower, ladyfinger, brinjal, green peas, etc. and durable vegetables onion, potato, fruits like melon, papaya, guava, mango, etc. as well as cash crop production. Only 16% of the land area has been remained under food grains. The roadside villages of the fringe area have devoted their 95% of cultivated land under fruits, vegetables and cash crops whereas the interior villages have only 85%. About 72% of the cultivable land is devoted to cash crops between 6-8 kms distance of which roadside villages share more viz. Aquilpur, Sangrampur, Patnihal, etc. The cash crop production decreases with the increase in distance from city. The belt lying between 8-10 km, 10-12 km range show less interest in cash cropping. Only 61% and 48% of the cultivated land is devoted to cash crop farming while the remaining is under the cultivation of food grains. The people living in the range of 12-14 km or 14-16 km range find it difficult to commute daily with the city, the put only 42% and 30% of the cultivated land under cash crops. Beyond the distance of 16 km only 20% of the cultivated land is devoted to cash cropping. Among them only few villages, through which the road passes have active contact with the city. The fringe belt beyond 18 km has least influence of the city. The green vegetables being perishable in nature require immediate selling, which is least possible from these villages. The factor which favour the rate of cash crop production with the increasing distance is easy accessibility people living close to the city i.e., upto 16 km distance commute daily by city bus, cycle, rikshaw and even on foot and return late in evening but the farmers living away from the city visit city market only twice or thrice in a week.

Another remarkable impact of Jammu city has also been observed on the fringe villages in the form of establishments of several brick-klin. These brick-klin consume large fertile cultivated land and convert them into derelict land. This is indeed a worse impact of city on the fringe area. But the emergence of the brick-klin in the nearby fringe area is the result of expansion of the city, which in turn require building material from nearby area.

Economic Impact:

Due to the urban sprawl the impact on the economy of peri-urban villages of Jammu city has been observed mainly along the axial route. The urban economic functions have affected the firm of agriculture. The land which has once devoted to the cropping of cereals is now converting into the intense cash crop farming, i.e., fruit, vegetable and some remunerative crops such as lemon, guava, potato, flowers, cucumber, oilseeds, etc. In this reference the observation of rural-urban fringe villages of Jammu are notable.. Due to the impact of the city the area under non-farm uses may increase further resulting in further decline in total cultivated land. In this way, the villages near city of Jammu transform its economy and may be incorporated in the urban agglomeration.

With the incoming of the city-buses, auto-rickshaws the distance factor has been reduced, giving rise to residential decentralized from Jammu city to the surrounding fringe area-simultaneously the decentralization of commerce and industry is also taking place in similar pattern and may yield the place to secondary and territory activities. The shift had been mainly from the agricultural to non-agricultural occupation and services. The occupation character of fringe villages which was entirely rural, has changed due to the impact of the city. Jammu city being urban centre offers diverse employment opportunities. The unemployed labor from the agricultural sector of the fringe villages diverted towards the city where they easily get the job of chaukidar labourer, construction workers, artisans etc. Besides this the skilled or educated persons of the fringe villages are absorbed a clerks, accountants, typists, high official and administrative officers is various institutions of the city.

Table 6. Percentage of Non- Agriculture Workers in Peri-Urban Zone

Distance from City	Percentage of Non-Agricultural Workers
4 – 6	89
6 – 8	85
8 – 10	83
10 – 12	77
12 – 14	74

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14 – 16	69
16 – 18	68
18 – 20	65

Source: Field Survey 2011

The economic impact of the city varies according to the distance of the villages from the city. Above table depict that the percentage of non-agriculture workers decreases as we move away from the city. It is clear from the above table that the highest percentage of nonagricultural workers i.e. 89%, including office workers, labourers, handicraft workers, milkmen, rickshaw pullers etc. is found between the zones of 4-6 kms as this zone has great influence of the city and has good opportunities of jobs and employment in different sectors of city. About 85 percent of total workers of fringe area are engaged in non-farming activities in 6-8 km zone. Similarly in 8-10 km zone the percentage of non-agricultural workers is 83. But in 14-16 km zone the nature of fringe area is slightly change, the percentage of non-agricultural workers is decreases to 69 % and about 31% of total workers are engaged in farming activities, further the percentage of nonagricultural workers decreases to 65% in 18-20 km zone. The percentage of the nonagricultural workers goes on decreasing with increasing distance from the centre of city. Most of the workers prefer jobs in the nearby villages because of the difficulty in daily commuting to city.

Impact on Social Structure:

The social and cultural aspects of the fringe villages is governed by the social structure of the city. The rapid economic change occurring in the fringe area is a sole fact or for modifying the social structure to a great extent. It is indeed the economic status of an area which determines its social status. The social impact of city on the fringe area can be analysed through number of variables.

Population growth, sex ratio, population density, educational facilities, presence of urban amenities and changing traditional social structure.

The population is constantly growth in the fringe area due to two causative factors:

- (i) Improved Medical and health care facilities
- (ii) Immigration from the rural areas

Increasing literacy rate is also one of the most important aspects of the social structure. The female are now acquiring equal status gradually and are also being provided with the opportunities and facility for receiving higher education through establishment of many prestigious public convent schools also mass awakening toward education. A large number of District Board schools, middle schools and many technical colleges have been established in the Rural-Urban Zone; these altogether improve the literacy conditions in the fringe zone.

The students from the fringe area are now attracted towards university education to study medical sciences, agriculture, engineering, business management, computer science and several other advanced courses in the city. The state even has the distinction of providing primary school facilities at a distance of one kilometer as against the all India norm of two kilometers (National Sample Survey report, 1991). Therefore, it can be asserted that it is the education which has influenced the course of behaviour of both society and its individuals in the region. The dwellers of fringe area are now finding the employment in different offices of the city and make their residence there. Most of such villagers have attained good living standard whenever vrit their native place, they substantially influence the new generation. The housing condition as well as urban amenities in the fringe area has also been affected by urban impact. Improved communication link with the city and availability of heaper brick kilns in the fringe area has been responsible for it. Urban amenities have also been brought in the fringe villages. Fringe populations now avails usually the medical aid from the primary health centres situated in the villages. Some registered doctors have opened their well-equipped dispensaries in different parts of the fringe area along major roads.

The drinking water facility has also being improved in the fringe area. All the villages of the fringe area are now provided with the water tap facility. Most of the villages are having hand pump facilities. Sewage system is also slowly developing in some village especially of primary fringe village. The government is also helping villagers to have their own soak-pits and sewage disposal system. Many brick paved roads are being constructed now by villages chiefs (Grampradhans) through the financial aid provided under 'Jawahar Rojgar Yojana'.

Not only that, the other facilities like extension of newspaper, telecommunication and postal services in the fringe villages have created positive change in their social and cultural landscape. With the increasing impact of urban life of city. The traditional social structure in the fringe village of the Jammu city is crumbling down. Jammu city constantly influencing the social and cultural life and creating awareness among the people of its rural-urban fringe. Fringe dwellers are greatly influence by urban way of life. The joint family system is being replaced by nuclear family system, social evils like untouchability, castism are being uprooted. Due to increased economic opportunities, social and human values are fastly changing, hereditary occupations based on castes are also being vanishing fast.

6. Conclusion

The impact of urban sprawl upon peri-urban society will inevitably enhance the economic efficiency of its people and accelerate their living standard as in past too. The continuity of these impacts will be in full swing; then undoubtedly these peri-urban villages will be able to join the mainstream of the city life. Life in the villages of this zone is in the phase of transition. The traditional life and ethical values which once well-known framework of harmonious life in Indian villages are now transformed to cope with the new waves of changes and valuation of life in which consumerism, individuals and market-oriented life ways are the common consequences.

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