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POPULATION GROWTH AND ENVIRONMENTAL DEGRADATION IN AJMER CITY

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ABSTRACT

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Keywords: Population growth, Density, Urbanization, Slums, Pollution. The presented paper examines the relationship of population to the environment and with growing population, poverty and urbanization the environment is degrading. The study reveals that the city population growth is imposing a burden on the nature of the natural resources. Ajmer population growth in the decade was 18.48% (Total population 2011- 542321). This compares to a growth figure of 20.93% for the previous decade. This growth does not cope with sanitation, hygiene and civic amenities and pollute or degrade the urban environment. Ajmer is situated in the cradle of the Aravalli mountain ranges in the center of Rajasthan. Lack of access to planned space to the urban poor, has resulted in the encroachment on the hill slopes, especially on Taragarh hill and water bodies. The encroachment on the hills especially along the course of natural drains lead to pollution and choking of the drains and lead to change in the city effecting the green belt area deforestation, misuse of the land and plugged drainage system all give a bizarre look to the city. The study is to bring about basic understanding of some of the ecological and demographical issue.

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INTRODUCTION

The world's population will rise to 11.2billion by 2100 from the current 7.6 billion, latest projection put out by United Nations population division suggest. A billion have been added since 2005, and another billion are likely to be added by 2030, according to forecast. India's population currently estimated at 1.34 billion is projected to rise to 1.51 billion by 2050 before declining to 1.52 billion by the end of the century. Ajmer city also recorded average 20% decadal population growth, and with growing population poverty and urbanization the environment is degrading. The study reveals that the city population growth is imposing burden on the natural resource. The growth does not cope with sanitation, hygiene and civic amenities and pollute or degrade the urban environment .The three fundamental Demographic factors of Births, Deaths and Migration produce changes in population size , composition, distribution and these changes raise a number of important questions of cause and effects.

Population Growth

The Population of Ajmer city is rapidly increasing and truly speaking the pressure of population has been responsible for the ill growth of the city from 1941 onwards the population increase is enormous and beyond the vision of the planners which is evident from the table. Since 1931 Ajmer has exhibited a rapid growth .During 1931to 1941 the population increased by 23.2 percent. The growth of military activities and industries related to war effort, the scarcity of general consumer goods and the consequent rise in price gave an incentive to the movement of population in the city. The low death rate 32.7% as against the mean decennial birth rate 37.1% is also an important factor for population growth.

Table 1. Decadal Population Growth Rate

Year	Population	Decade variation	Decade growth rate%
1901	73849	4996	7.24
1911	86222	12373	16.75
1921	113512	27290	31.65
1931	119524	6012	5.30
1941	147258	27734	23.20
1951	196663	49405	33.55
1961	231240	34577	17.58
1971	262851	31611	13.67
1981	375393	112742	42.89
1991	402700	27107	7.22
2001	485575	82875	20.53
2011	542321	56746	11.69

(Ref. Census 2011)



(Ref. Census 2011)

Figure 1. Population Composition of Ajmer City (2011)

The period 1941-51 shows a very amazing increase in the population. The censuses recorded an increase of 33.53% over the last decade. Migration and influx of refugees and displaced person from Pakistan and the natural growth are the reason with may be attributed to this increase. The growth rate during the decade 1971-81 jumped to 42.11%, this is due to the increase in the municipal area and increase of the development of trade, industries and transport. Migration from the rural areas and the decrease in the death rate are the main cause of this growth. The decade 2001-2011 shows a moderate growth rate of 11.69%. This compared to growth figure 20.53% for the previous decade.

Religion-wise Population Composition in Ajmer

Hinduism is major religion in Ajmer city with 83.53% followed by Islam, the second most popular religion in the city, with approximately 11.58% following it. Christianity is followed by 1.26%, Jainism by 2.50%, Sikhism by 0.94% and Buddhism by 0.94%, around 0.01% stated other religion approximately 0.12% stated no particular religion.



Ref. Census 2011

Figure 2: Religion-wise Population Composition in Ajmer

Population Density in Ajmer

Ajmer is a low density city with a highly dense inner core, with population density of over 50,000 persons/sq.km. The Anasagar zone consisting of Anasagar area, Vaishali Nagar and Chaurasiyawas have the lowest density of less than 2,000 persons/sq.km. While the gross average density of the city is 5,750 persons/sq.km. In 1991 there were 45 wards in Ajmer; however the wards were increased to 55 in 1995. In 2015 the wards were increased to 60.

Urban Growth

Ajmer has evolved around a religious core synonymous with the city. In its present form the city constitutes of an organic inner city which is distinct in its character from the peripheral area which has developed in the last two centuries. The advent of railways in 1870-85 marked a turning point in the history of growth and development of the city. It generated large scale employment in the workshops besides triggering growth in construction activity. High influx of refugees from Pakistan after independence resulted in sharp population increase and haphazard growth of the city. In 1960s the establishment of Regional College, Medical College and Hindustan Machine Tools accelerated the growth of the city. With the setting up of Urban Improvement Trust in Ajmer in 1962 new developments took place. In 1970-80 Shastri Nagar, Shastri Nagar Ext., Bhagwan Ganj, Vaishali Nagar, Anasagar Circular Road, Dhola Bhata residential project were developed.

In 1980-90 Jwala Prasad Nagar, Arjunlal Sethi Nagar and M.D. Nagar colonies were planned. 1990-2005 witnessed the growth of H.B.U Nagar, B.K. Kaul Nagar, Chandravardai Nagar, and Maharana Pratap Nagar. 2005-2015 Witnessed the growth of Panchsheel Bloack A-E, Prithviraj Nagar Yojana, Pragati Nagar Kotra, Patrakar Colony, Kotra, Kayad. Ajmer is situated in the cradle of Aravali mountain ranges in center of Rajasthan. Lack of access to planed space for the urban poor, has resulted in encroachment on the hill slopes especially on Taragarh hill and water bodies. The encroachment on hills especially along the course of natural drains lead to pollution and chocking of the drains and lead to change in the course of drain which effect the in flow into the lakes. The population growth also dropped many related problems such as acute shortage of accommodation, both residential and non residential, traffic congestion lack of sanitation and other community facilities and amenities etc. Population growth is contributing to many serious environmental problems, these mainly include pressure on land, soil and forest degradation and water pollution in the water bodies mainly Ana Sagar.

Land use

Comparative analysis of land use would indicate the extend of impact of population growth as the land use development is directly linked with the population size. The analysis of table 2 shows the changing land-use pattern in Ajmer. Residential use is the most pro-dominant land use of the master plan. The plan envisaged the development of 7250 acres of under residential use but 6000 acres have developed during the plan period it is observed that this use has developed much faster than other uses as a result, areas set apart for other uses have been overtaken by residential use.



Figure 3. Ward Wise Distribution of Population in Ajmer City



Figure 4. Working Population in Ajmer City (2011)



Fig: Expansion of Ajmer city and outgrowth of Urban Area is shown in red circle

Urban Growth in Ajmer City 1989-2015



Figure 6. Urban Sprawl of Ajmer City 1989-2015

Table 2. Land-Use Pattern of Ajmer City

AIVALISIS OF LAND USE FATTERIN							
S.NO.	LAND USE	PROPSED IN MASTER		ACTUAL IN MASTER			
		PLAN		PLAN			
		1971-2001		2001-2023			
		Area in	%age of	Areas in	%age of		
		Acres	Development	Acres	Development		
1	Residential	7250	50.8	6000	52.26		
2	Commercial	500	3.4	564	4.96		
3	Industrial	1560	10.9	586	5.10		
4	Government	120	0.9	140	1.22		
5	Public/Semi Public	1750	12.2	1571	13.68		
6	Recreational	840	6.0	138	1.20		
7	Transport	2260	15.8	2483	21.63		
	Total	14280	100	11482	100		

ANALYSIS OF LAND USE PATTERN

Source - Master Plan 1971-2001 and 2001-2023

The spatial analysis indicates that residential use has developed in almost all other use ie commercial and open space etc. the main reason for this is the development of residential use through cooperative societies, which have developed land in violation of master plan.

Slums: In Rajasthan only 25 cities/towns have been identified having slums.Municipal authorities of Jhunjhunu ,Churu, Bhilwara, Bundi, Dholpur, Ganganagar, Gangapur, Hindaun and Tonk have reported nil slum population ,Jaipur Nagar Nigam records the highest number of slums dwellers In absolute terms. Census 2011 records 59 slums areas in Ajmer city. Total population living in these slums areas recorded 106221 that is 19.59% of the total population of city

Traffic congestion: Traffic congestion is a common problem in Ajmer because of narrow streets and uneven roads, The problem of traffic pressure is in very critical position in high density areas, the streets are so narrow that only single person at a time can enter inside. The traffic in the city usually becomes uncontrolled because of street traffic pressure main roads of the city are also less wide as compared to population and increase in the number of vehicles in city. Though to avoid the more pressure on the roads, bypass road is constructed on N.H.8 for Ajmer Beawar-Nasirabad. Ajmer bus stand is situated in the center of city and therefore busses passes through the city. The center of city Parao and Kesarganj area is situated and becomes grain market. In these areas small and big trucks are entering in these areas. Similarly there is no adequate arrangement of parking in the city.

Impact on water bodies: There are numerous water bodies and lakes of which there are man-made lakes. Two are confined in the municipal area and remaining one lie outside

the municipal limits those are mainly Anasagar Pal-Bisala Talab and Khanpura Talab. Due to the population pressure has unrestrained development activities the area of these lakes has started shrinking and lakes BASALA become extinct. Anasagar, which forms the focal point of the city, was created during the rule of Anaji (after whom the lake was named) by building a dam across the Bandi river. Anasagar acted as the natural boundary in the north-west direction and the city historically grew towards the southern direction, downstream the lake created by the dam. The Anasagar zone is bowl shaped and geographically detached from remaining part of the city by small hillock between Shashtri Nagar and Vaishali Nagar and further towards Bajrang Garh, Babugarh hillock thus forming a lake, presently known as Anasagar Lake. In Anasagar zone, there are three main storm water channels known as Kazi ka nallah, Bandi Nadi and Anasagar escape channel. The first two feed into Anasagar Lake. Kazi ka nallah generally discharge water from the hills and nearby areas in to Anasagar Lake. Bandi River discharges storm water from the hills and carries overflow from the Foysagar Lake to Anasagar Lake in case of heavy rainfall.

The overflow from Anasagar Lake is conveyed by Anasagar escape channel to Khanpura Pond. It is noticed that all drains in this Zone, have a major problem of waste water inflow and dumping of solid waste. Due to the absence of proper sewerage system the drains carry municipal wastewater and finally discharge into Anasagar Lake, thus resulting in poor water quality of the lake. Mostly the drains are choked with municipal solid waste, silt and sullage. Apart from this, it is noticed that the hills surrounding Ajmer, have very steep slope and does not have adequate vegetation cover causing heavy run-off and soil erosion, which results in silting of drains and subsequently of the Anasagar.

Comparative Analysis of Impact on Water-body (Anasagar Lake)



Figure 7. Satellite View of Anasagar Lake 2007 & 2017

- The Two images show the effect on main waterbody of Ajmer Anasagar Lake.
- The 2007 image show the dried up fresh water lake.
- The 2017 image shows fully filled turbid water in Anasagar Lake. It contains sewage and waste water from whole city and as a result it does not dry up nowadays.

Key Issues

Apart from the resident population, the city has a high floating population (avg. 1.25 Lakh/month, i.e. approximately 4000 tourists/day).

Being the District and the Division Head Quarter, the numerous administrative functions result in regular floating population from the entire district.

During Urs, daily tourist traffic goes upto 30,000.

Besides this the residential schools like Mayo College, Sophia school and engineering and medical colleges also generate transit population into the city.

In absence of any major trigger for migration, population growth in the city has been at a moderate rate. Should the economy pick up in the city, Ajmer will witness significant inward migration pressure.

Summary and Conclusion

The outcome of high population growth rates are increasing number of people below poverty line, an increase in population density, and pressure on natural resources. It will increasing difficult to satisfy the basic needs of a growing population even at present levels of consumption and the situation will deteriorate progressively as the per capita resources increases. The environmental consumption of effects like pollution not only lead to deteriorating environmental conditions but also have adverse effects on the sustainable development and health of the people. The considerable amount of ground water and surface water contamination due to chemical fertilizers and insecticides in the city leads to various water borne diseases. The growth of population is fundamental factor in its relationship to natural resources, environment and technology. To sum up, there is an urgent need to control population and poverty, conserve and protect natural resources and the environment for healthy human beings.

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