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REGIONAL POPULATION GROWTH AND RESOURCE ISSUES DUE TO SOCIO ECONOMIC DEVELOPMENT IN RANCHI CITY : A CAPITAL TOWN OF JHARKHAND

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ABSTRACT:

Jharkhand state was formed on 15th November 2000 as separated from Bihar state. Ranchi city is capital town of Jharkhand which is also known for its natural beauty and water falls in nearby areas. After the formation of Jharkhand state Ranchi city has experienced tremendous changes in approximately last 20 years due to socio economic development. The most important consequence of socio economic development is urbanization causes rapid population growth and resource issues in Ranchi city. Jharkhand state is very rich in different mineral resources including forest resources. Jharkhand state is also an indigenous place of many tribal communities. Therefore it is also known as tribal state whereas 26.30% (census 2011) population is tribes in the total population. In Ranchi city total tribal population is 217024 (census 2011) which is 22.22% of total population. Socio economic development of Ranchi city is affecting different resources mostly water resources, land resources and vegetation resources.



With this background, the paper provides a brief overview of regional population growth and related resource issues in Ranchi city. It discussed about how it is a big challenge to maintain a balance between regional population growth and availability of resources. All the data has been taken from secondary sources. This paper also focuses on some traditional methods of resource conservation followed by tribal people which can be helpful in resource management. Finally it concludes with a framework and some strategies which help to make balanced between resource management and population growth in Ranchi city.

KEYWORDS: Population Growth, Resource issues, Socio Economic development, Urbanization, Resource conservation, Tribal population.

INTRODUCTION

Now present day's urbanization is a common phenomenon of socio economic development of any particular area. Urbanization is a process which increases in population as well as resource consumption at the same time. In

fact rapid and accelerated growth of urbanization means phenomenal increase in the concentration of urban settlements in limited space. Urban settlements also encourage many Apartments, Shopping malls, six lane and

four lane roads, Basic infrastructure and rapid growth in resource consumption such as water resources, land resources, vegetation resources etc. After the creation of Jharkhand as 28th state of Indian Territory this region have been witnessed

various changes such as politically, socially and economically. Ranchi city the capital town of Jharkhand is also facing the same phenomena such as rapid population growth and resource consumption. Jharkhand state is also known for its tribal people who are aborigines of this region. Total 32 tribal communities are found in Jharkhand and represent 26.30% (census 2011) tribal population of India. Total population of Ranchi city is 1073427(census 2011) whereas tribal population is 27024(census 2011) consist 22.22% of total population. All these tribal and non tribal communities are affected by urbanization and resource issues due to socio economic development.

OBJECTIVES:

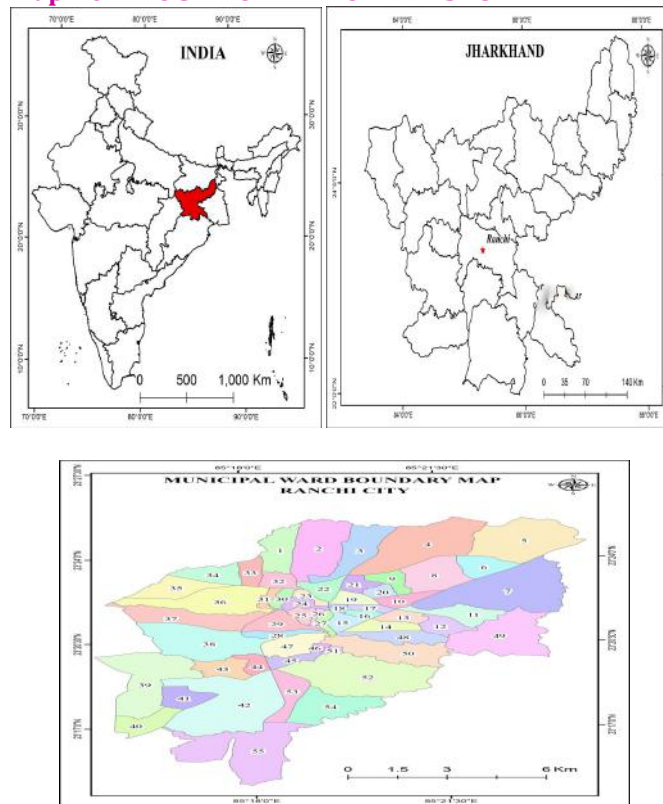
The main objective of this paper is

- To study about population growth pattern in Ranchi city with especial reference of tribal population and total population.
- To examine the impact of urbanization on resource consumption.
- To study the land use shifts and its effect on water bodies.
- To suggest some measures for the sustainable development in study area.

STUDY AREA:

Ranchi city is famous for its natural beauty, pleasant weather conditions and its tribal culture. Ranchi city is located at 23°35’ N latitude and 85°32’ E longitude. The average elevation is 651m above sea level. The Ranchi city is located in the southern part of chotanagpur plateau. The main river system in Ranchi city is The Subarnarekha, The Potpoto, The Jhumar, The Harmu, The Sapahi and The Pandra River. Ranchi has a hilly topography and dense tropical forest. It has a humid sub tropical climate, but its location, hilly topography and the forest surroundings combined to give it a comparatively moderate type of climate as compared to the other parts of the Jharkhand state.

Map No. 1 LOCATION MAP OF THE STUDY AREA



DATABASE AND METHODOLOGY

Methodology adopted of a present study is both qualitative and quantitative. In order to study of urbanization and resource issues researcher use primary and secondary data both. A few qualitative techniques are also proposed to be used in gathering primary data/information from the respondents. Secondary data available through agencies like, National sample survey, Census of India and Central Statistical Organization.

POPULATION GROWTH PATTERN IN RANCHI CITY

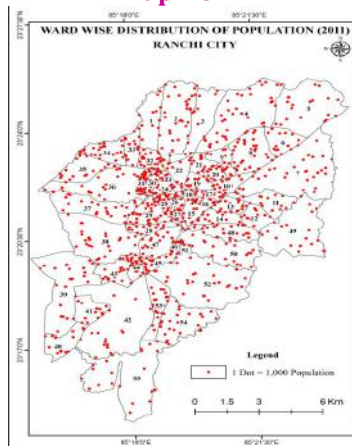
Population growth of Ranchi city shows historical aspects. During British period around 1834 some of the headquarters were shifted from Lohardaga to Ranchi regarding the administrative convenience. After that Ranchi Municipality was established in 1869 covering an area of 6 Sq. Km with total population of approximately 12086. After the Ranchi Municipality, RRDA (Ranchi Regional Development Authority) was created in 1975 for urban expansion and development in Ranchi city. Urban population growth in Ranchi city was highest between 1971-1981 with decadal growth rate of 82.21 % and 91.60% in the respective year. During this period urban area was also increases with 124.39 Sq. km and became 173.00 Sq. Km in census 1991. This time period was basically golden period for industrial development and related factors like transportation facilities, employment, basic infrastructure, human settlements etc. After the formation of Jharkhand in 2001 decadal growth rate was 41.24% with an area of 175.19 Sq. Km. At present according to census 2011 total population of Ranchi city is 1073427 with 24.36% of decadal growth rate. Total area of Municipal Corporation (census 2011) is 177.19 Sq. Km and it is divided into 55 wards. Ranchi city is also inhabited of many tribal communities whom are indigenous people of this region. These tribal communities are well known for their culture, rituals and unique identity and also affected by industrialization and urbanization in terms of population growth. All these details are categorized into following table.

Table-1 Tribal population ratio in total population 2001-2011

Census Year	Total no. of households	Total population	Tribal population	Tribal population Percentage of total population
2001	144882	847093	173915	20.53%
2011	207636	1073427	217024	20.22%

Source: Municipal ward secondary data of Ranchi city.

Map No. 2



Map No. 3

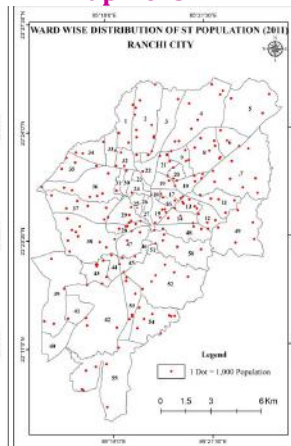


Table-2 Population growth in Ranchi city 1871 - 2001

Census	Total Population	Increase in population	Decadal Growth Rate (%)
1871	12086	-	-
1881	18443	6357	(+) 52.06
1891	20306	863	(+) 10.01
1901	25970	5664	(+) 27.05
1911	32994	7024	(+) 27.05
1921	39628	6634	(+)20.11
1931	50517	10889	(+) 27.48
1941	62562	12045	(+) 23.84
1951	106849	44287	(+) 70.79
1961	140253	33404	(+) 31.26
1971	255551	115294	(+) 82.21
1981	489626	234075	(+) 91.60
1991	599306	109680	(+) 22.40
2001	863180	264148	(+) 41.24
2011	1073427	210247	(+) 24.36

Source: District Census Handbook Abstract, 1981 and Census of India

Table-3 Ranchi City - Spatial Growth 1869 - 2011

Year	Area (Sq. Km)	Increase (Sq. Km)	Growth per Year (Sq. Km)	Time periods (years)
1869	6.00	-	-	-
1965	43.44	37.44	0.38	96
1971	48.61	5.17	1.29	6
1991	173.00	124.39	6.21	20
2001	175.19	2.19	0.21	10
2011	177.19	2.00	0.20	10

Source: Municipal ward secondary data of Ranchi city

Due to this urban expansion and population growth of Ranchi city many resource issues have been generated in this region. In this paper author has discussed recourse issues related to land, water and vegetation in Ranchi city. Firstly author has discussed about changes in land use pattern in the study area in following paragraphs.

Changes in land use pattern in Ranchi city

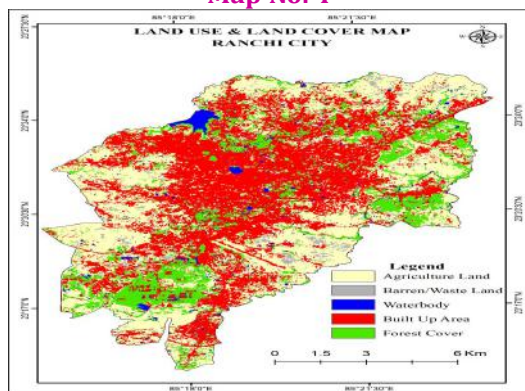
Changes in land use pattern due to urban expansion are common phenomena in Ranchi city. In 1978 residential area was 2360.24 acres which is increases 12754.39 acres in 2011. Industrial area is also increases from 363.56 acres in 1978 to 1280.00 acres in 2011. An institutional land use category was representing 234.77 acres in 1978 which is now 1641.07 acres in 2011. A defense land use category covers an area of 91.99 acres in 1978 which increases 1657.06 acres in 2011. Thus the present scenario of Ranchi city in 2011 is mostly covered by residential area, industrial area, institution area, governmental area, commercial area, defense area and also agricultural area. In 1978 most of the area of Ranchi city was generally covered by residential area, agricultural area, commercial area and industrial area with few acres land. These changes are effects of industrialization and urbanization due to socio economic development of Ranchi city. This changing pattern of land uses is represented in following table.

Table-4 Land use Categories in Ranchi city

Land use Categories	1978 (Area in acres)	2011(existing land use) area in acres	Variations in areas (1978 - 2011)	Proposed land use 2037 (area in acres)
Residential	2360.24	12754.39	10394.15	41561.46
Commercial	405.79	540.04	134.25	887.0
Industrial	363.56	1280.00	916.44	5708.99
Institutional	234.77	1641.07	1406.3	6550.39
Recreational	88.59	623.49	534.9	5797.71
Governmental	272.78	800.05	527.27	1816.22
Other open space	53.25	6417.91	6364.66	14365.17
Forest	-	149.49	-	17876.73
Agriculture	8356	14494.11	2138.11	30643.90
Water bodies	938.72	1079.01	140.29	3879.55
Circulation	888.01	1338.29	450.28	8770.80
Ring road	-	-	-	2577.90
Defense	91.99	1657.06	1565.07	4643.11
Miscellaneous	452.84	-	-	8949.81

Source: Master plan of Ranchi city (1983-2001) and (2013-2037)

Map No. 4



Present scenario of water availability in Ranchi city

Ranchi city is divided into total 55 wards under Municipal Corporation. In above mentioned table no. 4 it is given that water bodies of Ranchi city is covered 1079.01 acre land. Water bodies of Ranchi city is included rivers, water reservoirs and dam. Availability of water in Ranchi city is mainly dependent on water supply connection and ground water. Water supply in the study area is connected with Kanke Dam and Dhrwa Dam. In Ranchi city total 52.73% wards have water supply connection and 47.27% wards are dependent on Ground water for their water requirements. Thus it may be estimated that approximately 50% wards are totally dependent on ground water resources. These details are given in the following table.

Table - 5 Availability of Water in Ranchi city 2017

Availability of water	Total no. of wards	Wards percentage
Water supply connection	29	52.73%
Ground water	26	47.27%
TOTAL	55	100.00%

Source: Ranchi Municipal Corporation 2017

Due to dependency on ground water resources ground water level is varies from place to place in different wards. Different wards show different depth below ground level. Author has divided total no. of wards according to ground water depths into four groups. Minimum 5.45% wards are come the low depth with less than 2 meters below ground level. Moderate and high depth is represented by 43.64% wards in both categories with 2-5 meters and 5-10 meters depth below ground level respectively. Very high depth between 10-20 meters depth below ground level is represented by 7.27% wards. This classification is also given in the following table.

Table - 6 Ground water level (Depth in meters below ground level) in 2016

Depth in meters below ground level	Total no. of wards	Wards percentage	Remarks
> 2	3	5.45%	low
2-5	24	43.64%	Moderate
5-10	24	43.64%	High
10-20	4	7.27%	Very high
TOTAL	55	100.00%	

Source: Central Ground Water Board 2016

Ground water level of Ranchi city is clearly shows that consumption of ground water resources is high comparison to recharge of ground water. Therefore ground water level depth is high and very high in approximately 50% wards of Ranchi city. This scenario is alarming the water resource crises in coming days.

Forest or vegetation resource availability in Ranchi city

In table no. 4 it is mentioned that forest cover land is just 149.49 acre in Ranchi city in present scenario of 2011. This forest cover area is very less comparison to residential areas, industrial areas, commercial areas and other basic infrastructure. Master plan of Ranchi city is proposed to forest cover area should be 17876.73 acre in 2037 which is 0.84% in 2011. According to new national forest policy of India forest cover percentage should be 33% in land use categories for ecological balance in any particular area. But most of the urban centers including Ranchi city are not fulfill this criteria. This causes many other resource issues in the study area.

CONCLUSION AND RECOMMENDATION

The study reveals that due to urbanization in Ranchi city resource consumption ratio is increasing day by day which leads resource issues in the study area. Land use pattern is also changing with industrialization and commercial development. Now these days most of the area in generally covered by “concrete jungle”. Residential areas and basic infrastructure is occupying most parts of the land whereas open space, vegetation cover and water resource area are shrinking. Thus researcher leads to conclude that demands of natural resource are continuously increasing but recovery of these natural resources is very low. Most of the population of Ranchi city approximately 50% is dependent on ground water resources for their requirements. This scenario leads to decreasing water level day by day because recharge ratio of underground water level is very low. Urbanization is also affected the vegetation cover area which leads to ecological imbalance. All these aspects are warning bells to think about the consequences of depletion of many natural resources. Therefore author wants to give some recommendations which are also proposed by the Municipal Corporation of Ranchi.

- Increase the forest cover area in the study area through social forestry and urban forestry.
- Improve the present surface water sources and also construct check Dam and water reservoirs to fulfill the increasing demand of water.
- Rainwater harvesting should be compulsory in every households which area is more than 3000 sq. feet (Proposed by Municipal Corporation Ranchi) to recharge ground water.

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- Construct short pit between drainage networking of urban areas at distance of 25-30 m for infiltration (Proposed by Municipal Corporation Ranchi) by Governmental projects.
 - Unnecessary construction should be restricted in the recharge zone of the study area.
 - Proper utilization of resources should be adopted by each and every people.
 - Public awareness programmed regarding this crises should be introduce to know about the sustainable development in this regard.

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