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International Border Influences: A Geographical Analysis

Abstract

This research paper is an attempt to discuss and analyze the geopolitical impact of the Radcliff line – The Indo-Pak border lying north west of India, shared by two very important nations of the South Asia: India and Pakistan. The main objective of the study is to investigate the urban development gaps existing between Border districts of Rajasthan and its core regions. The International borders have a mixed, region specific and town selective impact on the process of urbanization in the western part of Rajasthan. International border making is a politico-bureaucratic and a securitized exercise. Though India is among the most fast growing economies of the world but its border security is a major concern. That is why its border areas are quite less developed as comparative to its interior regions as areas under border situation suffers more in their growth than the ones which are away from it, especially when the bordering countries are not in cordial terms with each other. This research paper is an attempt to identify the spatial-temporal changes of LULC in the border districts of Rajasthan through Remote Sensing and GIS techniques, to analyze the Geopolitical implication of international border on the urbanization pattern of border districts of Rajasthan. In spite of resourcefulness the border districts are not equally developed. Ganganagar and Bikaner have high urban and economic growth as compared to Jaisalmer and Barmer.

Keywords: LULC, Geopolitical, Securitized, Politico-Bureaucratic.

Introduction

India and Pakistan are two strong and competent neighboring countries of South Asia. Being the part of same continent the geographical conditions of both the countries are similar but they are, nevertheless, distinct nations from political point of view. There are no natural boundaries between India and Pakistan because of which many problems crop up every now and then. India shares 3,323 km. (including Line of Control (LOC) in Jammu & Kashmir) of its land border with Pakistan. Since India's partition based on Hindu and Muslim religious majority, these two countries are not in cordial terms. It was formulated in the process of partition between the two nations on 17th August, 1947 determined by a British Government Commission Report usually referred to as The Radcliffe Line named after Sir Cyril Radcliffe. Being one of the most heavily militarized international borders of the world, it makes this entire region very contentious, sensitive and susceptible to infiltrations and illegal smuggling. It's a long boundary running along Ganganagar, Bikaner, Jaisalmer and Barmer districts of our state Rajasthan. Investigations expose that the urban growth rate as a whole slackened after the emergence of Indo-Pak border in 1947. The most damaging effect was noticed in the Punjab sector, which was the most developed as well as the most populous. Ironically, border was instrumental in stimulating urbanization in the under developed but strategically important sectors of Jammu and Kashmir. Research states, the impact of border is critical up to 40 kms, moderate between 40-100 kilometers and negligible beyond this distance usually. The study highlights that while Rajasthan as a whole ranks quite low on the development scale, in the border districts of Barmer, Jaisalmer and Bikaner the situation is even worse. Lack of growth centers, markets, industries, colleges, hospitals, dispensaries, recreational areas, mother and child welfare centers, rural primary health centers is the concern there, one can only imagine the skewed distribution of these resources from the main city to the far off border districts. The impact of Radcliff line on the border districts of Rajasthan is also analyzed depending upon the relationship between both the countries on each side.



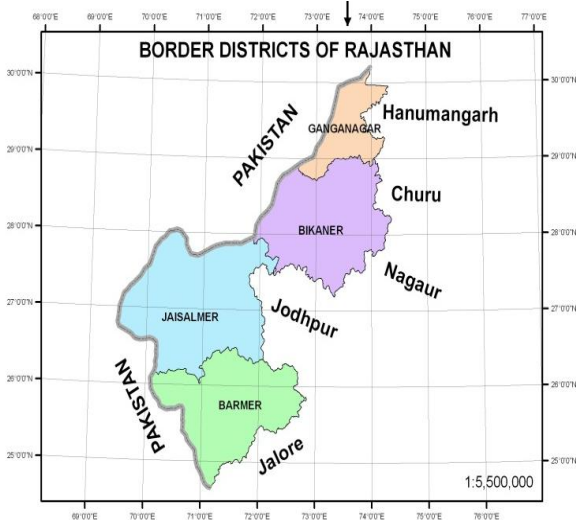
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Study Region

Rajasthan located in the north western part of the country has a total boundary of the state is 5920 kms. International boundary is 1070 kms long. The main districts adjacent to the boundary are Ganganagar (210 kms), Bikaner (168kms), Jaisalmer (464 kms) and Badmer (228kms). This border area commences from Hindumalkot to Kutch (Gujrat). Three districts from the Sindh Province of Pakistan; Bahawalpur, Kherpur and Meerpur namely are on the other end of the boundary. The climatic is extreme in this region ranging from nearly 0° C in winter to approaching 49° C in summer. Lack of rainfall and intense heat has converted this region into an arid sandunes covered barren section of the state.

Map 1 : Border Districts of Rajasthan



This region is basically a desartic one, rich and worthy in terms of its fossil fuels. The land use and cover of the state is clear in the map below, which highlights that the western border districts majorly come under the sandy, scrub, salt affected, Rann region where the level of urbanisation is very low. The Ganganagar district is fertile and has water availability thus is covered under agriculture mainly.

Objectives of the Study

The border areas have strategic significance for the nation as they affect peace and security of a nation. The border and borderland between countries are very extensive and dynamic. GIS play an important role in Borderland monitoring and management of resources. This research is an attempt to recognize the impact of the international border on the adjacent districts of Rajasthan.

1. This study is an attempt to identify and analyze the border influence in the adjacent regions in Rajasthan.
2. To analyze and scrutinize the strategic impact of International Border on the growth and development of the study region.
3. The research emphasizes on examining the economic development level here living in remote and inaccessible areas adjacent to one of the world's most volatile International border.

Methodology

To survey, analyze and investigate an international border region is not easy. Several visits and meetings have undergone to reach up to here. First hand data has been collected through field survey, observation, personal interviews to access the basic facilities available to the people along the border and away from it and questionnaire survey will be conducted to find out the public opinion on various aspects of Border Area Development Programme and also information were collected from the Government offices of the District headquarters. Later the State Government's district wise profiles were obtained to verify and update the informations. Government of India's official websites, District statistical abstracts published by the Directorate, Census of India 2011(District Census Handbook), the various published sources on various aspects of Border Area Development Programme were also considered. The satellite imageries were refereed to evaluate and compare the Land Use/Land Cover of the study region obtained from (Bhuvan) National Remote Sensing Agency, Hyderabad, United States Geological Survey, USA, Regional Remote Sensing Centre, Jodhpur, State Remote Sensing Application Centre Department of Informational Technology, Jodhpur. Published books, journals, articles of newspapers and magazines were sources of data and information. The collected data were processed, tabulated and analyzed with appropriate cartographic and GIS techniques and statistical measures.

Review of Literature

Moonus Kayinat Zahra (2017), 'A Pakistani's Perspective on India-Pakistan relations' states Pakistan and India have engaged in wars and unconventional hostilities till present. To have normal and reciprocally constructive relations, Pakistan and India have to increase interdependence.

Zahoor Ahmad Malik and Dr. G.K. Sharma (2014), 'India-Pakistan peace process during UPA government' this paper elucidates on the concept of a peace process and its spoilers in the context of India-Pakistan relations. The course of the bilateral relationship between India and Pakistan, even since the inception of these two states in 1947, has never been smooth. The peace process which started in 2003 has had its twists and turns, but there has been a renewed energy since 2011.

Aviotech (2012), the study conducted on 'India's border security infrastructure' discusses about the better intelligence, force modernization and meeting equipment needs as immediate priorities in border management.

Toshihiro Kudo (2009), 'Border Area Development in the GMS: Turning the Periphery into the center of Growth' this Paper examined the location advantages of border areas, in particular of those between less developed regions and developed ones.

Om Shankar Jha (2009), 'Community Participation in Border Management: Challenges and Options' this paper examines that state has a major role in securing war frontier, the populations along

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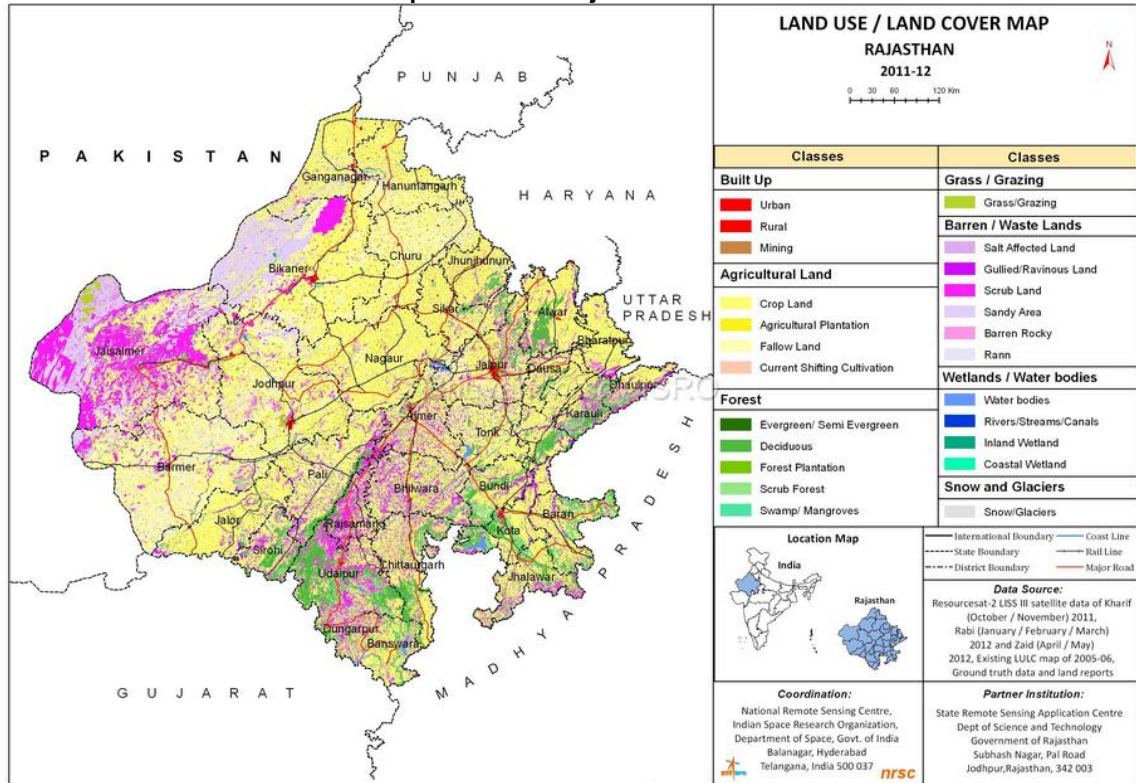
territorial peripheries, too, can play an important role in securing our interests.

Discussion

Urbanization is a process of population growth in urban areas either through natural growth or immigration. Urbanization is a component of regional economic development because urban centers provide variety of centralized services for the surrounding zone of influence which are necessary for regional development. Rajasthan situated in the

north-western part of the country shares 1070 kilometers of long boundary with Pakistan. The boundaries of the districts of Ganganagar, Bikaner, Jaisalmer and Barmer are linked with the western boundary of Rajasthan adjacent to Pakistan. Areas adjacent to the Indo-Pak border in Rajasthan have experienced low urban growth. The rural and urban areas are clearly shown in the Land Use Land Cover (LULC) of Rajasthan below.

Map 2: LULC of Rajasthan



Source: National Natural Resource Management System, ISRO

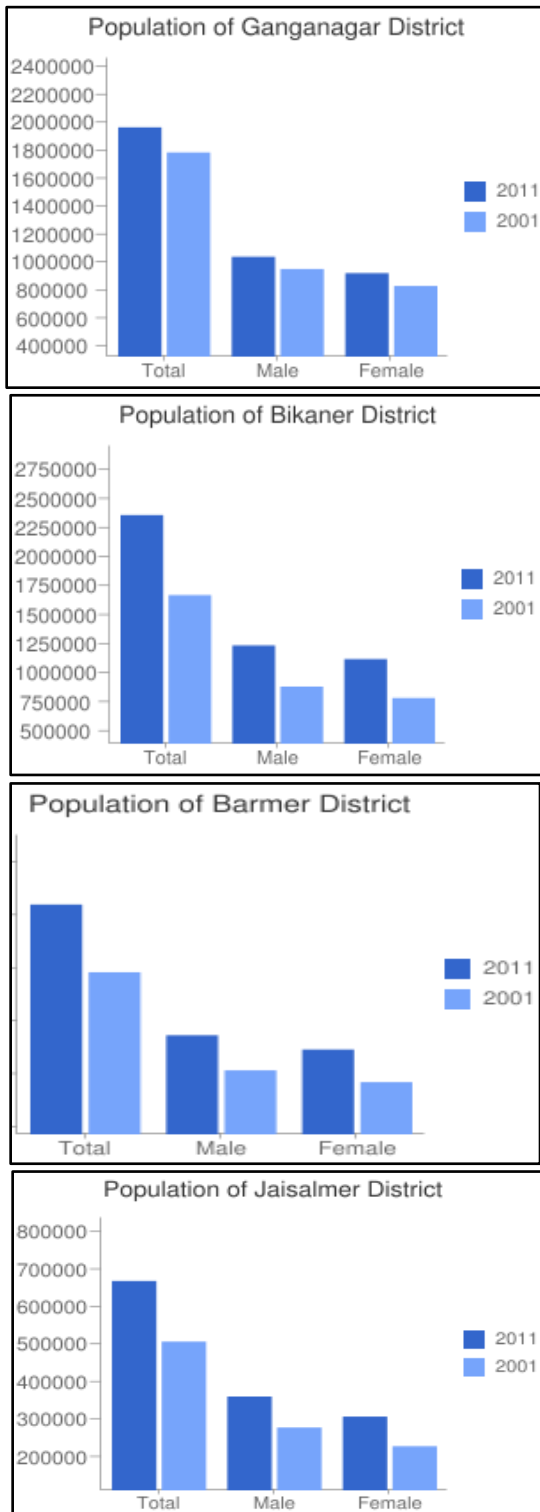
As per census 2011 level of urbanization in the border districts ranges from 33.86% to 6.98% (Bikaner 33.86%, Ganganagar 27.2%, Jaisalmer 13.29% and Barmer 6.98%). Level of urbanization in Ganganagar and Bikaner is above the state average

of 24.9%. Bikaner is the only district among the bordering districts which has urbanization rate above the National average of 32%. Out of the total 227 town of Rajasthan 22 are located in the border districts.

Table 1: Showing Rural and Urban Population in Border Districts of Rajasthan

District	Absolute	Rural	Urban	Percentage
Ganganagar	1969520	1433858	535662	27.2
Bikaner	2363937	1563553	800384	33.86
Jaisalmer	669919	580894	89025	13.29
Barmer	2603751	2421914	181837	6.98

Graph 1: Showing the Population of the Border Districts



Source: Census of India, 2011

Geographical Information System (GIS) is an essential tool used in this research in order to combine raster and vector data formats. With the help of vector data, point location map of settlements of

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Rajasthan is produced. This map will be used to assess the role of distance-decay factor.

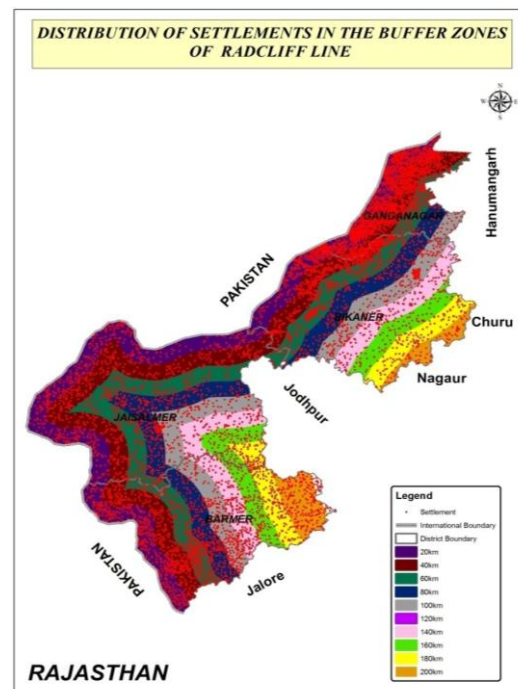
Table 2: Refugee Villages along the Border

Districts	Name of Blocks /Places where refugees have been rehabilitated	Number of villages inhabited by refugees
Barmer	Shiv	80
	Chotan	86
	Ramsar	53
Bikaner	Kolayat	20
	Pugal	27
Jaisalmer	Rural area	28
	Urban area	3
Jodhpur	Outskirts	6

Towns will be grouped into six categories with a distance interval of 20 kilometers, number of towns falling in each category will be identified through the buffer technique and their collective growth rate by distance groups will also be calculated. Research states that the impact of international border found to be very critical up to a distance of 40 kilometers, moderate between 40 to 100 kilometers and negligible beyond the 100 kilometers. Contrary to normal expectation, smaller towns grow faster than large ones. To know about the specialized services perform by these towns, they will be classified on the basis of dominant or specialized function.

Their results will be very helpful in knowing about the growth of different functional towns. Temporal urban changes will be traced visually and statistical analyzed between studied years with the model structured through GIS.

Map: 3



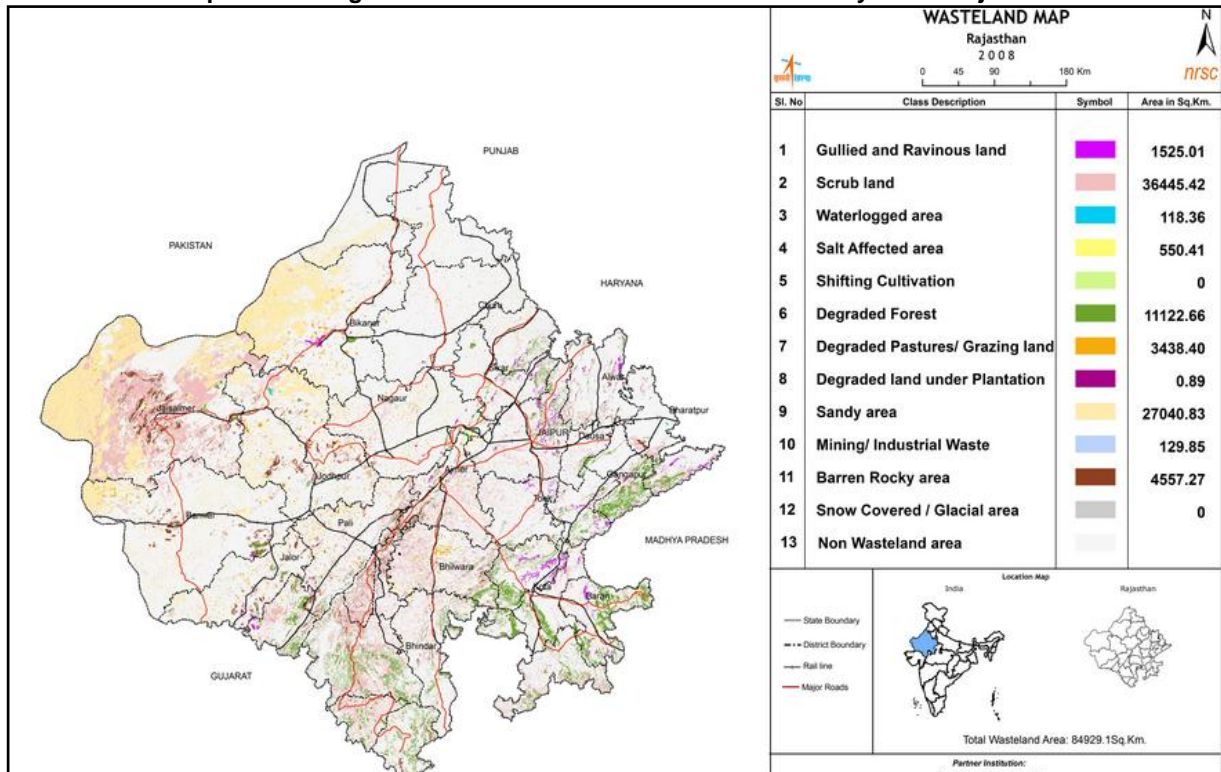
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Economy Development

The above map clearly shows the belts of agglomeration along the border. The districts of Ganganagar and Bikaner have major settlements in the regions upto 20 kms and 40 kms of distances. It is extremely useful for change detection analysis and selection of sites for specific facilities such as hospitals, restaurants, solid waste disposal and industry etc.

The lack of industries here is due to a number of factors, lack of raw material like water, electricity, markets, lack of basic education and health facilities, insufficient irrigation and drinking water facilities, poor road connectivity, lack of skilled manpower etc. Large livestock offers opportunities for development of livestock based agro processing industries, like sheep wool carpet making, using animal waste products like hides, skins, bones etc.

Map 4: Showing Power Plants and Ground Water Availability in the Rajasthan



Source: National Natural Resource Management System, ISRO

The brown patches in the above indicate the barren and scrubland where in urbanization level is also very low. Rajasthan state support in the form of investment remains limited, moreover, the state has not invested in systematic schemes for livestock rearing. However, livestock is largely migrating for want of drinking water and fodder. While the desert state of Rajasthan as a whole ranks quite low on the development scale, in the border districts of Barmer, Jaisalmer and Bikaner the situation is even worse. Lack of hospitals, dispensaries, mother and child welfare centers, rural primary health centers is the concern there, one can only imagine the skewed distribution of these resources from the main city to the far off border districts.

Conclusion

The finding shows that the Border areas are lagging behind in the process of development. Proximity to the international border with an unfriendly country proved detrimental to new investment in industry, trade, services and infrastructure development. Rather it caused some transfer of industrial and commercial entrepreneurs to safer

places. In terms of level of urbanization Border States as a unit is performing better while border districts as a unit is performing low. Impact of international border can be minimized by building border security and identifying the potential of the area and its need for the development and building the required infrastructure. In Ganganagar and Bikaner the negative impact of border has been minimized to a large extent by improving the household status through improved agriculture productivity and introducing small scale industries while Jaisalmer and Barmer are still bearing its negative impact with low level of urbanization due to improper resource utilization. For the management of resources and identifying the potential areas Remote sensing and GIS techniques were used, as these techniques have proved very useful in providing accurate, orderly and reliable information for planning and management of a resource.

Border Area Development Programme (BADP) through the State Governments was launched to promote a sense of security and wellbeing among the border population. However,

E: ISSN No. 2349-9435

Periodic Research

Border Area Development Programme do not achieve the stated targets, especially regarding the management of migrants, commodities, goods, services and information within the border areas.

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