Annals of Geographical Studies
Volume 1, Issue 1, 2018, PP 23-33

Smart City and Urban Issues: A Case Study of Jaipur City, Rajasthan, India

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ABSTRACT

India is the second largest country in the world with a population of 1210 million (1.21billion). The Population Census of India estimates that the country represents 17.31 percent of the world population. The country has 29 states and 07 union territories. It is fast becoming urbanized with the cities across the countries struggling to cope with the unfolding situation. The urgent burden has been that of providing a better quality of life to the urban population given the complex problems spanning poverty, disasters, pollution, and governance, preservation of heritage and culture, and urban planning. The Prime Minister of India has a vision of developing 100 smart cities including 04 cities in Rajasthan State by 2022.Rajasthan has a population of 68.6 million, and forms 5.66 percent of India in 2011. The concept of smart city is influenced by the idea of developing the urban hubs which would be running on technology to provide better electricity and water supply, improved sanitation and recycling of waste, proper traffic and transport management systems. This paper deals the pressing issues in an urbanizing India against the background of the concept of smart cities. The main issue underscored in the paper is how Information and Communication Technologies is a key to Smart Cities provided there is adequate preparation and training before such systems are implemented throughout India.

Keywords: *Information and Communication Technologies, Urbanization, Smart Cities, Sustainable development*

INTRODUCTION

According to UN Habitat, Urban Development policy is vital to provide a direction and course of action to support development. The policy provides an overarching framework to deal with the important and critical issues of urban services such as water, sanitation, mobility, and housing. Approved at the highest levels of government the policy gives a set of guidelines for public and private interventions and serves as a reference document for sectoral ministries and service providers. It is also a key reference for legislative institutional reforms and judicial interpretations. The policy will also give a chance for involvement of multiple stakeholders involving citizens, Non-Governmental Organizations, and private sector players in urban development discourse. Traditionally, cities and towns were centers of trade and commerce. The locations of urban areas were at the ports or intersection of roads and rivers. People from hinterland migrated to urban areas with the hope of economic fortunes and social wellbeing. Cities and towns provided the necessary infrastructure and services to conduct trade and connectivity through roads, ports and rails; opportunities for growth like education; and services like health and sanitation. The urban areas had a pull effect on people. But as cities grew in size, the infrastructure and the services came under stress due to the large population pressure. The towns started to decay due to overuse and stretched services. The migration became distressed migration and major reason now was not the pull effect of the urban areas but the push from the rural areas. The cities lost their original character of bringing prosperity and enhancing productivity and promoting health of its citizens. Cities became a developmental challenge rather than opportunity to the policy makers.

As per Census 2011, Rajasthan's total population is 68.54 million, while its urban population is 17.04 million that is 24.8 percent of the total population. In Rajasthan state, there is little variation across districts. Out of the 33 districts in the state, only the five major districts of Kota, Jaipur, Ajrmer, Jhodpur, and Bikaner have a level of urbanization which is higher than the national average. All the other 28 districts

have below national average level of urbanization. Total urban centers in Rajasthan is 297 (Statutory towns, 185 and Census towns, 112).In the last decade from 2001 to 2011, there has been an increase of just 1 statutory town in Rajasthan (from 184 in 2001 to 185 in 2011) with a comparative addition of 74 Census towns. Evidently, the number of smaller urban centers or urbanizing villages in Rajasthan which satisfy the basic criteria of urban is on a constant rise. There has been no increase of census towns in western districts of Hanumangarh, Churu and Jaisalmer. This clearly shows that spatially, the growth of urban areas is skewed towards the eastern Rajasthan. Overall, only about 25 percent of the state is urbanized and in absolute values, it is predominantly rural as it has a larger rural population than urban.

Study Area

Jaipur is situated in the eastern part of Rajasthan, surrounded on three sides by the rugged Aravali hills. Jaipur is located at 26°55′N 75°49′E (26.92°N 75.82°E). It is surrounded by Alwar and Sikar in the North; by Sikar, Nagaur, and Ajmer in West; by Ajmer, Tonk, and Sawai Madhopur in the South and by Dausa and Bharatpur districts in East. It has an average elevation of 430 meters. Jaipur was founded in 1728 A.D. Maharaja Jai Singh was the founder of Jaipur city which is famous for its wonderful architectural planning. The city has many historical monuments and buildings even as on today. The climate of Jaipur city is semi-arid and average rainfall per year is 556.4 mm. The rainy season lasts from June to September. The dry bulb temperature lies between 45^0 C to 25^0 C in summer and 22^0 C to 8^0 C in winter. The city is renowned for heritage and its color symmetry and thus known as the pink city. According to the census 2011, Jaipur district has a population of 6,663,971, which gives it a ranking of 10th most populous district in India. The district has a population density of 598 persons per square kilometer and a population growth rate of 26.91 percent in the decade 2001-2011. The gender ratio of this district is 909 females for every 1000 males and a literacy ratio of 76.44 percent. As of 2011, Jaipur has a population of 3,073,350.

Objective of the Study

The main objective of the study is to highlight the urban issues with special reference to Jaipur city, Rajasthan in an urbanizing India.

Inclusive Development and Urban Poverty

Deprivation of basic needs of humans amounts to poverty. In the last two decades, the developing world has seen tremendous progress in reducing poverty through various programmes implemented by governments and international organizations. Although the share of poor living in rural areas is higher, the share of urban poor is rising at faster rate than the population as a whole. As with other developing countries, India is also witnessing the triple dynamics of growth, rapid urbanization and poverty. Urban poverty is more complex and multi-dimensional – extending beyond the deficiency of income or consumption, where its many dimensions relate to the vulnerability of the poor on account of their inadequate access to land and housing, physical infrastructure and services, economic and livelihood sources, health and education facilities, social security networks, and voice and empowerment. As countries get more urbanized, the level of urban poverty also increases. Some scholars label it as "Urbanization of Poverty". In India, poverty levels are estimated by the Planning Commission. But these estimations have limitations to take into account the factors of changing consumer behaviours, life style changes, expensive and low quality housing, affordability to schools, hospitals and transport systems. For example, in rural areas work place and residence are nearby; hence, cost of travel is almost negligible. The latest poverty estimates are done on the basis of methodology suggested by C. Rangarajan. The method considers food and non-food items such as education, healthcare, clothing, transport, and rent. In the food category, the estimation takes into account not only calorie intake but also nutritional requirements of protein and fats. Due to these changes that urban poverty has increased by 40 percent as compared to rural poverty that has increased by just 19 percent compared to previous estimates. Based on these considerations, the poverty line is INR 7,035 per month for a family of five, translates to INR1,407 per month per capita. The Expert Group (Rangarajan) estimates that the 26.4 percent of the urban population was below the poverty line in 2011-12 in urban India. Approximately, 1,025 lakhs and 39.5 lakhs people were below poverty line at all Indian and

Rajasthan State level respectively in the year 2011-12. Development can be inclusive only if all groups of people contribute to creating opportunities, share the benefits of development and participate in decision-making.

Emerging Challenges of Urban Poverty

The distress of urban life is most evident in the slums of the cities. Due to high cost of land in urban areas, people are forced to live in informal settlements which are often unhygienic and present health problems to inhabitants. Many who are not able to find place in slum also live on the streets and pathways. Due to uncertainty over land titles and tenures basic services are not available in these areas. Efforts to improve situation by the authorities have not bear any fruits till now. In addition, the poor households are unconnected to water and sewage networks of the city. Because of this, they rely on private contractors and distributors and end up paying a higher price than high-income households. The slum areas also lack access to individual or community toilets, hence, most of the slum dwellers practice open defecation. Open defecation is not only a social issue but also a public health issue as it leads spread of diseases like cholera and diarrhea which hamper human growth and productivity. The main transport corridors of the city are also not accessible from the slums. As a result, transportation costs are high for the urban poor. Due to rural stress, many people migrate to urban areas. Due to lack of training facilities and education in hinterland, the migrated poor lack the skills required in urban economy. Hence, the poor are exploited in the cities with low wages. Opportunities are limited and number of people seeking employment is growing daily. The alternative available such as self-employment requires an investment which many of the poor do not have. The migrant status makes it difficult for the poor to access credit from the banking institutions. Furthermore, the urban poor tend to fall prey to local money lenders who charge exorbitant interest rates. Ironically, the informal sector is the primary job creator in urban areas with jobs such as street vendors, rag pickers, and construction workers on demand. These workers lack social security protection, insurance covers, unremunerated work, and rights at work, inadequate social protection and employee representation owing to how they are perceived in the society. The high cost of living in urban areas and high pressure on government institutions, the poor are often deprived the basic services like education and health which hampers productivity.

Climate Change, Disasters and Resilience

India is prone to disasters, and communities need to find ways to build their resilience to disasters. Disaster could be man-made or natural. Natural disasters could be due to floods/ cloudbursts, earthquakes, tsunamis, landslides, cyclones, hailstorms, droughts, epidemics and outbreak of various viral diseases, fire, and collapse of buildings. The disasters emanating from the activities of man could be in the form of fire outbreaks, major rail, road and air accidents, industrial accidents, bomb explosions and stampedes during festivities/fairs. In the traditional disaster management approach during the immediate post-independence period in India, the government/state focus was on emergency relief and immediate rehabilitation. Of late, however, there has been a perceptible shift and the governments at central and state level have started several proactive, quick response and other structured response mechanisms to disasters. Cities and towns in urban areas are however likely to face increased challenges from climate change and other natural hazards.

The Disaster Management Act (DM Act), 2005 lays down the institutional, legal, financial and coordination mechanisms at the national, state, district and local levels. The National Disaster Management Authority (NDMA) setup under the act approves the national plans and the plans of the respective union ministries/departments. ; NDMA also lays down guidelines for state authorities, as well as coordinates the enforcement and implementation of these policies and plans and ensures timely response to climate change, disasters and natural hazards. State has also brought in to force State Disaster Management Plan, 2014 which precisely defines role of various agencies/departments including NGOs in the event of a disaster. The Plan outlines the methodology for restoration of essential services such as power supply, communication, and transport, as the rehabilitation works are closely linked to the State's principal services. Some institutions involved in urban governance and development lack the required expertise and institutional capacity for management of disasters. Many of the investments in the urban infrastructure are long term, which may

face vulnerabilities in future. Hence, any efforts at resilience in the system have to start at the planning stage in order to safeguard infrastructure and protect the lives of people in India.

ECO-FRIENDLY CITIES AND URBAN ENVIRONMENT SUSTAINABILITY

One can argue that development is not a standalone process. The positive and negative effects of development in all its forms transcend boundaries. Decision makers are always in a dilemma of conserving and preserving the natural environment while facilitating human habitations/development. In India, the process of urbanization makes sustainable development more relevant as economic development and quality of life are interlinked. The quality of environment is an important aspect of urban competitiveness as it attracts talented workers and helps in optimization of their potentials. Urban areas can be divided into the natural and built environments. The natural environment needs to be protected and enhanced while built environment needs to be planned and developed in such a way that it does not impose unnecessary costs to future generations. The term eco-friendly city is not a defined but a perceived term. Any city or town which adopts measures to build its infrastructure and its operations which reduce the foot print on regional natural ecosystem can be referred to as an Eco Friendly city. Some of the cities of the world which are termed as eco-friendly have one or other defining attribute such as bicycle friendly infrastructure, public transport, solar energy, recycle and waste management. Urban development policy can tackle the challenge of environment sustainability in fast-growing cities such as Rajasthan.

Rajasthan as a state faces certain unique problems which have to be taken care in the Urban Development policy:

Water Shortage

Rajasthan is water stressed area with annual rainfall averaging 25-30 cms. The total surface water source is limited and the ground water source is depleting at an alarming rate. Demand for drinking water, use of water in agriculture and use in industry is rising. With new initiatives like DMIC to come up in the state, the new infrastructure will put more pressure on the existing resources. Due to inefficiencies in management by the state and local communities of this scarce resource the state faces an imminent threat. The state has already utilized 72 percent29 of the prevailing economically utilizable surface water resource. This challenge needs to be addressed by policy makers in a holistic manner. The State has 10 percent of the country's area but only 1.17 percent of its water resource

Air Pollution

The National Ambient Air Quality Monitoring Program (NAMP) data for 5 major towns (Alwar, Jaipur, Jodhpur, Kota, and Udaipur) shows that suspended particulate matter (SPM) concentrations remained above the annual average ambient air quality standards in all these cities during1995-2007period.But this is bound to change due to rise of vehicular traffic, industrial growth, coal based power generation and increasing construction activities.

Water Pollution

Major reasons for polluted water resources in the state are flowage of untreated sewage, industrial effluents and depletion of ground water. Due to low priority, paucity of funds and monitoring mechanisms the pollution is unabated. Due to low availability of water resources and erratic rainfall, ground water is over exploited. This has resulted in increase in concentration of salts and has made water not suitable for drinking purposes.

Loss of Biodiversity

Rajasthan is home to two National parks and 25 Wildlife sanctuaries with total area of 9,161.21 sq.km, i.e. 3 percent of the total area. The Kaladeo National park is a UNESCO World Heritage Site with rich biodiversity of birds. The forest ecosystem is characterized by arid and scanty vegetation. Rajasthan also has one of the lowest cover of forest, 9 percent32, compared to all India level.

Environment Degradation

Mining is a major threat to the environment in Rajasthan. Mining carried out by small lease and quarry holders is in small areas and it is difficult for them to comply with environmental laws. Some these miners are in remote areas and are difficult to monitor. On the other hands, mining is a profitable sector which is contributing to the economy of Rajasthan. It has spillover effects on urban areas.

Migration

Urban areas are not well connected to interior hinter lands of Rajasthan Due to this; the people who wish to work in urban areas have to settle

in cities and town as cannot commute on daily basis because of costs and other factors. This situation increases the pressure on prevailing infrastructure in the towns and cities. It is reported that the growth rate of towns with a population less than 20,000 is negative because of massive migration to the cities.

Information Communication Technology and Smart Cities

Information, Communication and Technology (ICT) is revolutionizing and transforming people's lifestyle. The internet has become an integral part of our work, study and daily life and hence its integration to urban setting is essential. Acquisition and exchange of information in real time has resulted in creation of vast data bank. This data needs to be analyzed and utilized by agencies for improving the decision making of not only the policy makers but also citizens to optimally use/provide their services. Cities as center of economic activity are also under severe pressure due to limited infrastructure and increasing population pressure. Adding money to create more infrastructures is not a viable solution. With increasing migration and rate of consumption of resources in urban areas, the existing approaches to urbanization will not be sustainable over long term. Technological interventions are necessary to increase the efficiency of present infrastructure and make it more environmentally sustainable and socially inclusive.

Initiatives such as SMART city and Digital India aim to bring in the ICT revolution in the cities. "Smart City" integrates the critical urban infrastructure with technology creating an efficient, interconnected and effective communications network. There is also a realization by businesses and government that investments in ICT can enable delivery of systems for a better quality of life for residents while being cost efficient. Successful implementation of ICT and outcomes will encourage extension of these initiatives in other areas as well.

Some of the Initiatives under Smart City can be

Smart Buildings

Buildings which integrate ICT for resource conservation, management and monitoring. They integrate various components such as water, wastewater, heating, cooling and ventilation, waste management, cleaning and maintenance, on a single platform to monitor, control and optimize the operations.

Intelligent Transport Systems

An integrated transport system is only possible through use of ICT. It facilitates seamless travel for passengers across the city in different modes. Their ease of use not only increases passenger comfort and safety but also increases the efficiency of overall transport system. Components of ICT include automated and integrated fare collection using smart cards, traffic information and control centers, synchronized traffic signaling, mobile application based traffic and parking updates.

Smart Water

Installation of meters, sensors and leak detection devices will help to reduce wastage of water. The collected data can be analyzed to forecast the demand and supply, optimize utilization capacity, reduce storage and stagnation enable conservation and make citizens more responsible towards water usage.

Smart Grids

Use of Information Technology tools which help in prediction and adjustment of network changes automatically through feedback response system. Such grids help in reducing losses, increase reliability, helps to integrate nonrenewable energy like solar, wind and biomass and also enable net metering.

Smart Governance

Good governance is involvement of various stakeholders in policy formulation and implementation process. When this involvement is done on real time using ICT, it improves public perception of governance systems in their country and communities.

Smart Health care

Use of ICT to communicate between medical personnel and consumers in real time for optimization of health services. Solutions include telemedicine, electronic records management, hospital and clinic asset management, mobile health, remote patient monitoring, etc.

Smart Education

There is increasing evidence to suggest that when classroom teaching involves multimedia

and ICT to make class rooms more interactive, it increases learning outcomes. Components of smart education involve e-learning, knowledge sharing, connected schools and campuses etc.

Smart Security Systems

This is the use of technology to undertake public safety initiatives that optimize efficiency and response time of emergency services, secure and control mass events, provide surveillance in public spaces and secure public administration transactions.

CHALLENGES OF TRANSPORT

Traffic management and transportation is taken care by the Transport department, Traffic Police, Urban Development and Housing Department. There is lack of coordination and single point of responsibility on issues related to urban transport. This results in shifting of responsibility and delay in execution of the projects. The planning process does not adequately take into account the integration of transport plan with the land development plan leading to unplanned and unregulated land use. This leads to lack of adequate road space in cities. The demand outstrips the supply manifold and this result in a situation of chaos. The trend is expected to continue in future with economic growth. In the absence of efficient public transportation system, commuters are left with little option but to resort to personalized modes of transport which has given rise to disproportionate increase in number of vehicles on our roads and subsequently other problems such as traffic congestion, parking shortage, pollution, road accidents etc. Neglect of transportation plan in the land use planning is a major concern and root cause of transport problems in the city. Transportation systems are developed after uncontrolled urban sprawl has already taken place. Unplanned development has resulted in increased travel demand and consequent problems for the authorities and locals in India

URBAN WATER SUPPLY

According to Census 2011, availability of treated tap water in urban areas is in 71 percent households, out of which 62 percent is treated. In Rajasthan this figure is 82 percent with treated tap water at 75 percent, clearly above the national average for urban areas. According to the State Planning Department, 10 percent of ULBs are able to provide more than 100 lpcd; 35 percent of the ULBs provide 60-80 lpcd of water and 33 percent of the ULBs provide 40-60 lpcd of water as against a service level benchmark of 135 lpcd. On the other hand, frequency of water supply is another major focus area, with 73 percent ULBs providing water once every 24 hours. Often, during the summer months water is transported to towns in trains and tankers. Urban water supply is one of the most critical elements of urban infrastructure. Water is basic necessity of life which directly impacts health and well-being of the society as a whole. More than 50 percent of past investments in urban infrastructure have been in water sector. The sector has evolved over time and dependence on ground water is reducing with municipalities shifting to surface source of water. Similarly there is shift from intermittent supply to 24 X 7 water supply projects. The livability of a city is greatly impacted by availability of safe drinking water and sanitation facilities, and therefore the competitiveness, economic growth, and prosperity. The economic impact of clean drinking water is huge. Every dollar invested in drinking water and sanitation leads up to eight dollars in benefits .If clean water is available within the premises it reduces the burden of mainly women to fetch water from distant sources. Due to non-availability of clean water at the tap, people have to install water treatment equipment's at home based on inefficient technologies which waste up to 70 percent of water.

Lack of adequate manpower and a requisite skill at local level to operate and maintain water utilities is one of the major limiting factors. Other factors include archaic infrastructure which needs urgent upgrading and rehabilitation, high life cycle cost of assets and equipments, minimal use of technology for leak detection, burst repairs and lack of focus on customer complaints and redressal, metering and billing, user charge collection and financial accounting. The state of Rajasthan is one of the most water deprived state in India with respect to rainfall and per capita water availability. According to the Vyas Committee Report (2009), the average per capita availability is said to be less than $800m^3$ as against a general accepted requirement of 1000 m^3. With, the state's surface water resources being just 1 percent of the total in the country, while the state housing 6 percent of India's total

population. There are significant considerations related to ground water level in Rajasthan (declining by more than 4 meters in about the last decade17) and quality (On national scale, 74 percent of all habitations with multiple quality issues in the country are located in Rajasthan which includes 51 percent of all fluoride affected areas, and 42 percent of all saline affected areas).

Municipal Wastewater Management

Sanitation involves prevention of human contact with waste and proper treatment and disposal of sewage or waste water. The sewage and waste water value chain begins from the source of generation to the final disposal or reuse. This was one of the most neglected and crucial aspect of urban management in India. Lack of hygienic waste water management increases incidence of diseases and associated economic burden which has disproportionate impact on daily life of poor and vulnerable. Census 2011 classifies type of toilet as either water closet, pit latrine and other latrine types. The statistics for Rajasthan is similar to all India average. 73 percent households have water closets and almost 18 percent do not have access to a toilet facility. With respect to waste water situation in Rajasthan lags as compared to national average. With only 25.6 percent households connected to piped sewer system and almost 17 percent dispose the sewerage in open. The responsibility of sanitation in urban areas vests with Urban Local Bodies (ULB). The capital investments in sewerage and other sanitation sector are mainly done by State Government. The responsibility of operation and maintenance lies with respective ULBs.

One of the foremost reasons for the low penetration of toilets in the households is low priority given to sanitation by people themselves. Sanitation is a low priority among males but top priority among females. Financial implication with high capital cost, high cost of operation, water priority of low income groups, affordability and willingness to pay results in open defecation or leaving the waste in open unattended. At the basic the infrastructure for waste water collection and transmission is lacking in most of the towns. Due to low priority given in the past to the sector, creation of sewerage system in brown field areas is difficult. More so due to lack of point source of collection of sewerage the system for treatment is also not functional. Most of the waste water flows through open drains in to nearby water bodies and polluting the same.

Solid Waste Management

Municipal Solid Waste (MSW) is waste consisting of everyday items discarded by the public in urban areas. It differs from that obtained in rural areas in terms of composition as it contains higher proportions of recyclables and plastics than organic content. Waste management is one of the core functions of the urban authorities and a foremost determinant of cities aesthetics. When compared to developed nations, which generate about 1-1.25kg/capita waste, waste generation in the towns of India is very less at 0.3-0.4 kg/capita. In spite of low waste generation, owing to various institutional and technological challenges, waste management is one of the most poorly rendered services in India. Effective waste management is a must for any city as waste management capabilities can be a reflection of the other services offered by the city.

MSW management Rules 2000 provide most comprehensive policy guidelines for management of municipal solid waste. The rules mandate that every municipal authority is responsible for collection, segregation, storage, transportation, processing and disposal of municipal solid wastes in their respective jurisdictions. Penal action was prescribed against municipal, district and State level authorities and even dates were prescribed as limits for actions to be taken. State pollution controls Boards (SPCB) have been entrusted with the responsibility to oversee the implementation of the Act. The total municipal waste generated in Rajasthan is 5037 TPD, out of which 2491 TPD is collected and 490 TPD is treated. As per the Rajasthan pollution Control Board Annual Report 2012-13, two scientific landfill sites exist in the state, and primary door-to-door collection exists in one city.

Slums Redevelopment

The word “slum” is often used to describe informal settlements within cities that have inadequate housing and miserable living conditions. They are often overcrowded, with many people crammed into very small living spaces. Slums are not a new phenomenon. Slums are generally the only type of settlement affordable and accessible to the poor in cities

including in Rajasthan, where competition for land and profits among authorities, inhabitants, and investors is intense. The key reasons for slum proliferation are rapid and non-inclusive patterns of urbanization catalyzed by increasing rural migration to urban areas. Some of the probable reasons for development of slums are rapid, unorganized and haphazard urbanization, industrialization, large scale migration due to push from the rural areas and critical inadequacy of housing, public utilities and congestions. A slum, according to the Population Census of India (2011), has been defined as residential areas where dwellings are unfit for human habitation by reasons of dilapidation, overcrowding, faulty arrangements and design of such buildings, narrowness or faulty arrangement of street, lack of ventilation, light, or sanitation facilities or any combination of these factors which are detrimental to the safety and health. As per UN Habitat, a slum is characterized by lack of durable housing, insufficient living area, and lack of access to clean water, inadequate sanitation and insecure tenure.

As per Census 2011, Rajasthan has 185 statutory towns out of which 107 are slum reported towns. The total slum population in Rajasthan is 20,68,000 and all of them are residing in identified slums. The State Government of Rajasthan is committed towards improving the quality of lives of slum dwellers. It has articulated its commitment through a series of policy statements, key among these relate to its policies on land tenure/titles to slum dwellers, livelihood promotion and urban housing and habitat development. Populations living in irregular urban settlements are all confronted with the same set of inter-related problems: they have no access – or limited access only – to basic services, and they have no security of tenure. Their situation is precarious as they usually belong to the poorest segment of the urban population. The current challenge is financing slum upgrading and shelter development. There is a need for improving municipal finance for investment in low-income houses.

HERITAGE AND TOURISM

India is one of the few countries of the world with such a unique and variant cultural heritage. Hence, it is the national focus to protect this identity. Since heritage has always been one of the most intrinsic facets of Indian tourism, recognition of the significance of heritage assets and ensuring their protection is essential for sustainable tourism. This not only serves as the purpose for protection of the cultural heritage, but also attracts tourism and promotes the economy of the place. Thus, important tourist destinations are also major urban centers and it is essential to protect the urban identity. There are, in total, 31 World Heritage Sites in India out of which three are in Rajasthan. Tourism contributes to 6.8 percent of India's Gross Domestic Product (GDP) with US $ 18.13 Billion in foreign exchange earnings. Rajasthan is one of the major tourist destinations in the country because it has a large cultural resource. A total of 14,37,162 foreign tourists and 3,02,98,150 domestic tourists visited Rajasthan in 201326. Major cities such as Jaipur, Ajmer, Jodhpur and Jaisalmer are important tourist destinations. Any urban policy without tourism and heritage conservation is incomplete since heritage tourism makes historic preservation economically feasible. Fast paced urbanization and infrastructural requirements often lead to a neglect of cultural heritage. An apparent tradeoff is often seen between cultural preservation and development. Good heritage conservation will attract tourists, thus contributing to the economy and investments in the city. Similarly, good urban infrastructure will attract more tourists; hence, the value of heritage structures will also increase whereas bad urban infrastructure or neglect of conservation will drive the tourists away. Urban cultural heritage is the physical representation of community identity which needs to be preserved.

Heritage includes the monuments which are landmarks and non-monumental buildings which are a part of the urban fabric. These monuments are conserved and taken care by either private property holders or special organizations like the Archeological Survey of India. Traditionally, the issues of conservation have only dealt with landmark monumental buildings, but recently, the principle of conservation has extended to the overall urban fabric. The historic buildings and infrastructure in this scenario have to face the brunt of development, and need the most attention. In short, cultural heritage has acquired economic value as well as locational condition in the shape of urban tourism. One of the foremost challenges in Rajasthan is the ownership of the historical heritage sites. Many of the important

buildings fall under private ownership which leads to situation of uncertainty with regard to conservation effort, funding, incentives, etc. A clear policy and direction is not available which complicates the situation. Due to this, many places of public interest continue to decay. The departments responsible for urban planning and heritage conservation work in silos. The two-urban planning and heritage conservation - are seen as anti-thesis to each other rather than complementing each other's efforts. There is involvement of agencies at the central, state and local levels. Private properties complicate the situation further. This needs correction through institutional changes

ECONOMIC DEVELOPMENT

Historically, cities have been the center of economic development and growth. Cities have attracted entrepreneurs, skilled work force and business investments to create the scale and opportunities for all. Economic growth and urbanization tend to move in close sync as has been observed in the past. The changing structure of economy in India from primary to tertiary will also initiate a shift of labor force from low to high productivity sectors in urban areas. Growth of economic potential of cities will not only impact the urban centers but also have spillover effects to the surrounding regions. The urban areas will have the capacity to absorb the surplus labor from agriculture which will be generated due to higher levels of education and use of mechanization and technology in the farm. But thriving of cities depends on its potential to keep attracting investments in the economic activities.

At present the contribution of the cities to the GDP of India is 68 percent. To ensure urban economic development, the city should support economic development and service industrial production. One of most important driver of economic activity in Rajasthan will be the upcoming Delhi-Mumbai Industrial Corridor which passes 39 percent of its total length through the state. Every city has a unique character and economic functionality. As it expands and grows, the functions get diversified. Due to technology obsolescence, shift of market and influx of population, cities lose their traditional economic base and fail to generate new avenues for economic activity and livelihood creation. Due to overlapping jurisdictions and no clear policy guidelines there is often conflict on responsibilities.

URBAN GOVERNANCE AND INSTITUTIONS

It is often argued that the key to successful urbanization lies in effective urban governance with emphasis on city management. The emergence and identification of cities as engines of growth and their competition with each other at the national and international level for investment is another powerful driving force leading to calls for improvements in city management. The 73rd Amendment for Panchayats and 74th Amendment for Nagarpalikas are landmark legislations for creating the third level of government at the Local Level. In Rajasthan, the mandatory provisions with relation to the 74th Amendment Act were inserted in the Rajasthan Municipalities Act 1959 in 1994 and later certain other provisions were included in the Rajasthan Municipalities Act 2009.At present, the State has three Development Authorities (Jaipur, Jodhpur and Ajmer) and 15 Urban Improvement Trusts. They are supposed to carry out functions at regional level for planning and development .However, in practice, they function parallel to municipalities operating with the same territorial and functional jurisdiction. Similarly there are multiple agencies at the state level with overlapping functions.

With increasing population and services in urban areas, the agencies face acute shortage of staff at the middle and senior levels. The municipal department does not have a regular cadre and institutionalized recruitment process for continuous fulfillment of vacancies. In addition, there is absence of experts/staff for important aspects such as Environment planning, urban design, Landscape architect, urban transport, Heritage conservation, GIS experts, etc. Regular training and workshops for skill enhancements is also required. Citizen Participation in the governance process is increasing and the State needs to reinvigorate and establish mechanisms to encourage the participation from the locals. Ward committees have to be established in all the towns for grassroots representation of the concerns of the citizens. Use of Social media by the government bodies need to be organized for more engagements with the citizenry. The municipalities find themselves often in a situation of financial crunch; hence, they are dependent on Central and State governments for financial devolutions. This is because the tax base and compliance of Municipal taxes is low. The user charges have to be levied and regular

tariff revisions are required. With increasing urbanization, the municipalities have to ensure sufficient revenue mobilization for revenue expenditure for sustainability and quality of service delivery

URBAN PLANNING

Urban planning is a technical and political process concerned with the use of land, protection and use of the environment, public welfare, and the design of the urban environment. It draws upon engineering, architectural, social and political concerns. It is an endeavor involving political will and public participation. Urban planning revolves around the idea of making a thriving city with a standard living condition. It takes into concern the basic character of the city which comes from its people, commerce and finance, culture and heritage. It is a process of integrating land use planning, economic planning, inclusive planning, planning for infrastructure including transport and water supply at all level. Urban Planning entails the drawing up of a methodological and legal spatial framework to assess infrastructure needs of particular states, towns and cities therein and earmarking resources under different sectors. Urban Planning tools may be leveraged to encourage private sector participation in land and urban infrastructure development. Urban Planning can thus provide a perspective for participation and coordination between the different partners (private and public) and decision makers. The urban planning is a process that represents the aspiration of the end users and entails participation at community level, with elected representatives, and decision makers. Urban Planning in Rajasthan is performed by the Town Planning department and it is part of the Ministry of Urban Development and Housing, Government of Rajasthan. The main function of the department was to prepare physical development plans, such as schemes, Master Plans of towns, Regional Plans and Village Plans.

Planning is a comprehensive exercise done at various levels from national, state, regional, urban and zonal areas. Often the plans are not in consonance with each other and results in overlaps and conflicts. This problem arises because of lack of mechanisms for coordination between different agencies involved in planning process. The agencies involved in planning are different from those involved in enforcement. Planning process excludes the involvement and participation of people. Due to this plans are not comprehensive and neglect concerns of various sections of people. The present practice of developing a land does not require the developer to link its site to the trunk/main infrastructure system of the city. Due to which colonies are developed in silos without integration with surrounding areas. Master plans need to look in to the dynamic nature of human settlements in a period of 20 to 25 years rather than focusing on the end results or end state. The projecting population should be based on the basis of economic projections, social changes and basic infrastructure requirements.

CONCLUSION

A large proportion of citizens are either still not connected to the network (Lack of IT infrastructure) or due to digital illiteracy. When services are transferred to digital mode without creation of infrastructure and filling of knowledge gap, it leads to exclusion of large section of the population. This also leads to increasing presence of middle men and commission charges for those services which were supposed to be freely available to all citizens. To integrate ICT in infrastructure and create smart utilities, the basic infrastructure such as water distribution systems, public transport systems, waste management have to be in place with minimum quality standards. It is only after presence on these basic elements that ICT can be used to enhance the effectiveness and efficiency of the systems. The use of ICT deviates from the past and municipalities lack the requisite skills and knowledge to adopt the technology. As has been shown in the case study, without adequate training and sensitization ICTs can actually hamper service delivery.

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