

Karnal Smart City - Issues and Challenges of Sanitation



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Abstract

More and more people are heading towards urban areas of the world in the hope of more job opportunities, better education, better healthcare, standard of living, better law & order and also in search of progressive and competitive urban environment. Therefore, globally, more people live in urban areas than in rural areas, with 54 per cent of the world's population residing in urban areas in 2014. In 1950, 30 per cent of the world's population was urban, and by 2050, 66 per cent of the world's population is projected to be urban. Today, the most urbanized regions include Northern America, Latin America and the Caribbean, and Europe. In contrast, Africa and Asia remain mostly rural. All regions are expected to urbanize further over the coming decades. Africa and Asia are urbanizing faster than the other regions. The Smart City Mission of Indian government will give more boosts up to furthering urban growth. Two towns, namely Faridabad and Karnal towns of Haryana have qualified for the Smart City Mission. Karnal and Faridabad City has been selected as a smart city out of hundred cities by Ministry of Urban Development (MoUD) to participate in the Smart City Challenge. Having recognised that cities are the engines of growth and are drawing a million people every minute from rural areas, the Government has introduced the 'Smart City Challenge', handing over the onus of planned urbanisation to the states. In the approach to the Smart Cities Mission, the objective is to promote cities that provide core infrastructure and offer quality of life to citizens, a clean and sustainable environment and application of 'smart' solutions. Those states that measure up to the guidelines and nominate cities could get funding of Rs 100 crore per year per city for the next five years. The funding is a golden chance for states to rejuvenate their urban areas but the Smart Cities Mission still has its own challenges to face. Wide roads, well-maintained infrastructure, best-in-class drainage facility and a neighbourhood which makes lifestyle convenient -- these are some of the features a smart city should boast. But, in case of Faridabad, listed to be developed as a smart city, none of these features are upto the mark. These cities boast of best colonies of the state, but these colonies turns nightmare for many with the first spell of rain and the problems of rampant water logging. The study focuses around the issues of access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations. An attempt is made in this paper to study the issues and challenges for city's sanitation problems.

Keywords: Challenges, Sustainable, Smart City Mission, Sanitation, Water logging.

Introduction

The Karnal city was formed as district on 1 Nov. 1996, when Haryana was carved out of Punjab. Karnal is located on National Highway -1. It is among of the beautiful and clean cities in Haryana. It is the Heaven to live in. The district is bordered by Panipat, Yamunanagar, Kurukshetra and Kaithal and the states of Uttar Pradesh. Karnal is also known as city of Daanvir Karan. Karnal with a population of 8,85,000 covers an area of 1967 sq.km. District headquarter is situated in Karnal city. Karnal was founded by the Kouravs around the time of the King Karna. It is 123km from Delhi on the National Highway NH1, (called the GT Road), and 126 km from Chandigarh. Other towns are Gharaunda, Nilokheri, Assandh Indri and Taraori. Karnal famous for Shoes, agriculture research institutions and Basmati Rice. Karnal city of Daanvir Karan has been a walled town as it possible to trace and may have had a citadel one time. In 1739, the Persian King Nadir Shah defeated the Mughal ruler Muhammed Shah in the Battle of Karnal. Karnal was annexed by the Raja

of Jind in AD 1763 and was taken from him by George Thomas in 1797. The British establish a cantonment in 1811, but abandoned it after thirty years due to the outbreak of malaria.

Karnal district lies on the western bank of Yamuna forming the eastern boundary. Yamuna separated Haryana from Uttar Pradesh. The Karnal district including Panipat lies between 29° 09' 50" and 29° 50' North latitude and 76° 31' 15" and 77° 12' 45" East longitude, its height from sea level is around 240 meters. Karnal is surrounded by Kurukshetra district on its north-west, Jind, Kaithal district on its west, Panipat district on its south and Uttar Pradesh on east. The district is a part of a Ganga-Saraswati-Indus plains and has a well spread irrigation network of western Yamuna canal. Its geographical area has been divided into three agro climate regions, Khadar, Bhangar and Nardak belt. Khadar starts from Indri-Karnal road one mile away from Karnal covering the area in between Yamuna river

Karnal has been ranked 65th (1st in Haryana) among 434 cities in the list of cleanest cities of India under Swachh Survekshan 2017. Karnal was selected as one of the hundred Indian cities to be developed as a smart city under PM Narendra Modi's flagship Smart Cities Mission.

Objectives of the Study

1. To study provision and availability of sanitary facilities.
2. To study the disease pattern and various infectious and parasitic diseases (water and sanitation borne).

Data Base and Methodology

The study entails the collection of secondary level data. Secondary data have been collected from the different publications and web surfing.

Findings of The Study

National Policy on Sanitation

The Environmental Hygiene Committee (1948-49) appointed by the Union Government was the first agency of its type charged with an overall assessment of the country wide problems in the entire field of Environmental Hygiene. The Committee recommended a comprehensive plan to provide safe water supply and adequate sanitation services for 90 per cent of the population within a period of 40 years. In 1954, when the first national water supply programme was launched as part of Government's health plan, sanitation was mentioned as a part of the section on water supply. Sanitation in fact was never perceived as a priority especially in rural areas. Nor was it seen as a development programme—more often related to lower levels in the priority ladder and left unmonitored. It was only in 1980, the UN declared the decade 1981-90 as the International Drinking Water Supply and Sanitation Decade and goals were set for adequate sanitation facilities for all. This effort crystallized into India's first nationwide programme for sanitation, the Central Rural Sanitation Programme (CRSP) in 1986 in the Ministry of Rural Development. But during this decade also, the coverage with regard to:

Category Diseases Major Cause of transmission

Intestinal infections Cholera, typhoid, paratyphoid, Faecal-oral (Human excreta amoebiasis, gastroenteritis, and other borne) related intestinal diseases Viral diseases Polio, measles, enteric fever, encephalitis, Human excreta and waterborne hepatitis, chickenpox, trachoma, contamination borne Dengue and others Other bacterial diseases Diphtheria, whooping cough, tetanus, Tropical and childhood meningococcal infection, septicaemia, diseases leprosy Venereal Disease Syphilis, Gonococcal infection, others Lack of sanitation Tuberculosis Tuberculosis of various types Malaria Various types of malaria, Leishmaniasis Water-based (insect vector) Other Infectious diseases Mycosis, Filariasis, Nicotriasis, late effects Water and Sanitation borne of polymyelitis and other infections and parasitic diseases

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Urban sanitation (through sewerage and other excreta disposal methods) and for rural population was extremely low. However, the target set were 80 per cent for urban population and 25 per cent for rural population by the year 1990. The position of coverage for urban and rural sanitation was 25.04 per cent (40.03 million population) and .5 per cent (2.8 million) respectively. Since then, sanitation situation has been covered by a variety of surveys like Census, National Sample Survey Organization (NSSO), and National Family Health Survey (NFHS) etc. The figures continue to be alarmingly low. A temporal view in the availability of toilet facilities in rural and urban India has been presented

The Central Rural Sanitation Programme (CRSP) was restructured in 1999 and Total Sanitation Campaign (TSC) was introduced. The TSC was being initiated under the sector reform process to promote greater user involvement, lower subsidies, to facilitate NGOs role, and promotion of technologies. The 9th Five Year Plan emphasized the need for undertaking all possible measures for rapid expansion and improvement of sanitation facilities in urban and rural areas. The sanitation coverage in terms of individual household toilets during the 9th Five Year Plan period (1997-2001) was 16 to 20 per cent of total rural households. Census 2001 data shows that about 22 per cent rural households use toilets. Increasingly it is being realized that development is not only economic growth, rather it is the creation of enabling environment and enhancement of quality of life. It is this realization at international level that in Johannesburg Conference in 2002, challenging Millennium Development Goals (MDGs) and targets were set. India accepted the MDG targets and has since then evolved its policies to achieve them. India through its 10th Five Year Plan endorsed the ambitious growth target of providing rural sanitation to half of its population by 2015 with 8 per cent growth per year. In June 2003, GOI initiated an incentive based scheme for fully sanitized and open-defecation-free Gram Panchayats, Blocks and Districts, called the Nirmal Gram Puruskar to encourage and improve

sanitation conditions in rural areas through Total Sanitation Campaign.

Spatial Pattern of Sanitation in Haryana

The data of 2001 Census reveals that about 44 per cent household in Haryana were having toilet facilities. If we take rural-urban break up, one finds that even in urban areas, about one-fifth of the households do not have sanitation facilities (Table 3). Meaning thereby that our towns and cities are not clean and a large population is still defecating in open. It also refers to ill health for the people living on the fringe. It may be obtained from Table 3 that within urban areas, not even single district of Haryana has the distinction of 100 per cent toilet facility. Inter-district disparities can also be seen. It is Sirsa district where 88 per cent of its urban households have got toilet facility. In Mahendragarh and Kaithal districts,

35 to 33 per cent of urban households do not have any toilet facility. One can imagine the enormous pollution effect of lack of sanitation in the cities and towns of these districts, more so in the context of increasing density of population, higher population growth and squeezing open spaces. It is generally said that sanitation and sewage is the conscience of cities. In case of Haryana, the total sanitation still seems to be a challenge. The table also presents the provision of drainage in urban areas and gap between rural and urban areas. Drainage and waste-management are interrelated aspects of sanitation. The flow of sullage water over streets in villages is common sight all over India. In case of Haryana, however one finds that in urban areas, the drainage facilities are better, yet inter district disparities are there. A full picture may be obtained from (Availability of Drainage Facility).

Karnal is not a big place. It's a small town which has a lot of historic value. Its biggest advantage is its strategic location, as it is between Delhi and Chandigarh. Its population is also about 3.5 lakh and there are 20 municipal wards, with the Municipal Corporation having 20 councillors. It does not have much of industry as of now and the major area is residential area. But still, there are rice milling agencies and agriculture implement manufacturers who are exporters and now we have lot of BPOs coming up.

We are working towards making a responsive government in Karnal that would be sensitive to the needs of residents. We have two-pronged approach for the city to make it a Smart City. One, we have identified old areas that need to be redeveloped and second, we will initiate new projects.

There is a Mughal canal in the city that has been existing when Mughals used to rule this area. It has been a constant source of disease and pollution since ages and in fact, the army base camp that was in Karnal earlier, was moved to Ambala because of malaria breakouts here. Now, we have covered the canal and on both sides shops have been develop.

Infrastructure is the foundation for the development of a smart city. Smart Infrastructure can be broadly divided into two categories: (1) physical

and (2) digital. This chapter provides brief descriptions of the following smart physical infrastructures:

1. Smart Buildings,
2. Smart Mobility and Transport, (
3. Smart Energy,
4. Smart Water Management,
5. Smart Waste Management and
6. Smart Healthcare, with case studies and examples.

In terms of the digital infrastructure, a brief discussion on ICT and Data infrastructure is also presented. The chapter concludes by highlighting the need for an integrated approach in dealing with these diverse smart city infrastructure components. Smart Physical Infrastructure Smart Buildings play a critical role in a city, acting as a fundamental building block for a city - providing comfort and security for its citizens. People tend to spend 80 to 90 percent of their lives inside buildings, making buildings an integral part of their lives. What are Smart Buildings A smart building integrates the different physical systems present in a building (such as Building Automation System (BAS) - HVAC & Energy Management, Lighting Control System, Fire & Life Safety Control Systems, Parking Guidance and Management Systems) in an intelligent manner way to ensure that all the different systems in a building act together in an optimized and efficient manner. This integration is typically done in a reliable, cost effective, and sustainable manner with a goal to provide optimal comfort and well-being for their occupants thereby enhancing productivity and performance. In the United States 20, buildings account for 36% of total energy use, 30% of GHG emissions, 30% of waste output (nearly 136 million tons annually), 30% of raw materials used and 65% of electricity consumption. Similar numbers are true globally and this underlines the relevance of smart buildings. Benefits of Smart Buildings Smart building management systems can improve building energy efficiency, reduce wastage, and ensure optimum usage of water with operational effectiveness and occupant satisfaction.

Smart Mobility & Transport

What is Smart Mobility & Transport Smart Mobility and Transport are best described to be approaches which reduce congestion and foster faster, greener and cheaper transportation options. A Smart City transport infrastructure aims to optimize those journeys that take place within a city, save energy and reduce carbon emissions. Most smart transportation management systems use data collected from a variety of sources about mobility patterns in order to help optimize traffic.

Smart Healthcare

Smart healthcare management converts the health related data into clinical and business insights, which include remote diagnoses, remote treatment, digital health records, home health services and remote patient monitoring systems. 'Smart Healthcare' refers to the provision of healthcare using intelligent and networked technologies which help monitor the health conditions of citizens. It is enabling

a shift in focus to prevention instead of cure - with a broader view of overall care, healthy living and wellness management. It is applicable for both in/out patient environments ensuring the availability of appropriate health care and resources at the right time. Smart healthcare systems are being used in both developed and developing nations. A few examples of Smart Healthcare are

1. Enablement of patient empowerment - sensors, devices and smartphone apps help enable patients to collect data that can be used to monitor and support therapies
2. Remote collection of patient health vitals data for diagnostic purposes
3. Use of mobile platforms to display the electrical signals produced by heart which are measured by a sensor connected to the mobile.
4. Converting the smartphone to a patient specific device which measures, displays and communicates the data generated from the sensors.
5. Use of sensors to determine 'blood glucose levels' which can then be seen on mobile.
6. Automated alerts to patients for medication and health checkups
7. Setting up notifications, alerts and workflows for pro-active next steps

Benefits of Smart Healthcare Smart

Healthcare has many benefits for both healthcare providers as well as end consumers. Healthcare organizations and governments can improve general health of the population but also increase the number of people who are being provided healthcare. There is broader reach. Patients who may never have had access to a physician or medical diagnostics will now be able to engage with the medical establishment for better well-being and health. Preventive care is more viable which lowers overall costs since after costs to treat a condition are much more expensive than preventing the condition in the first place. Customized healthcare plans can be provided and progress can be monitored with smart healthcare.

Keen to get into the final list of 20 smart cities, Karnal Municipal Corporation (MC) today submitted its proposal for smart city challenge-II with the Ministry of Urban Development. Director Urban Local Bodies Pankaj Aggarwal and Commissioner Municipal Corporation Sumedha Kataria submitted the proposal at Nirman Bhavan in Delhi.

With the financial proposal of Rs 1,470 crore, including convergence amount under AMRUT and Swachh Bharat Mission, the smart city plan has been prepared under retrofit model, through which 869 acres of land would be developed as smart against the requirement of minimum 500 acres for the area-based proposal replicable in the rest of the city.

Sumedha Kataria, Commissioner MC, told The Tribune that they have submitted the proposal with the ministry today with the answers to the questions in the template including city profile, area based proposal, PAN city proposal, implementation plan and financial plan.

The authorities have also submitted judiciously devised template consisting of probing queries as to how the administrative efficiency had improved over the last three years based on SWOT analysis (strength, weakness, opportunity, threat), she said. The district authorities have chalked their vision about the strategic focus, and a blue print of city region and goals as a smart city.

Besides, they have framed the detailed self-assessment criteria in the template defining the baseline with various suggestions given by the citizens for improvement, the Commissioner said.

Kataria said the challenge-II competition has criteria of 100 marks which comprises 30 per cent weightage for city level criteria, 55 per cent for area based development and 15 per cent for PAN city solution. "We have emphasized an implementation frame work, including feasibility and cost effectiveness," she said.

The district also focuses on use of solar energy, recycling and water harvesting, sanitation, solid waste management, non-motorized transport pathways, intelligent traffic management, smart parking, energy efficient lighting, innovative use of open spaces, visible improvement in retrofit area by laying electricity wires underground, she said.

The BJP youth wing today honored 51 sanitation workers of the Karnal Municipal Corporation (KMC) for their dedication in ensuring cleanliness of the city.

Mayor Renu Bala Gupta, Vikas Kathuria, state convener, Swachh Bharat Abhiyan, and Janak Popli, state general secretary of the youth BJP, felicitated the workers and urged them to continue their efforts in making the city clean. Kathuria said to mark the birthday of former Prime Minister Atal Bihari Vajpayee on December 25, the BJP youth wing has decided to observe a week-long 'Good Governance Yuva Mahotsava' beginning. People would be educated about cleanliness and the best sanitation workers of various civic bodies would be honoured. The mahotsava was being organized across the state, he added.

Mayor Gupta said that these employees are like their family members as they contribute a lot to maintaining cleanliness in the city. "I salute them for their contributions," she added.

She said that it was a good initiative to honor the sanitation staff, as it would further motivate others.

With the efforts of such employees and residents, Karnal had secured the 65th rank in the country in the Swachh Survekshan-2017, improving from the 123rd rank in 2014. It had also received a special award for being the cleanest city in North India under the category of population from 2 to 10 lakh, she said.

Sanitation and Hygiene

In Karnal, only 67.70% (Census, 2011(P)) of household have latrines within their premises, this figure tells about the challenges regarding sanitation issues in normal times and in case of disaster. If we further look into it we will see in case of urban area number of household with latrines in premise is 94%

(Census, 2011(P)) of the total urban population and in case of rural it as low as only 51.35% (Census, 2011(P)). As 46.79% of rural population prefer open defecation. Hence in case of disaster situation sanitation issues in rural areas need to one of the priority as open defecation may lead to vector born diseases. Even this should be noted that percentage of household using public toilets it very low which is less than 2% which is an indicator of a situation where people are not accepting public toilets and this should be considered in relief and rehabilitation activities.

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