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UNDERSTANDING THE CONCEPT OF SMART CITY AND ITS ANALYSIS ON DHULE CITY

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Abstract – *As the population of India is turning towards the urban territories, the policymakers are forced to answer to the urban saturation, resources constraint, pollution, requirement for a constant growth. India has committed to the development of 100 smart cities in order to meet the demand of urbanization of population. This will include the development of new municipalities and renovation of the existing cities. Smart cities have a great advantage and it will be beneficial for both, the government and the users. This paper mainly focuses on the Basic concept of smart city construction and the analysis has been done on Dhule city. The Challenges arises during the smart city development has also been covered. The paper covers the various features of Dhule city and improvement that can be done within the city.*

Key Words: smart city, Urbanization, Smart economy

1. INTRODUCTION

India is among the countries that are facing the rapid shift of rural population to the urban areas. This Change is indicated by the decadal growth of urban versus rural population. A smart city is a city that has the ability to merge multiple technological solutions in a safe manner. The Smart city provides liveable, sustainable and efficient living. A smart city uses the information and communication technologies(ICT) to improve quality, performance and introduction to the urban services. The smart city are developed with the purpose of improving the management of urban flows and providing the actual solutions to the challenges

1.1 Various core infrastructure elements in smart city

1. Provision of Adequate water supply,

2. Assured Electricity supply,

3. Sustainable Environment.

4. Budget Housing for poor,

5. Solid Waste Management,

6. Efficient and Safe Transportaion,

7. Robust IT Connectivity and digitalization

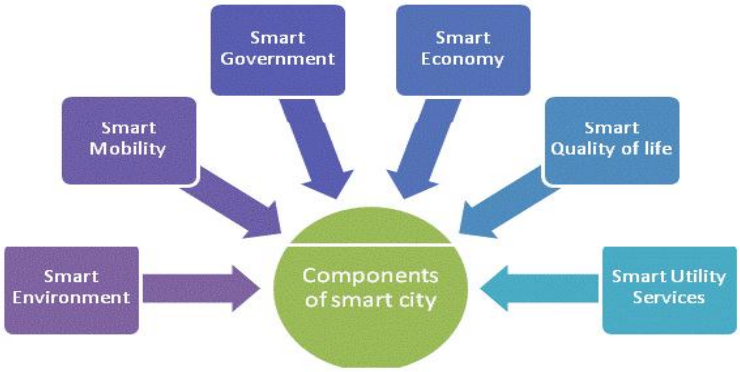

Fig- Components of Smart City

2. LITERATURE REVIEW

Keeping in view the factors required for the building up of corporate infrastructure, the investing companies such as financial institutions, automobile to the IT sectors, are willing for the smaller cities transformation into the rapid growing cities within the short period of time.

2.1 Kochi

Smart city Kochi is under the Special Economic Zone under development in Kochi, Kerala. The Smart city (Kochi) Infrastructure Pvt ltd is a joint venture company formed to develop Kochi Smart City project. Government of Kerala (16% share), TECOM Investments (84% Share), a subsidiary of Dubai Holding are the main investors of the company. The four Storied building project of 22 lakh sq. ft. spread over 50 acres will be constructed on the banks of kadambraya at Edachira near Kakkanad

2.2 GIFT (Gujarat International Finance Tee-City)

Designed as modern recreation of India's architectural past, mirrored twins of the Gateway. Poperly placed between the political and commercial capitals of Gujarat. It is a public-private partnership, India's first major super tall Central Business District project is designed to be the Central point India booming financial services

3. METHODOLOGY

The basic aim of the smart cities mission is to boost economic growth and improve the lifestyle of people by providing the local area development and consuming technology that lead to smart outcomes. The area based development will help transforming the existing areas by retrofitting, redevelopment, including slums into better planned areas and ultimately improving the quality of the public. The comprehensive development in such a way will improve the quality of life, create employment and increase incomes especially for the poor and leading to the Inclusive cities.

4. TREND OF URBANIZATION IN INDIA

Urban population in India is growing at a high rate, the rate of growth of urban population is higher than rural population. According to the government data the increase in population from around 27.8%(286 million) in 2001 to 31.2%(377 million) in 2011 and it is being estimated to be 40% by 2030 and more than 50% by 2050

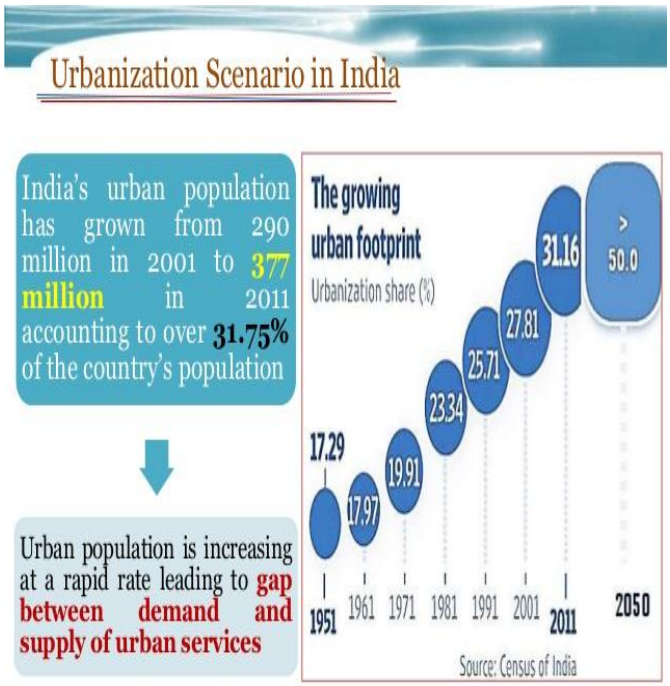

Fig-Urban Population growth in census year

The Growth of urban population is very explosive. The number of census town increased from 5161 in 2001 to 7935 in 2001.

Table- Percentage increase in population

Urban Population	31.8 %
In metro Cities(million Plus)	33%
In Medium Cities(0.1 to 1 million)	19.7%
In smaller cities <0.1 million	46.7%

5. DEMAND OF SMART CITY

Demand of smart city due to migration of population from rural areas into the cities leading to scarcity of resources and degradation in quality of life. The expanding population should be accommodated with proper supply of all resources and security. The smart city helps to enhance infrastructure that would be capable of meeting the growing demand. Basic aim of smart city is to meet the technological needs, market needs, social needs of the citizens.

6. EXISTING CONDITION OF DHULE CITY

Dhule is a city and a municipal corporation in a Dhule district, located at north-western part of Maharashtra, India. Dhule city is among Top the well planned city of India, Designed by Sir Mokshagundam Visvesvaraya. It is located on NH211, AH46 and AH47.

Table- Key Geographical Features of Dhule City

Indicator	Year	Dhule	Maharashtra
Area in Sq.km	2011	7,197	307,713
% Share in state geographical area	2011	2.4%	100%
No. of Talukas	2011	4	357
No. of Inhabited Villages	2011	674	40,959
% of forest Area	2011	28.5%	100%

Table- Key Demographic Indicators

Indicator	Year	Dhule	Maharashtra
Population	2011	375559	112,372,972
Decadal growth rate of Population%	2001-2011	19.96%	15.99%
District Share in state population%	2011	1.82%	100%
Urban Population,% of total population	2011	28%	45%
Population Density, Per sq.km	2011	285	365
Literacy Rate	2011	72.80%	82.34%

6.1 ANALYSIS OF SOME AREAS WITHIN DHULE CITY

Despite being among the top well planned city in India, the Dhule city lacks the development. The Dhule city has not been developed up to its potential. The provision of Sewage treatment plant is must to reduce river pollution. The solid waste management should be done properly, presently it is being dumped in an open land. The main road intersections within the city should be developed providing modern signaling, zebra crossing for pedestrians, etc.

6.1.1 STUDY OF SOLID WASTE MANAGEMENT OF DHULE CITY

The estimated amount of Municipal Solid Waste generated in Dhule city is about 170 MTPD. The 100-120 MTPD of solid waste is being dumped on open land as specified by the corporation. The site of dumping is about 3-4 acres. Tremendous objection have been raised by the citizen in concern with bad odour, adverse effect on health, flies menace, etc.

Fig-Chart indicating Solid Waste Management Steps

The method of reduce, reuse, recycle, recovery and disposal should be adopted for effective handling of solid waste.

6.1.2 Water Supply System of Dhule City

Table-Sources of water supply for Dhule City

Source of Water	Distance from City in Km	Total Capacity in MCFT
Haranmal lake	6	380
Dedargaon lake	14	115
Nakane Lake	5	380
Tapi River	50	2250
		Total=3125

Table- Water Purification Centre and their Capacity

Name of water purification centre	Distance(Km)	Total Capacity(MCFT)
Sulwade Barrage	50	2250
Haranmal Tekadi	6	380
Dedargaon Lake	14	115

Amount of Water Consumed=135 lpcd for domestic purposes

Amount of Water required (Domestic Purpose)

=Population x rate of water per lpcd

=630506 x 135

=85118310 l lit/day

Amount of Water per year

=85.11x365=3106.5 MLD

Water Available=3125 MCFT

1MCFT=28.3 MLD

So, 3125 MCFT= 28.3 x 3125

=88437.5 MLD (Available per year)

For the Domestic Purpose 3106.5 MLD water is consumed out of 88437.5

After water is consumed by Domestic demand it should be preserved to meet the other demands of the city

7. CONCLUSION

After studying it is clearly understood that there is a huge demand for the smart city construction according to the rising urban population of India. The development should be basically people centered and should include Inclusive Infrastructure, it should have resilience and sustainability, capable of managing risk and ensuring safety. The general features of Dhule city are studied. Strong infrastructure will help Dhule city in boosting its economy

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