

# “STUDY ON FACTORS AFFECTING IN DEVELOPMENT OF ECO-CITY ON DMIC CORRIDOR”

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**ABSTRACT :** In this research paper Urbanization usually occurs when people move from villages to cities to settle, in hope of a higher standard of living. By means of urbanization there in city creates a high density which requires more public infrastructures and facilities, which not fulfill by the authority. The paper presents and shows Increasing populations in the city has resulted in Economic, Environmental and Social problems. If this problems cannot solve effectively then its impact on the future generation so there is need to prepare a sustainable development plan for now and also for future generation. So there is need to transform existing cities in to sustainable manners for the safe, efficient, clean and green and offer a high quality of life. Where Khambhat is the city which is consider in nagar palika but it can be also a sustainable and Eco-city by usage of new smart techniques. All the parameters which are required for Eco-City, that all are presented and It is better to think of the eco-city as an ambition or objective which there will be multiple ways to achieve.

**Keywords:** Eco-city, Sustainable Development, Sustainable City, Planning, Environment.

## I. INTRODUCTION

### 1.1 Eco-city

Hazardous development of city because of the world's urban population growth and increasing concern about the environment, the challenge of making urban living more sustainable is in the forefront of the minds of many designers, academics and government officials. In recent years, one response that has gained increasing prevalence is the idea of the 'eco-city.'

- ❖ An Eco city is a human settlement modeled on the self-sustaining resilient structure and function of natural ecosystems.
- ❖ The main aim of eco-cities is to eliminate carbon waste, use renewable energy resources, and to incorporate the environment into the city.
- ❖ Nearly one billion urban poor still live in slums and informal settlements, mostly in Asia, Africa, and Latin America, and are often excluded from access to affordable housing, good-quality basic services.
- ❖ This is where territorial development comes in. It helps us understand cities not only as individual entities, but also the connectivity between them that allows faster economic growth and links people to better jobs.

The eco-city phenomenon has become truly global and mainstream, against the background of a majority of people now living in cities and the growing international recognition of the scale and severity of climate change. Thus, China and India are currently at the forefront of eco-city development in Asia, with international projects such as Tianjin Binhai Eco-city and the four eco-cities planned in the Delhi-Mumbai Industrial Corridor with input from Japan; in the United Arab Emirates, Masdar is being developed as a brand-new zero-carbon city to be emulated elsewhere in the Middle East (and beyond); Hacienda Ecocities in Kenya is promoted as a model sustainable city for Africa; and Växjö (Sweden), Freiburg (Germany) and St. Davids (United Kingdom) are vying to be the 'greenest city' of Europe.

### 1.2 The DMIC Corridor

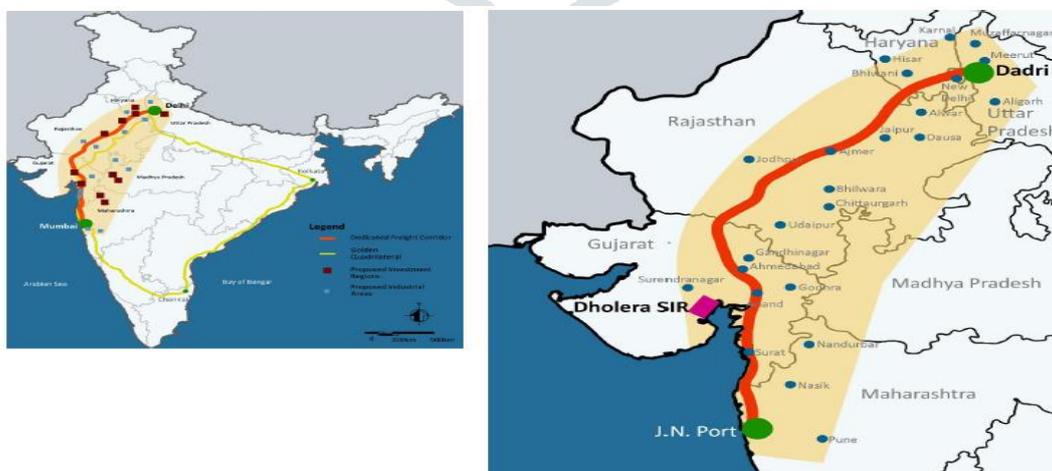


Figure 1 The DMIC Corridor

Source: Department for Promotion of Industry and Internal Trade

Figure 1 Characterizes the route of DMIC Corridor. The Delhi–Mumbai Industrial Corridor Project (DMIC) is a planned industrial development project between India's capital, Delhi and its financial hub, Mumbai.

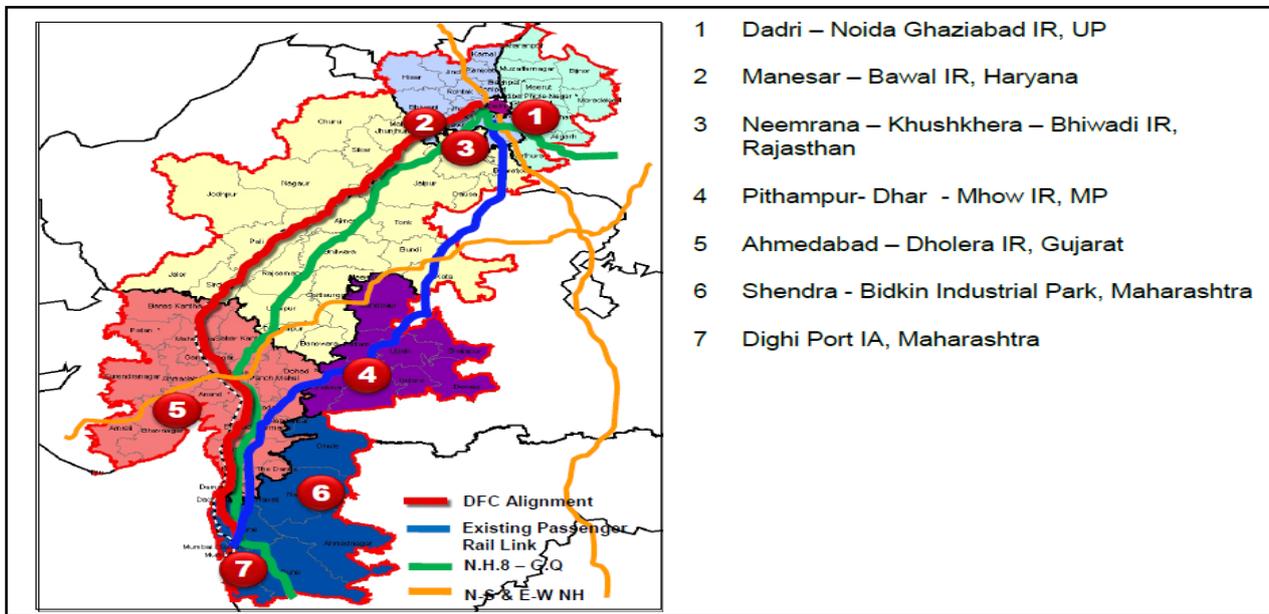


Figure 2 Seven Nodes being developed in DMIC Phase I

Source: Department for Promotion of Industry and Internal Trade

Figure 2 It includes 24 industrial regions, eight smart cities, two international airports, five power projects, two mass rapid transit systems, and two logistical hubs. The eight investment regions proposed to be developed in Phase I of DMIC are Dadri-Noida-Ghaziabad (in Uttar Pradesh), Manesar-Bawal (in Haryana), Khushkhera-Bhiwadi-Neemrana and Jodhpur-Pali-Marwar (in Rajasthan), Pithampur-Dhar-Mhow (in Madhya Pradesh), Ahmedabad-Dholera Special Investment Region (in Gujarat), and Aurangabad Industrial City (AURIC) and Dighi Port Industrial Area in Maharashtra.

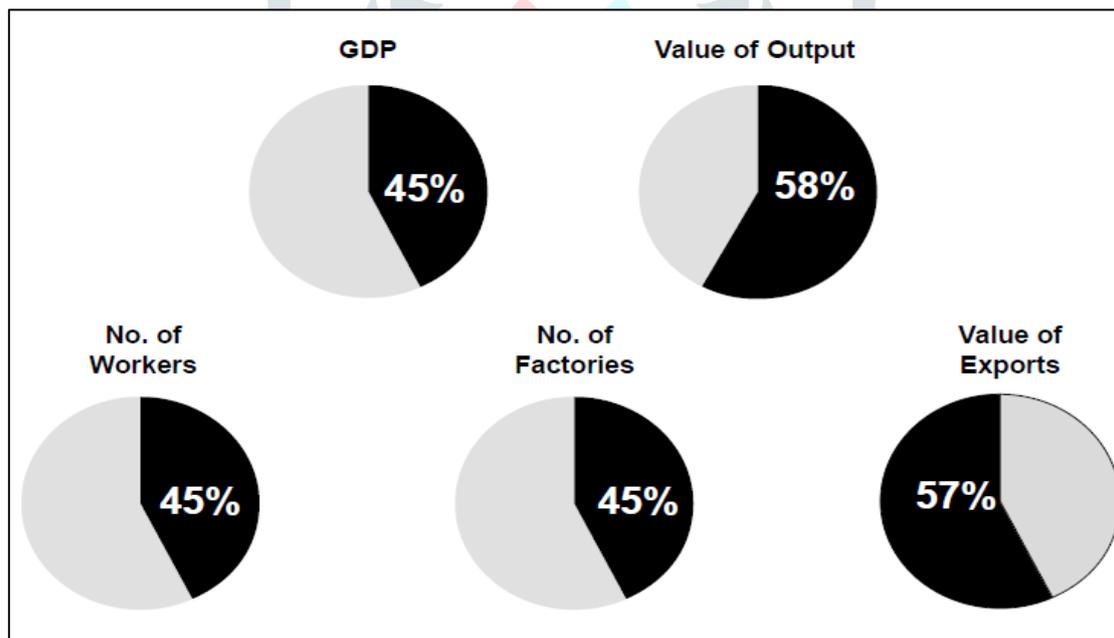


Figure 3 Contribution of DMIC States

Source: Ministry of Statistics & Programme Implementation, ASI, Labour Bureau

**II. OBJECTIVES OF STUDY**

1. To find out the different factors for the planning of Eco-city.

**III. LITERATURE REVIEW**

- The author **PRACHI NANA WAKODE, RESHMA RASKAR-PHULE, KAUSTUBH LUNAWAT, BHASWINI KOKITKAR, PRAVIN LONDHE, OMESHWARI (2017)** <sup>[1]</sup> kurzekar has been concerned about study with Gujarat International Finance Tec-City (GIFT) is a globally bench-marked international financial service Centre (IFSC) developed by Government of Gujrat. It is an under-construction central business district between Ahmedabad and Gandhinagar in Indian state of Gujarat. It will be India’s first global financial and IT hub of its kind. In this research paper I have seen the various methods, options and technologies which have been implemented and utilised in GIFT for the sustainable development of this project.

- In this paper the author **AR. MANITA SAXENA, AR. SUMAN SHARMA (2015)** <sup>[2]</sup> has considered problems it is India at present time is undergoing a fast paced urban transformation from predominantly rural economy and rural habitation system. In this paper The Periurban areas in India are one of the most happening areas and needs most urgent attention so as to understand the dynamics of urbanization and urban transformation The policy practice and planning goes hand in hand so that quality of life in these areas as well as problems of urban infrastructure in future cities can be resolved The India offers a unique situation of increasing population and migration of population from rural to urban and from one state to another.
- The author **ELIZABETH RAPOPORT AND ANNE-LORENE VERNAY (2014)** <sup>[3]</sup> has presents the results of a discourse analysis of documents describing six different eco-city projects: Dongtan Eco-City, Masdar City, Sonoma Mountain Village, Hammarby Sjöstad, Eco-village Ithaca, and Malmö bo01. The analysis in this paper demonstrated that there is a great deal of diversity among projects considered to be eco-cities. By looking for particular themes in the discourse about these projects, we have demonstrated that this diversity goes beyond just their size, location and ambition. Indeed, it expands to their vision of what a sustainable urban future looks like, the techniques that planners and designers should use to achieve it, and the actors who should be involved.
- **NAN ZHOU AND CHRISTOPHER WILLIAMS (2013)** <sup>[4]</sup> conclude that the development of a low-carbon eco-city evaluation scheme in any jurisdiction should begin with an examination of the goals articulated in that region's most recent urban development plans. These goals should then be expanded based on consideration of common indicator categories used internationally and examples of successful planning models. This will enable the region to learn from and add to international policy and technology development efforts. The process of developing eco-city plans and metric systems will be incremental as cities tailor policies and practices to specific local circumstances and changing external factors such as technological developments and economic changes.
- In this paper the author **MAHESH PATEL (2009)** <sup>[5]</sup> tries to understand the current situation of the agate industry in context of history, economics, environment and associated workers. The paper also explains the basic of agate and the manufacturing process that is used in the agate industry. The paper provides an insight to the current scenario of the agate industry in Khambhat area of Gujarat. People who are working in Dry Polish and Drum Polish have been most affected by Silicosis disease. The prevention of health hazards from the work environment, providing exhausts for lowering the incidence of occupational diseases or installation of a new technologically & advanced equipment in the factory are some of the required useful steps towards the overall development of the Agate Industry.

#### IV. MAJOR FINDINGS

- Improve public transports, implement better technologies and to better plan the transportation system.
- People who are working in Dry Polish and Drum Polish have been most affected by Silicosis disease. The prevention of health hazards from the work environment, providing exhausts for lowering the incidence of occupational diseases or installation of a new technologically & advanced equipment in the factory are some of the required useful steps towards the overall development of the Agate Industry.
- Population is increasing but recreational infrastructure are as it is or decreasing in percentage and area.
- various methods, options and technologies have to be implemented and utilised in project for the sustainable and eco development of the project.
- Increase the amount of green areas in the initiative, and/or restore damaged or destroyed green areas.

#### V. STUDY AREA KHAMBHAT

##### City Location and Evaluation

Khambhat is located at Geographic location 22.32° N latitude 72.62° E longitude, also known as Khambhat and Cambay, is a town and the surrounding urban agglomeration in Khambhat Taluka, Anand district in the Indian state of Gujarat. It was once an important trading center, but its harbour gradually silted up, and the maritime trade moved to Surat. Khambhat lies on an alluvial plain at the north end of the Gulf of Khambhat, noted for the extreme rise and fall of its tides, which can vary as much as thirty feet in the vicinity of Khambhat. Khambhat is known for its halvasan, sutarfeni and kites (patang), and for sources of oil and gas.

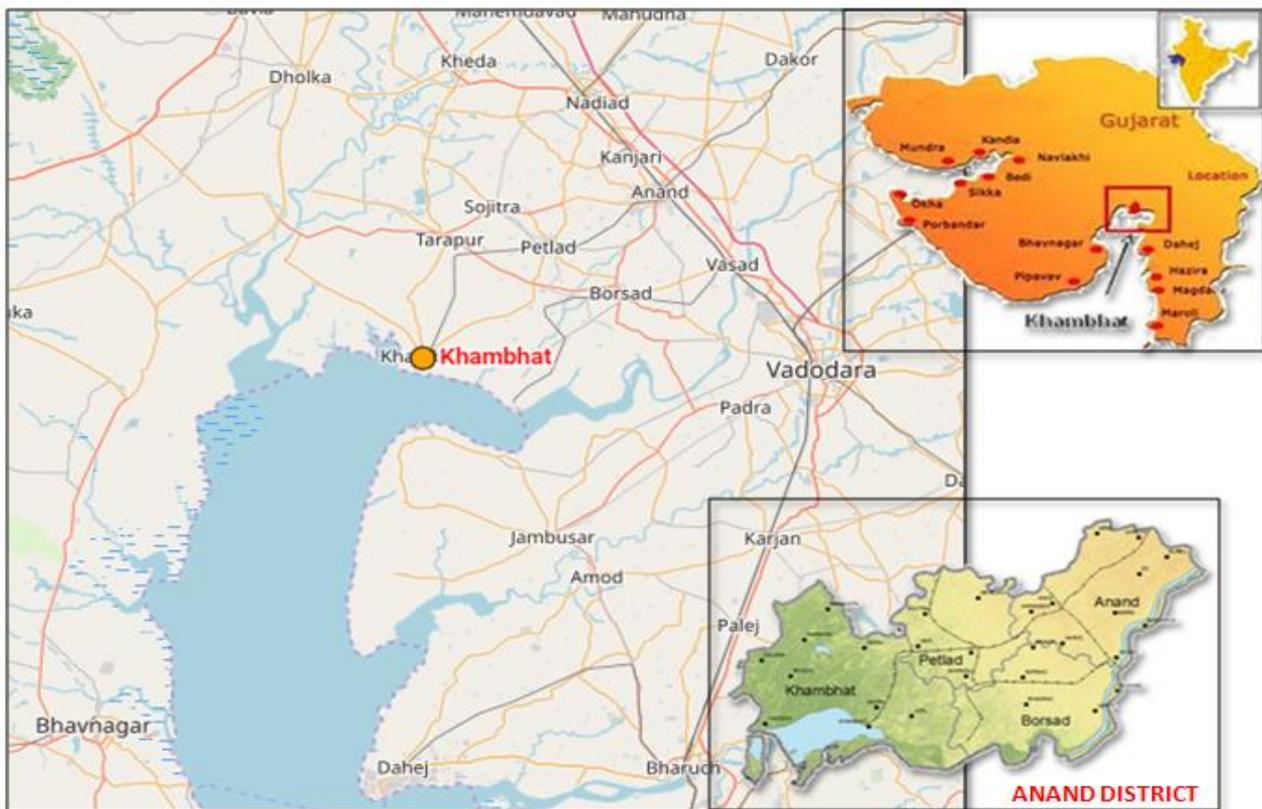


figure 4 Location of Khambhat city

## VI. CHALLENGES AND ISSUES

### **Lack of urban transit system**

- Smaller roads
- Increased sales of 2 wheelers and 4 wheelers

### **Industrial water scarcity**

- Water level inadequate
- leads to underutilization GIDC, Lack basic facilities for smooth functioning

### **Lack of solid waste treatment plant**

- Plastic bags and other garbages are coming to road by windflow.
- More pollution on road
- Bad smell around the area
- Waste treatment plant is not available
- No segregation, composting

### **Public Open Space**

- A variety of public open spaces is available in some neighbourhood, such as Nareshwar Talav, Gardens. As of now 3% of the city area has green cover. There are total of 3 gardens in the city apart from Nareshwar and Madla lake area.

### **Open wire electricity supply**

- Now a days mostly all developed city's are facilitate with underground electric supply which is safe and also decrease the traffic congestion in city. which is not done in khambhat city by nagar palika for safety measures and all given poles are also very old. which is very necessary for safety and traffic measures.

- Although number of tourist increases day by day, tourist are not satisfied with this place due to improper management and lack of infrastructure facilities
- eco-city initiatives increase in number and become more globally spread, the pressure to arrive at more universally comparable and usable approaches will surely increase. Policy learning and transfer across urban and national contexts can be expected to grow as cities and their communities increasingly co-operate to improve urban sustainability practice. The experience to date points to several challenges for consolidating eco-city indicator frameworks in the future.

## VII. SWOT ANALYSIS OF KHAMBHAT CITY

<ul style="list-style-type: none"> <li>•Vicinity of Sea which can stipulate in growth of port</li> <li>•Proximity to the DMIC Corridor</li> <li>•Closeness to 3 big cities of Gujarat(i.e. Ahmedabad, Vadodara and Surat)</li> <li>•Well rail and road connectivity</li> </ul> <p style="text-align: center;"><b>STRENGTH</b></p>	<ul style="list-style-type: none"> <li>•Inefficient Urbanization</li> <li>•Lack of Employment Opportunities</li> <li>•Lack of urban transit system</li> <li>•Industrial Water Scarcity</li> <li>•Lack of Tourism</li> </ul> <p style="text-align: center;"><b>WEAKNESS</b></p>
<ul style="list-style-type: none"> <li>•Development of Port</li> <li>•Improve Social Inclusivity</li> <li>•Agate industry hub</li> <li>•Promote Ecotourism</li> <li>•Advanced healthcare</li> <li>•Transparent Governance</li> </ul> <p style="text-align: center;"><b>OPPORTUNITY</b></p>	<ul style="list-style-type: none"> <li>•City can only grow vertically</li> <li>•Increasing migration from the city</li> <li>•Extra ordinary facilities (recreational) needs to be developed.</li> </ul> <p style="text-align: center;"><b>THREAT</b></p>

## VIII. SUGGESTIONS

The above problem restricts the development of the Eco-city Khambhat. There is need to have a proper strategies for the development of the Khambhat. Some of the suggestions are listed below for the development of Khambhat.

### Employment

- Creation of Transit Hub and promoting the Agro based Industries will increase the employment within the City and the benefits will further enhance with the implementation of GST.
- Integration of all skill development centre with industries will enabled balanced generation of skill-set with actual skill demand. This will enable skill resource find right job quickly and industry find right resource well in time.

### Education

- Standard of education need improvement with Modernisation of Schools/College Infrastructure with virtual classrooms to offer state-of-the-art schooling to students.
- Provision of Medical College with Super speciality hospital is need of the city. Government of Gujarat has given approval for establishing Medical College in Khambhat.

### Health

- Khambhat is aiming at leveraging the benefits of telemedicine to offer affordable, reachable and on demand medical facilities, even to the citizens in remote area.
- To extend Healthcare Management Information System with Electronic Medical Record system (EMR). This aims at provssiding paperless, cashless and relatively transparent Healthcare & Wellness facility.

### Public Open Space

- More green Spaces need to be developed all over city. Cycle track and Pedestrian Facility need to be developed.
- Development of vertical farms (verticulture) will further expand the green cover of the city.
- Encourage technology implementation style treatment of the physical environmental effects as one of the techniques used to maintain the environmental sustainability of the project.
- Design a map of the sustainable development using the system (GIS) described the quality of the projects proposed and the size and time so as to maintain the rate of substitution and replacement construction projects between the proposed and existing buildings currently.

## CONCLUSION

In Gujarat Khambhat is a city which is consider in municipality and its literacy rate is more than 80% but, it's still doesn't exist in smart city project. So with that it can be also a sustainable city. If Khambhat can be a sustainable then the quality of life can be high of inhabitants and people can live good life. Gujarat is developing in all the domains of infrastructure but still there are some cities and villages are there which are not developed in all or in any particular domain. As such there are many cities are developed in all domain but lacking in one or few domain, many cities are developed but not have sufficient recreational infrastructure, industrial area, residential area, commercial hub. Khambhat is one of them city which don't have sufficient infrastructure facilities which needs improvement. To fulfill that need and provide good and sufficient eco planning and development this study is performed, in which we have identified some places that can be develop as a development. For that literature study has been performed that is described here, now as per criteria and site selection designing will be done to uplift infrastructure facilities for Khambhat city.

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