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"Critical Appraisal of Three Classic Urban Planning Models Based on Their Resemblance to the Current Urban form of Jhansi in Context of the Smart City Mission of the City"

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Abstract—*The city of Jhansi is one of the most important historic places in Uttar Pradesh and practically functioning as a capital for the Bundelkhand region. The city is one of the hundred cities identified for the Smart city mission of the central government. It is obvious to think of the suitability of an urban planning model based on which the development plan may be conceptualize to convert the city in to smart city. This paper focuses on analyzing the current urban form of Jhansi and critically appraising three classic urban planning models namely "The garden cities of tomorrow" by Ebenezer Howard, 'multi-centers' by Harris and Ullman and "Broadacres" by Frank Lloyd Wright; a comparative appraisal is done for these three identified urban planning models and the inferences are enlisted herewith.*

Keywords: Smart city mission, the garden cities of tomorrow, multi-centers, Broadacres

1. INTRODUCTION

As we can see from the population density map of India, Uttar Pradesh falls in to the densest pocket along with Bihar, West Bangal and some part of Delhi NCR region. This fact makes it more challenging to prepare the development plan for the proposed smart city mission. This paper is trying to blend the subjectivity with objective parameters of development as the fundamental principles of urban planning covered in the classical models remain unchanged.

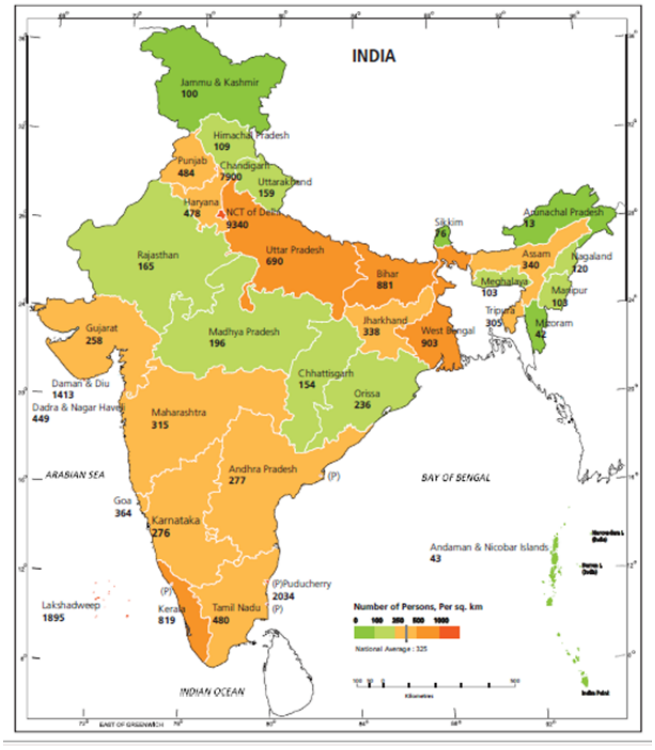

Fig. 1: Population density map of India. Source: Census 2011

2. OVERVIEW OF STUDY AREA JHANSI

As per the Census 2011 data Jhansi has the population of 5 05 693, Sex ratio of 905 and literacy rate of 83.02%. Jhansi is a historic city in the Indian state of Uttar Pradesh. It lies in the region of Bundelkhand on the banks of the Pahuj River, in the extreme south of Uttar Pradesh. Jhansi is the administrative headquarters of Jhansi district and Jhansi division. Called the Gateway to Bundelkhand, Jhansi is situated between the rivers

Pahuj and Betwa at an average elevation of 285 meters the original walled city grew around its stone fort which crowns a neighboring rock. The ancient name of the city was Balwantnagar from 1817 to 1854; Jhansi was the capital of the princely state of Jhansi which was ruled by Marathara jas. The state was annexed by the British Governor General in 1854; Damodar Rao's claim to the throne was rejected but Rani Lakshmibai ruled it from June 1857 to June 1858.

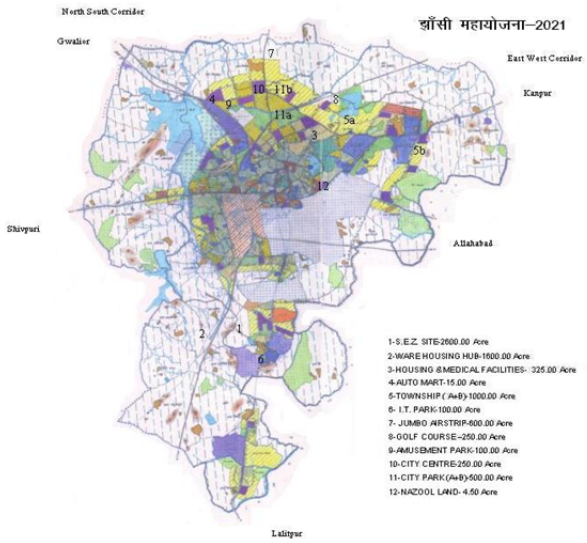

Fig. 2: Proposed DP of Jhansi till 2021
Source: Jhansi Development Authority

3. THE SMART CITY MISSION

There is no universally accepted definition of a Smart City. It means different things to different people. The conceptualization of Smart City, therefore, varies from city to city and country to country, depending on the level of development, willingness to change and reform, resources and aspirations of the city residents. A Smart City would have a different connotation in India than, say, Europe. Even in India, there is no one way of defining a Smart City. Some definitional boundaries are required to guide cities in the Mission. In the imagination of any city dweller in India, the picture of a Smart City contains a wish list of infrastructure and services that describes his or her level of aspiration. To provide for the aspirations and needs of the citizens, urban planners ideally aim at developing the entire urban eco-system, which is represented by the four pillars of comprehensive development — institutional, physical, social and economic infrastructure. This can be a long term goal and cities can work towards developing such comprehensive infrastructure incrementally, adding on layers of 'smartness'. In the approach to the Smart Cities Mission, the objective is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions. The focus is on sustainable and inclusive development and the idea is to look at compact areas, create a replicable model which will act like a light house to other aspiring cities. The Smart Cities Mission of the Government is a bold, new initiative. It is meant to set examples that can be replicated both within and outside the Smart City, catalysing the creation of similar Smart Cities in various regions and parts of the country. The core infrastructure elements in a Smart City would include:

- Adequate water supply,
- Assured electricity supply,
- Sanitation, including solid waste
- Management,
- Efficient urban mobility and public transport,
- Affordable housing, especially for the poor,
- Robust IT connectivity and digitalization, vii. good governance, especially e-Governance and citizen participation,
- Sustainable environment, ix. safety and security of citizens, particularly women, children and the elderly,
- Health and education.

Accordingly, the purpose of the Smart Cities Mission is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to Smart outcomes. Area-based development will transform existing areas (retrofit and redevelop); including slums, into better planned ones, thereby improving livability of the whole City. New areas (Greenfield) will be developed around cities 7 in order to accommodate the expanding population in urban areas. Application of Smart Solutions will enable cities to use technology, information and data to improve infrastructure and services. Comprehensive development in this way will improve quality of life, create employment and enhance incomes for all, especially the poor and the disadvantaged, leading to inclusive Cities

Some typical features of comprehensive development in Smart Cities are described below.

i. Promoting mixed land use in area-based developments — planning for 'unplanned areas' containing a range of compatible activities and land uses close to one another in order to make land use more efficient.

ii. The States will enable some flexibility in land use and building bye-laws to adapt to change; ii. Housing and inclusiveness — expand housing opportunities for all; iii. Creating walkable localities — reduce congestion, air pollution and resource depletion, boost local economy, promote interactions and ensure security. The road network is created or refurbished not only for vehicles and public transport, but also for pedestrians and cyclists, and necessary

administrative services are offered within walking or cycling distance;

iv. Preserving and developing open spaces — parks, playgrounds, and recreational spaces in order to enhance the quality of life of citizens, reduce the urban heat effects in Areas and generally promote eco-balance;

v. Promoting a variety of transport options — Transit Oriented Development (TOD), public transport and last mile para-transport connectivity;

vi. Making governance citizen-friendly and cost effective — increasingly rely on online services to bring about accountability and transparency, especially using mobiles to reduce cost of services and providing services without having to go to municipal offices; form e-groups to listen to people and obtain feedback and use online monitoring of programs and activities with the aid of cyber tour of worksites;

vii. Giving an identity to the city — based on its main economic activity, such as local cuisine, health, education, arts and craft, culture, sports goods, furniture, hosiery, textile, dairy, etc;

viii. Applying Smart Solutions to infrastructure and services in area-based development in order to make them better. For example, making Areas less vulnerable to disasters, using fewer resources, and providing cheaper services.

The smart city mission covers most of the objective parameters of the urban infrastructure but the subjectivity in terms of the conceptual direction which is generally found in the classical urban planning model is left for the local authority.

4. THREE CLASSICAL URBAN PLANNING MODELS

4.1 "The garden cities of tomorrow" by Ebenezer Howard

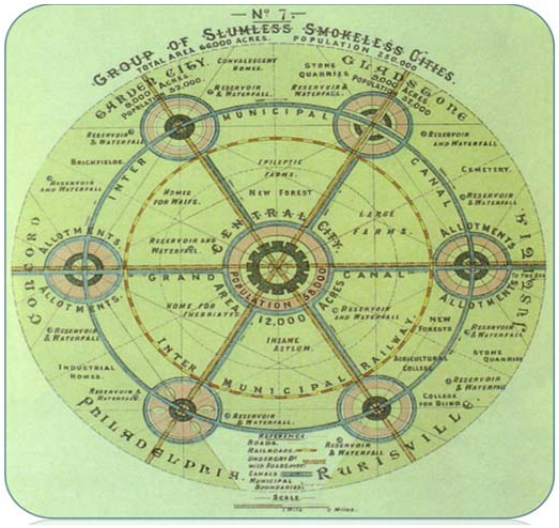

Fig. 3: Graphical Illustration of the Howards Model. Source: Google Images.

Ebenezer Howard 'Garden Cities of To-morrow' in 1902. Influenced the later strategy of building new towns in the UK, US, Canada, Argentina, Israel and Germany. As with most instances of social engineering, the garden city movement didn't quite achieve what it set out to do. Its laudable motives and egalitarian vision contrast with the often depressing artificiality of 'garden cities', and the fact that they merely function as dormitories to the larger cities they so often adjoin. Ebenezer Howard's Garden City concept shows us a place where genuine urban activities are carried at human scale. The garden city introduced the use of greenbelts that have served many uses including the preservation of agricultural and rural life, nature and heritage conservation, recreation, pollution minimization, and growth management. Garden city tradition endowed urban planning with a social and community dimensions. The garden city idea however, showed how both industrial estates and collective retailing spaces could be used within a comprehensive planning approach to serve public purposes

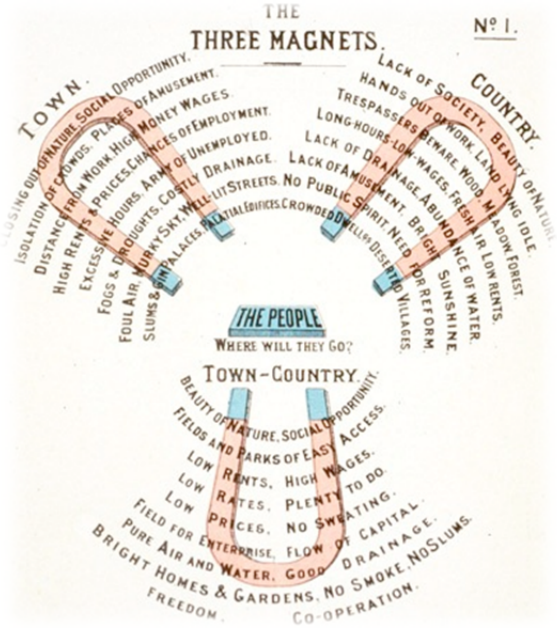

Fig. 4: Graphical Illustration of the three magnets theory followed in the Howards Model. Source: Google Images.

4.2 'Multi-centers' by Harris and Ullman

A model of urban land use in which a city grows from several independent points rather than from one central business district. Apart from the CBD, there are several separated, secondary centres. Certain functions require specialised facilities or sites, e.g. a port district needs a suitable waterfront. Similar functions may group together for agglomeration economies. Criticisms about the multiple nuclei model Negligence of height of buildings. Non-existence of abrupt divisions between zones. No consideration of influence

of physical relief and government policy. The concepts may not be totally applicable to oriental cities with different cultural, economic and political backgrounds Optional locations for focal activities and system terminals, good psychological orientation adaptability to existing conditions. Depends on stability to key points, potential accessibility problems. Tendency to dilute focal activities

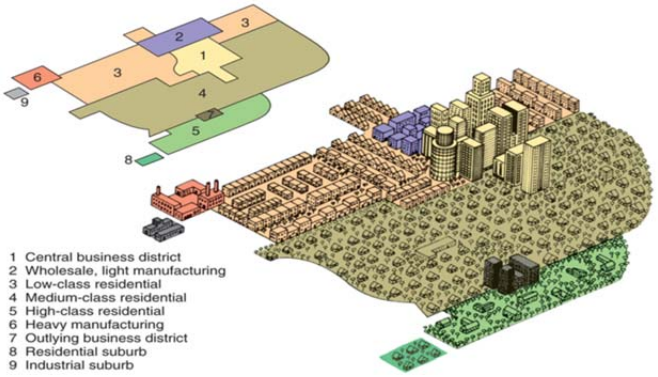

Fig. 5: Graphical Illustration of the Harris and Ullman's Model. Source: Google Images.

4.3 "Broadacres" by Frank Lloyd Wright

Broadacres City was an urban or suburban development concept proposed by Frank Lloyd Wright throughout most of his lifetime. He presented the idea in his book The Disappearing City in 1932.

According to him, cities would no longer be centralized; no longer beholden to the pedestrian or the central business district

Fig. 6: View of the Broadacres city by FLW. Source: Google Images.

Broadacres is a community without experts. Everyone does everything. Everyone's a farmer - industrial worker - artist: reminiscence of the "Arts and Crafts" movement from Wright's beginnings. The ideal for labour is self-fulfilment. Broadacres is a continuous metropolitan region of low density. Areas designated to serve similar purposes are allocated functionally (parallel along traffic systems of more than regional importance like monorail and motorway): trade, entertainment, industry, agriculture, housing etc.

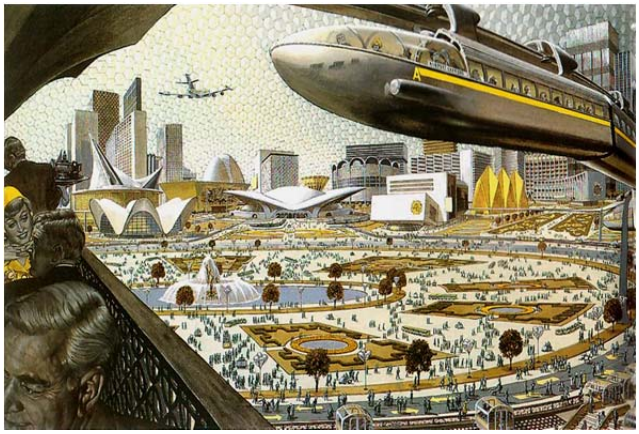

Fig. 7: Graphical Illustration showing components which were conceptualized in the Broad acre city by FLW. Source: Google Images.

Broadacres City is the reality that is today. To some extent the interstate highways, the rise of massive shopping malls, the cookie-cutter developments in suburbia—they are Broadacres and Broadacres is them in a lot of ways. Not necessary planned, more in a piecemeal fashion. If we look at Broadacres City piece by piece and drawing by drawing, sure enough almost everything he designed we can find in there. Broadacres was a testing ground for perfection, or at the very least something more civilized than the chaos that seemed to define 20th century life. Right foresaw that his model for the perfect community would probably never actually be built to his specifications. He believed that perhaps America was too broken to recover from the degradation of the city; too blind to the possibilities of what he saw as a better way of life. We got the cars; the sprawl; the gas stations. Cities as diverse as Los Angeles and Houston and Janesville, Wisconsin are in some ways versions of Wright's Broadacres dream. But in the end, for better and for worse, America never saw the rise of that architect king. Arrangements are selective - idealized - but not exclusive.

5. ANALYSIS

The Garden city of tomorrow concept is basically advocating the need of the green space and its equal distribution in order to optimize the benefits. Jhansi in its current form has several gardens in spite of the evident shortage of water, makes this model a relevant one. However the supporting urban infrastructure to the existing gardens and the reservation for gardens at strategic locations in the DP for smart city shall be the key aspects of the proposal.

The Multi-centers' model by Harris and Ullman talks about the distribution of CBD in order to divert the traffic and achieve the functional sustainability. In current form of Jhansi the CBD is restricted to not so far centers like Sipri bazar, Elite and Sadar bazar. This fact makes this model viable and developing new CBD at far locations and make them commercially viable may be one of the major concerns for the proposal.

The high-rise buildings incorporated in the Broadacres City may be debatable but the sophisticated urban infrastructure like LRT, Comfortable public transit along with the paratransit facility is the most relevant aspect as todays Jhansi majorly depends on the shared auto-rickshaws in the name of mass transportation.

6. CONCLUSION

The study, analysis and inclusion of the inferences from the classical urban planning models may increase the subjective gravity of the Development proposal as with the time the technologies and economic viabilities are changing but the fundamental principles of the urban settlement planning remains the same and each classical model is critically giving emphases to on one or more such basic principles.

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