

Geographical Background and Urban Sprawl of Varanasi District

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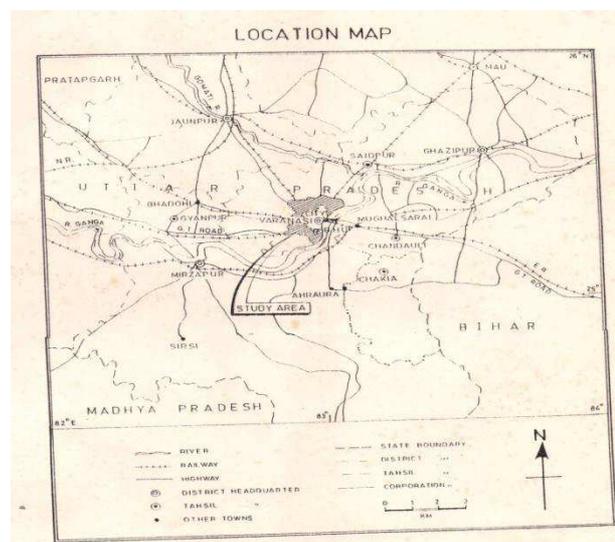
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Abstract

Varanasi is situated in the sub-tropical part of the middle Ganga plain. Varanasi is regarded among few cities of the world which shows little shifting of its site. The unique ancient site of the city remains protected from three sides, Ganga in the east, Varuna in the north, and the Assi nala in the south. Before the sixth century, it was the capital of the Kingdom of Kashi. In the city, the process of growth in its built up area has followed to some extent all the three traditional theories of urban development. Personality of this city is identified as 'Banarasi Culture' being famous for its quality of carefreeness, delight and rigidity. By virtue of its dominant religious character, Varanasi has been referred to as the 'Religious Capital of India'. Thus Varanasi is one of the most ancient living cities of the world. This paper will examine the impacts of various development programs on the expansion of the city.

KEYWORDS: Subtropical, Ancient, Carefreeness, Rigidity, Religious, Living City. -----

Varanasi city lies near the western margin of the middle Ganga plain. The nature and the character of the bank of the Ganga formed of Kanker ridge has made the position of Varanasi so stable and enviable that it is regarded among few cities of the world which shows little shifting of its site.¹ Its geographical coordinates are 25⁰18' N latitude and 83⁰1' E longitude. This piece of land, on which the present city exists, is not far away from the southern Vindhyan uplands, which form gateway to the south. Varanasi city communicates with the surrounding country not only by the navigable Ganga but also by several railway routes and numerous roadways. The Grand Trunk Road passing through the city connects it with Patna and Calcutta in the east as well as with Allahabad, Kanpur and Delhi in the north-west (Fig. 1).



PHYSICAL LANDSCAPE:

The physical landscape of Varanasi is built on a high ridge of Kankar (lime concretion) forming the concave bank of the Ganga for a distance of about 5 Km. above the normal flood level. The city undoubtedly owes its significance to its peculiar site to a considerable extent. Such an advantageous site of this town attracted not only the early settlers, but also continued to exert influence in the nature of urban growth during different phases. Rich alluvial soils of the adjoining plains provided favourable background for the establishments of rural settlements. This unique ancient site of Varanasi remains protected from three sides, the Ganga in the east, the Varuna in the north and the Assi nala in the south. The 'Skand Purana of Kashi Khand' mentions the sacred topography of this city, bounded by these three rivers.

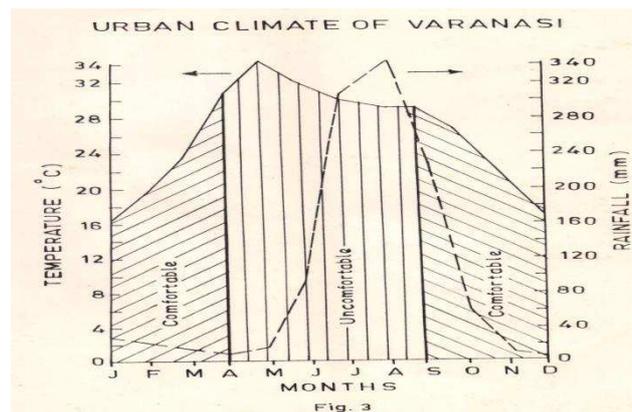
The city of Varanasi received its nomenclature from two rivers Varuna and Assi, by virtue of having its early settlements confined to them.² The terrain of the city was full of several tanks, most of them drained into the Ganga. The pit 'Mahasrote' (probably the Godavari) drained the 'Misra-Pokhara', 'Laxmi Kund', 'Benia Talao', 'Haraha Talao', and the adjoining areas into the Ganga. The Mandakini with its tributary the Bulanala carried the waters of the tank along with the 'Matsyodari Talao' area; beyond Machchodari the 'Mandakini' was divided into two branches, one turning towards south-west to meet the Ganga and the other northwards to meet the Varuna. The water parting between the Ganga and the Varuna was very well defined.³ The land near 'Hingua Tal', which has now been filled up by silting, gradually slopes towards the north and the drainage of this area was poured into the Ganga through the 'Godowalia Nala'. The present Godowalia-Dasaswamedh road (earlier Godowalia Nala) is still low and a part of it is often inundated. It has defective drainage. Another focus of Varanasi city is the 'Maidagin' and Town Hall area, which was a part of the 'Machchodari' tank which drained into the Varuna through a series of other tanks. East of 'Machchodari' on the foot of the ridge like bank of the Ganga a terrace was formed, which was pierced through the 'Telia-Nala' in the north. The whole of the Cantonment and 'Sikraul' ward was drained into the Varuna through a number of rivulets. On the southern side also there were a few larger streams which drained the 'Lahartara' and 'Sagra' area ultimately falling into the Varuna in the east of the present Varuna bridge. It is evident that most of the areas now forming the northern part of the main city, Civil Lines and Cantonment was drained in to the Varuna. But in the present physiographic conditions, the interior part of the present city is not properly drained, mainly due to the disconnections and filling of the existing tanks as a result of haphazard urban growth. From the confluence of the 'Assi Nala' with the Ganga towards south, the left bank of the Ganga was lower than the right bank. Vast area lying between the present Assi-Lanka road and the university on the one hand and the Ganga on the other, is quite low often liable to floods. The old site of the university town, was shifted westward at a relatively higher level. On the other side of the bank of the Ganga, wide sandy tract extends from near Ramnagar to the east of Rajghat (Fig. 2).

The water channel of the Ganga dashes with force at the confluence of the Assi Nala in the south, slowly skirting the high concave bank with gradually decreasing erosive power and exhibit minimum erosion tendency near the 'Rajghat' Plateau which is 85m., the crest of which is over 15m. above the lowest level of the Ganga. The bench mark near the civil court is 73m. and near the Sheopur railway station it is 77.4m.. The benchmark in Nadesar mohalla at the junction of the G.T. road and the Raja Bazar road is 75m. It is worth mentioning that the Malviya Bridge has taken advantage of high 'Rajghat' plateau on the left and the narrow sandy-stretch on the right, while the Varuna has been bridged at two points where the low

lying area narrows down to the maximum; one in the Chaukaghat area and the other near the Civil court.

CLIMATE :

The climate being more significant of all the factors of geographical environment has a direct bearing on human life. All elements of climate-temperature, pressure, wind, rainfall and relative humidity exhibit well marked seasonal variations. Varanasi is situated in the sub-tropical part of the middle Ganga valley. Similar to other parts of the country, the climate of Varanasi is also governed by the monsoon and characterized by three distinct seasons, Summer (March to mid June), Rainy (mid June to October) and winter (November to February). The temperature usually ranges from 5⁰C (December-January) to 46⁰C (June). May and June are the hottest months when the maximum temperature reaches to 46⁰C, whereas the minimum temperature (5⁰C) occurs in the months of December and January. The annual average rainfall occurring in the city and its surroundings is 111.3mm. The maximum rainfall (342 mm) has been recorded in the month of August. The unsteady wind direction is a significant phenomenon during rainy season. The relative humidity reaches to its peak (85 percent) in the month of August, although the average humidity remains 74 percent in rainy season. The pleasant weather in the city is experienced between September and March. Three months of summer and two months of rainy season are not comfortable. (Fig. 3)



EVOLUTION OF VARANASI CITY :

The growth of Varanasi city has been influenced by varying historical as well as geographical factors. Varanasi, one of the most ancient urban centres of India, is a city of great antiquity with somewhat obscure history. Chinese travelers have mentioned the presence of this city even before sixth century, when it was the capital of the kingdom of Kashi.⁴ The remnants of the fort at Rajghat plateau bear testimony to this fact. The city has undergone many changes with the varying rulers. During the seventh century great havoc occurred in Varanasi with the demolition of temples and other Hindu structures. However, the city developed the silk-brocade and ivory work as well as sculpture and brass-work in this period and even today a majority of Muslim labourers are employed in these occupations. Since the beginning of the eighteenth century the city experienced an unprecedented growth in its built up area. With the advent of railways in the middle of the nineteenth century, railway colony came into existence and with the establishment of Cantonment overall growth of the city started. The commercial activities also flourished considerably.

Prior to rail-road development, the city was confined only to the present central part along the river bank. But by the sixties of the nineteenth century the surrounding region was linked up with Varanasi city through roads and railways which helped in remarkable but

spontaneous growth in its built up area.⁵ Construction of bridges on the rivers resulted into sporadic development of the city, in the north of the Varuna, towards east of the Ganga and beyond Assi nala in the south. The city in these directions grew with narrow elongated extensions in its built up area at first and by 'filling in' process afterwards. For instance, the establishment of Banaras Hindu University in the south of Assi nala provided sufficient impetus for the development of the city in the southern direction.

PROCESS OF URBAN DEVELOPMENT

In the city of Varanasi the process of growth in its built up area has followed to some extent all the three traditional theories (concentric, sector and multinuclei) of urban development. The early growth of Varanasi city clung to the Ganga bank. The shape and size of its built up area was particularly determined by the position of the river Ganga and the local topography. The old built up area resembled with an arc along the crescent shaped Ganga. The city grew around the Vishwanath temple, the religious nucleus, forming a single commercial core in the earlier times, more or less representing concentric development.⁶

In the early part of the twentieth century, Varanasi, with the increase of some urban outgrowths along radiating roads and streets, witnessed the sector pattern of development. The growth of built up area in the city was more influenced by cultural rather than physical factors. The cultural barriers like Civil Lines, Cantonment, railway lines, factory enclosures and parks determined the extension of the city in specific direction. The construction of three bridges on the Varuna, two on the Ganga and three on Assi nala caused the development in the sector/wedge form along the major roads. Recently, the built up area of Varanasi has been observed growing in multinuclear form. The new trend of outward migration of the people and the specialization of functions stimulated such growth of the city in the south direction around educational nucleus- the Banaras Hindu University, towards the west near the industrial nucleus-Diesel Locomotive works at Manduadih and adjacent to Sheopur industrial area in the northwest as well as in the vicinity of cultural nucleus-Sarnath in the northeastern part. Further expansion of the built up area, mostly being industrial, has taken place along the axial routes radiating from the city, with the establishments like Shah group of industries, Bajaj Sevashram Private Limited in the western part of G.T. road, while Hari Fertilisers, Indian Oil Gas and cold storage etc. have emerged across Ganga in the east towards Mughalsarai. Similarly, along Ghazipur road Tullu pump factory and a few agro-based industries, along Jaunpur road the Bharat Heavy Electricals Limited (BHEL) and a Gas filling plant have been established, also causing some residential developments and shopping ribbons in the nearby area along roads.

URBAN ZONES

Taking into account the urban land use pattern, population, house density, character of roads and socio-economic structure, four urban zones have been identified in the city; (i) Inner zone (ii) Middle zone (iii) Outer zone and (iv) Suburban zone. (Fig. 4)

Inner zone is completely built up part of the city, occupying almost the whole of the Kanker ridge excepting the old Rajghat plateau. It exhibits two different aspects, the river frontside and the densely built up river side and characterized by narrow zig zag lanes, byelanes and streets as well as multistoried buildings. The street system more or less diverges from this zone to the different other sectors of the town. Upper floors of the

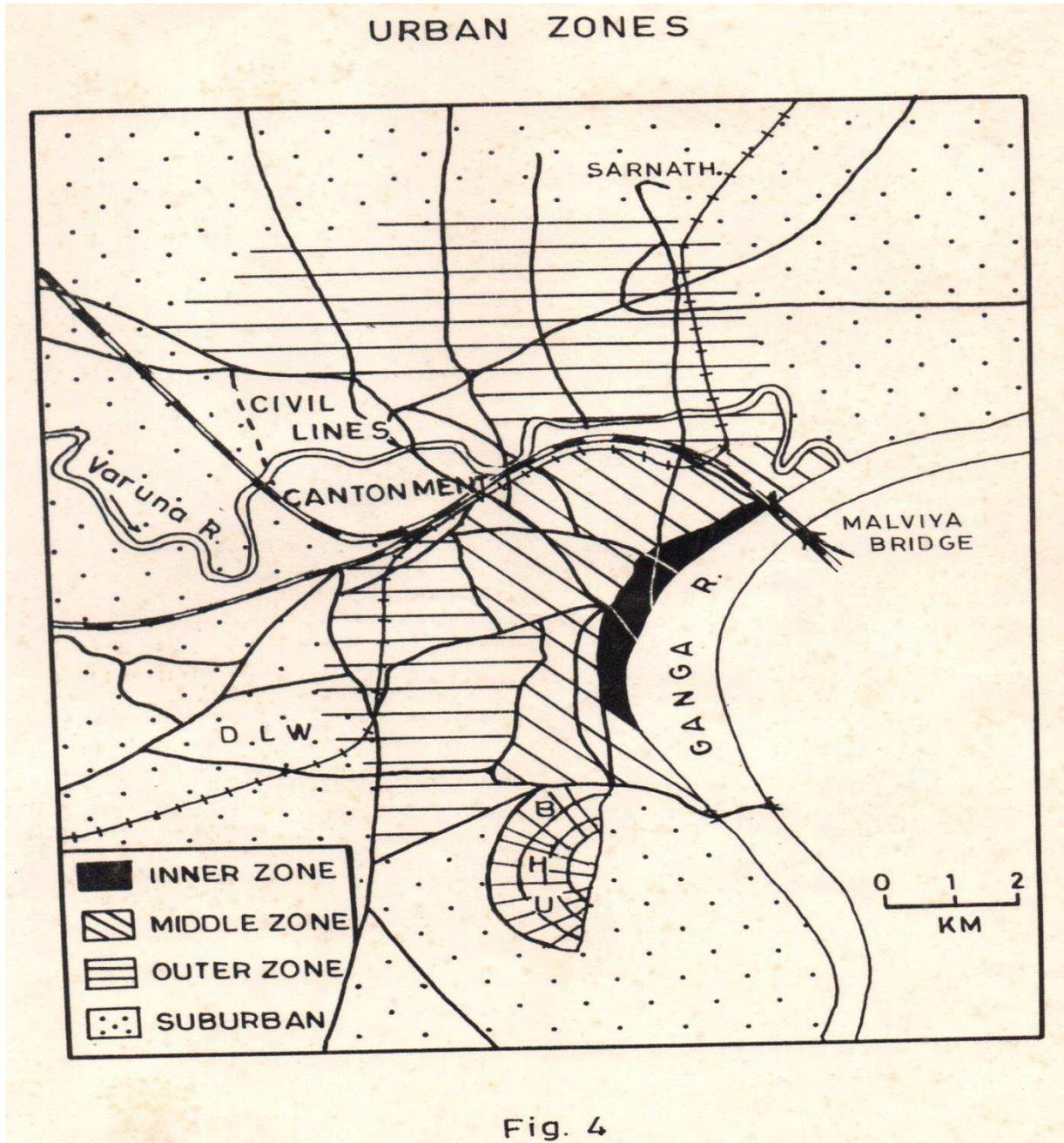


Fig. 4

roadside buildings are utilized for residential purpose, while ground floors are exclusively used for business and commercial activities. The entirely residential houses lie behind these road side buildings.

The middle zone shows a traditional character. A major part of the middle zone is also fully built up. This zone is commercially important. It is served by numerous roads which are somewhat broader than the old lanes and streets of inner zone.

Outer zone roughly encircles the middle zone from Rajghat to the confluence of the Assi nala with the Ganga. This zone is characterized by open spaces like orchard and groves, good residential houses with enclosed gardens and some of the widest and best roads of the city. This zone contains some specialized areas like the Cantonment with open and empty land studded with army officer's bungalows and offices, and the civil lines with good bungalows of civil officers, administrative and public offices. Recently, developed planned colonies unplanned older rural settlements also exist in this zone. The Banaras Hindu University, D.L.W. colony and many other educational and medical institutions as well as hospitals lie in this zone.

The suburban zone of the city has exhibited a wide range of variation in its extent and shape during last four decades. In 1955, R.L. Singh remarked that "the topography of the girdle, encircling the entire city from Rajghat to the university, has the character of the 'rural-urban fringe', where the urban fringes are essentially mingled with rural forces, often without striking population adjustments in the case of unplanned growth."⁹ In 1967, Dube observed that "the suburban zone lies beyond the outer zone within the corporation limit. Although being under the urban influence, the rural character dominates in this zone with over 50 percent of the land under cultivation around densely populated villages."¹⁰ But now the city has expanded beyond its municipal limit up to a considerable distance from the city centre. Consequently manifold changes in the landscape are being noticed on the outer periphery of the built up area as a result of day by day increasing urban activities. As such, the development in the suburban character of the city has been identified even beyond the corporation limit. This is caused by the growth of new industrial establishments and extension of various urban amenities in the area. This zone occupies peripheral locations in all directions within and outside the municipal corporation boundary of the city.

CULTURAL BASE OF THE CITY

Varanasi, the most ancient and one of the seven sacred cities of Hindus, symbolizes the religious and cultural character of India and represents "The heroic and medieval ages of Hindu civilization."¹¹ Varanasi has been indeed a National city since ancient times, with its significant role in promoting philosophical and spiritual knowledge and having attracted the sages, thinkers, philosophers and scholars from all over India as also some distinguished travelers and seekers of knowledge from other parts of the world. The people from different parts of India and other neighbouring countries (Nepal, China, Tibet, present Bangla Desh, Myanmar, Shri Lanka etc.) have settled down in the precinct of the city to pursue their own social and cultural ideas and to interact with the local patterns. This phenomenon has led to the development of city's glorious personality in form of its complex structure, preserving both types of notions-diversification as well as integration. As such there has evolved a peculiar or unique cultural personality of this city identified as 'Banarasi Culture' being famous for its quality of care freeness, delight and rigidity. Any new philosophy of life initiated anywhere in the country could not receive National recognition until it was approved by the scholars of Varanasi.

By virtue of its dominant religious character, Varanasi has been referred as the religious capital of India from the pre-historic times, as mentioned in Ramayana and Mahabharata.¹² Murdach states that "the oldest town occupied the site of Sarnath and the centre of the city lay north of the Varuna. During the medieval period the city clung close to the southern bank of the Varuna, while the present frontage faces the Ganga alone."¹³ According to Parker "there is little doubt that the name Varanasi indicated a city which

stretched away north of the Barna towards Sarnath.”¹⁴ During nineteenth century “Banaras was typical of an oriental city.”¹⁵

Increasing transport and communication facilities have invited many cultural and educational institutions in the city. The educational fame of Varanasi has spread far and wide with the establishment of Banaras Hindu University, Kashi Vidyapith and Varanaseya Sanskrit Vishwavidyalaya. In addition to these, some specific educational centres like Gandhian Institute (Rajghat), Tibetan Institute (Sarnath) and Arabic university have also grown up. Some fascinating elements like beautiful sacred temples, lofty mansions array of ghats, the crowd of worshippers, stone stairs, cultural and educational complex of Sarnath, Ramnagar fort and many other notable sights have distinguished this city as the holiest and most beloved city of the Hindus. “Varanasi is visited by over 2.5 lakh persons every year from the different parts of India.”¹⁶

Largely owing to its sacredness attached with Lord Vishwanath and other deities, various immigrants from different parts of India to Varanasi have developed here significant cultural areas, so that the city has a diversified, though fully integrated cultural landscape with imprints of their community structures and regional characteristics. (Fig. 5) Three main cultural nuclei haven identified to have formed their religious zones (‘Omkareshwar’, ‘Vishweswara’, and ‘Kedareshwara’ Khanda) in three different parts of the city close to the bank of the Ganga, owing to its increasing adhesiveness.¹⁷

For various purposes, the boundary of urban territory has been delimited through the perception of cultural ‘Yatras’* and ‘Parikramas’.** ‘Kashi Khanda’ of ‘Skand Purana’ refers to sixteen types of ‘Parikramas’ which may be classified into three groups according to spatial perceptions; (i) Local (Parikrama of the temple), (ii) Regional (Antargrihi Yatra) and (iii) National (Panchkoshi Yatra). Thus, the outer most limit of the city is marked by the Panch Kroshi route along which the people from the different parts of the country circumbulate on different auspicious days of the year and spend their nights in ‘Dharmashalas’ built near Shiva temples. Their ‘Yatra’ of twenty five ‘Croscha’*** is performed in five days, worshipping five Shiva temples. In this context Singh has mentioned that “the city has not yet been able to expand much beyond Panchkroshi Yatra.”¹⁹

Varanasi has become a very important centre of spiritual ‘Yogis’ and ‘Tantrics’. It is worth mentioning in this context that Varanasi has developed from very beginning as a professional city. By virtue of having engulfed the diversified cultural entities and traditions of different parts of the country and integrating them into its own unique ‘Banarasi cultue’, Varanasi is also known as ‘Miniature India’.

Thus Varanasi, one of the most ancient living cities of the world, has developed its built up area in all directions to a considerable extent, bearing clear imprints of ancient medieval, British and post-Independence periods, including the old settled part in the centre as well as recently planned inhabited areas on the periphery. Its further urban sprawl beyond the municipal corporation boundary has invaded the surrounding countryside by changing its landscape and creating a transitional zone of the Rural-Urban fringe.

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