CHAPTER 1

GEOGRAPHICAL SETTING OF THE STUDY AREA

Geography is the study of the earth’s landscapes, peoples, places and environments. It is, quite simply, about the world in which we live. It is unique in bridging the social sciences (human geography) with the natural sciences (physical geography). Human geography concerns the understanding of the dynamics of cultures, societies and economies, and physical geography concerns the understanding of the dynamics of physical landscapes and the environment.

Geography puts this understanding of social and physical processes within the context of places and regions - recognizing the great differences in cultures, political systems, economies, landscapes and environments across the world, and the links between them. Understanding the causes of differences and inequalities between places and social groups underlie much of the newer developments in human geography.

Geography is, in the broadest sense, an education for life and for living. Learning through geography, whether gained through formal learning or experientially through travel, fieldwork and expeditions – helps us all to be more socially and environmentally sensitive, informed and responsible citizens and employees (The Royal Geographical Society, London).

A. PHYSICAL SETTING OF ALIGARH
   a) Location

   Aligarh city forms the part of Aligarh district which lies in western part of the state of Uttar Pradesh. The city is situated about 140 km southeast of New Delhi, the National Capital of India (Fig. 1.2). Aligarh district lies in the alluvial tract formed by the rivers of the Ganga and Yamuna. This tract is commonly known as Doab (a strip of land between two rivers). This tract from agricultural point of view is one of the most important lands in the Ganga plain of India. The
latitudinal extension of Aligarh is 27° 34' to 28° 11' N and longitudinal 77° 26' to 78° 31' E. As the geodesic centre, it is at the intersection of the 27° 51' parallel and the 77° 58' meridian. The elevation at the centre of the city is 187.38 metres. India’s longest road the Grand Trunk Road (NH-91), the Agra-Moradabad Road (NH-93) and the Delhi-Howrah rail route traverse the Aligarh city from the centre.

*Source: Census of India and District Statistical Diary*

*Fig. 1.1 Location Maps of the Study Area*
Fig. 1.2 Map Locating Aligarh and its Neighbouring Districts in Uttar Pradesh

Aligarh city is the administrative headquarters of Aligarh District, Aligarh Police Range and Aligarh Division. Aligarh is one of the Metro City of Uttar Pradesh out of 13 Metro cities namely, Aligarh, Agra, Allahabad, Bareilly, Ghaziabad, Gorakhpur, Jhansi, Kanpur, Lucknow, Moradabad, Meerut, Saharanpur, and Varanasi. The greatest expanse of Aligarh district from west to east i.e. from Yamuna to Ganga is about 112 Kms and from north to south it is about 72 Km with a total geographical area of 5019 sq km. Its northern boundary
touched with Gautam Budh Nagar, Bulandshahar and Badaun districts, southern boundary by Hathras and Etah districts, southeastern by Kasganj, and southwestern boundary by Mathura district, and western boundary with Palwal district of Haryana state (Fig. 1.2). For administrative purposes the district has been divided into five *tehsils* (a sub-division of district) namely, Koil, Khair, Gabhana, Atrauli and Iglas. These tehsils are further divided into twelve development blocks namely, Lodha, Dhanipur, Akrabad, Atrauli, Bijauli, Gangiri, Gonda, Iglas, Khair Tappal, Chandaus and Jawan. The city of Aligarh is located in the Lodha block of Koil tehsil, which is also the center of the district (Fig. 1.1).

**b) Structure and Relief**

The Ganga-Yamuna doab of which Aligarh forms a part in north India, lies in a vast, fertile and level alluvial plain, gently sloping from northwest to southeast. It consists of the alluvium brought and deposited by the great Himalayan Rivers through geological ages. The extensive deposits of very young age are the stratified alluvial accumulations. The Gangetic trough, a cynclinorial depression between the Peninsular India and the southern front of the Himalayas is of post-Tertiary formation and filled up by Pleistocene alleviation (Oldham, Burrard and Glennie, 1938). The great Austrian geologist Eduard Suess, holds that it is a ‘fore-deep ‘formed in front of the resistant mass of the peninsula when the Tythyan sediments were thrust southward and compressed against them (Krishnan, 1956). Burrard (1912) holds the view, that the north Indian Plains represent a rift valley bounded by parallel faults on either side with a maximum down-throw of 20 miles. The depression perhaps began to form in the upper Eocene and attained its greatest development during the third Himalayan upheaval in the middle Miocene era. Since then it has been gradually filled up by the sediments brought by the rivers, from northern and southern sides, to form a leveled plain with a very gentle slope (Krishnan, 1956)
The nature of detritus varies from coarse sand to silt and clay. The arrangement of beds and general form of the surface is in accordance with sedimentation laid down in the form of inclined layers of river deposits. The maximum depth of the alluvium has not yet ascertained. Some borings have been laid in the alluvial deposits reaching to a depth around 700 mt. for tapping water. On the basis of geodetic data, Oldham (1917) suggests the depth of the Gangetic trough to be 4600 to 7000 mt. Another geodetic survey by Glennie (1932) gives much lesser thickness to a depth of 1980 mt.

![Map of Aligarh Geomorphology](image)

*Source: Based on National Informatics Centre Maps*

**Fig. 1.3 Map Showing Geomorphologic Lands in Aligarh District**

The alluvial deposits have been classified into two sub-divisions: old and new, locally known as *bhanger* and *khader* respectively. The *bhanger* occupies the
higher grounds than the *khader* of recent origin, which remains unaffected by the floods during the rainy season (Krishnan, 1956). The *bhangar* alluvium contains the parent material forming the *kankar* nodules of carbonate of lime. They are found in abundance in irregular concentration of impure calcareous matter. These lands are characterized by the patches of saline and alkaline efflorescence, which are the result of land and the composition of the alluvium (Auden and Roy, 1942). The *khader* forms the newer alluvium, which is light coloured and contains mainly sand, and poor in calcareous matter. It is generally found in the lower areas along the course of the rivers and refresh every year during the floods. The animal remains in the *khader* are mostly identical with living species (Spate, 1954). The prevailing soils of *khader* is pure and sandy near the river banks, as one proceeds away from the river bank, it is replaced by finer silt called as *panga*, and it is most fertile (Fig. 1.3).

The surface is spotted with the presence of several natural depressions formed by the river valleys and other drainage lines with intermingled vegetative thicket, lending variety to the landscape, whereas its elevation consists of simply slender ridges of sand. The prominent among them is along the central depression (in which Aligarh city lies), which is narrow in the north but fairly broad in the south. These ridges traverse the entire district in three regular lines, in a southeast direction roughly parallel to the river Ganga. The first follows the boundary between the Tappal and Chandaus development blocks. The second may be seen along the right bank of the Karwan stream, and the third which is more uninterrupted and less defined lies a few kilometers in the east. These ridges continue through the upper portion of Iglas tehsil and two of them enter the neighbouring Hathras district. Topographically the district as a whole presents a shallow trough like appearance with the Ganga and the Yamuna making its high rims. To counter balance the depressions, there are sand ridges which arc more numerous in western part of the district, and formed by strong westerly winds.
In some places transverse spurs occur, which are reduced gradually into the level surface plain. To the west of Aligarh there are two parallel lines of high sandy ground running from north to south. The configuration of the ground is very similar to doab, from the Ganga khadar level rises sharply to the high sandy upland which is flanked by the old high bank of the Ganga. From this point, the level descends inland gradually to a depression drained by the Nim and Chooiya river streams, beyond which it again rises to the bank of the river Kali. There is a sandy belt which rises from the low and the narrow khadar of that stream and is followed by the fertile belt of loam soil which gradually sinks into a broad central depression. The later traverses the entire district in a southeasterly direction roughly parallel to the course of the Ganga. Entering the southern tract, the land is characterized with clayey soils, imperfect natural drainage and numerous lakes in which the surface water collect, without finding an adequate outlet. In consequence of the resultant saturation the tract is marked by the frequent stretches of barren usar and exudation of salt in the form reh. Beyond this depression the surface rises again into a level plain made up of rich soil, assuming a sandy character in the western part of the district. In the northwest the general characteristic of the doab are same having loam alternating with clay in the depression with lighter ground on the banks of few rivers till finally forms a high cliff of the Yamuna from where the level drops to the khadar of that river. The southwestern part of the district presents somewhat remarkable features of homogenous sandy tracts.

The general level of land in Aligarh is regular, while the elevation of the ground surface differs i.e. about 195 m above sea level at Chandaus and Tappal in the northwest dropping to 189.58 m at Somna in the center. The elevation where the Upper Ganga canal enters (from north) the level of land is 193.24m above sea level and from here, there is a gradual slope eastwards to follow the direction of the Ganga, and 176.96 m where the Upper Ganga canal leaves the district The elevation above sea level being 186.84m at Atrauli and 180.74m at Dadon, while in the khadar the elevation at the points of the entry and exit of the Lower Ganga
canal are 178m and 176.78m respectively. Further south the level drops from 189m (on the bank of the river Karwan near Khair) to 185.32m at Aligarh, and to 183.49m at Jalali. All these places lying on the same latitude, south of this, elevation recorded as 180.14m at Gorai 177.90m at Iglas and 180.14m at Sasni. The Grand Trunk Road follows the general line of slope upto length of roughly 80km, further the level drops from 190.50m to 173.76m giving an average gradient of about one-fifth of a meter per kilometer.

b) Drainage

The drainage conditions in central depression of Aligarh district are poor resulting in the formation of shallow lakes and wetlands in which water gets collected, during the rainy season. Poor drainage, coupled with the formation of lakes and wetlands leads to exudation of salt which comes up on to the surface through capillary action and causes the formation of white layer of soil called as reh or sajje (impure sodium carbonate). Shallow lakes and wetlands lying in the fringe areas of Aligarh city present a very peculiar type of physical setting. There are several natural depressions, forming wetlands, including those formed by river valleys and other drainage lines lending variety to the landscape. The great rivers have created numerous water bodies (called lakes or jheels) in the course of their geological history; also the engineered structures have created artificial wetlands. These wetlands are scenically located amidst the verdant countryside of the urban fringe of Aligarh city.

Nature has blessed the area with a number of perennial river streams. There are two types of rivers flowing through the Aligarh district, which have their sources in snow covered mountain ranges of the Himalayas namely, the Ganga, the Yamuna and the Kali, and they are perennial; and some of them are seasonal namely, the Isan, the Karwan, the Sengar and the Rhind, which are reduced to an insignificant water courses during the dry season (Fig.1.4).
i. The Ganga

The Ganga is a perennial river which originates in the Himalayas as a stream called Bhagirathi from Gaumukh in the Gangotri glacier on 30° 55’ N and 79° 7’ E, some 4527 m above mean sea level. The Ganga river basin is the largest among river basins in India and the fourth largest in the world. Having its source in the Himalayas, the Ganga enters the northern plain at the Haridwar (in the foothills). From there it flows southwards up to the Bulandshahar district, then it enters the Aligarh district and takes a southeasterly direction forming the northeastern boundary of the district, and separates Aligarh from the district of Budaun. This river brings new alluvium during the rainy season, the volume and velocity of the river is considerably increased because of the low-lying areas which are frequently inundated during the flood period i.e. in the monsoon season.

Source: Based on National Informatics Centre Maps

Fig. 1.4 Map Showing Drainage and Rivers in Aligarh District
ii. The Yamuna

The river Yamuna has its source in the snowy peaks of the Himalayas and originates from the Yamnotri Glacier at 31° 01’N and 78° 24’ E, and altitude of 3311 metres from the mean sea level. Coming from the north (through Delhi), it flows along the northwestern border of the Aligarh district, and then moves towards south to enter the districts of Mathura and Agra. The river bank rises gradually with a gentle slope giving a room to fertile expanse of alluvial lands known as *khadar*. Its variation is much less extensive than that of the Ganga, for the actual stream the Yamuna has a well defined bank, which is topped only in years of heavy floods.

iii. The Kali

The Kali River is the only tributary of the Ganga which traverses the district. It rises in the district of Muzaffarnagar and passing through the districts of Meerut, Ghaziabad, and Bulandshahr enters the Aligarh district from the north. It then follows southeast and forming western and southern boundary of the *tehsil* of Atruali. It passes into the district of Etah near the village Barhari. It is a perennial river, as it rises during the flood it causes serious damages to the crops grown over the lands along its course. Neem and Sengar are the seasonal streams coming from the north they join together in the south and finally flows into the Kali in Etah district.

iv. The Isan

The Isan is a tributary of the Ganga, but it has its origin in several shallow depressions in the villages of eastern parts of the district. It then flows in a south easterly direction into the Sikandra Rao *tehsil* of Hathras and then enters the district of Etah, between the Grand Trank Road and the Kanpur Branch Canal.
v. The Rhind

The Rhind is another drainage channel which becomes large enough before joining the Yamuna River in the Fatehpur district of the state. The Rind flows through a low lying shallow bed of alluvial deposits. In years of unusual heavy rainfall the low lands along it are inundated and when the river recedes it leaves off a rich layer of new alluvium.

vi. The Karwan

The Karwan River also known as Karon is a natural water course, it flows in a north-south direction and passes through the Khair and Iglas tehsils of Aligarh district, and further southward passing through the district of Mathura, it joins the Yamuna River near the city of Agra.

c) Climate

Aligarh has a monsoon influenced humid subtropical climate, characterized by a distinct seasonal rhythm, typical to north-central India. Summers, starting from the month April is hot with temperatures peaking in May with a mean maximum of 40\(^\circ\)C, occasionally shooting up to 46\(^\circ\)C. The monsoonal rains, follow the summers, start in the late June, and continue till early September, with high humidity levels. This period extending from the last week of September to the middle of November is termed as the post -monsoon season. Winters in Aligarh are generally mild, but fog and cold snaps may occur during the month of January when temperature often touches the low mark at 1\(^\circ\)C, and a general dryness is experienced.

Climate forms an important part of the physical environment and influences human life and cultural behaviour. So the study of climate and rhythm of season assumes a greater significance in understanding the life style of people.
In general the climatic pattern of Aligarh may be divided into four distinct seasons:

(i) Cold weather season (December to February)
(ii) Hot weather season (March to mid-June)
(iii) Season of general rains (mid-June to mid-September)
(iv) Season of retreating monsoon (mid-September to November)

(i) The cold weather season

The cold weather season is characterized with cold and dry winds which blow from the month of December to February. Sky is clear and very rarely clouds are seen in the sky. This season is associated with low temperature and high pressure conditions. It is the season for maritime polar air masses alternating with continental polar air masses which send the chill, down the marrow. Temperature in January which is the coldest month often touches the low mark at 1°C. Rain in winter brings a pleasant weather condition and come with a great boom to the corps grown in this season.

The region comes under the influence of high pressure belt. Frost may occur, but it is not of great intensity. The maximum temperature is recorded as 25 °C, and minimum from 10 °C to 12 °C. The mean temperatures in the month of December and January are recorded as 15 °C and 12.2 °C respectively. The temperatures further fell due to blowing of cold waves coming from the north. During this season the winds blow from west and northwest to southeast direction. The winds are generally light and dry owing to the continental origin. Sometimes in the last week of December a little amount of rainfall occur which is brought by western disturbances originating in the Mediterranean Sea and migrate to this area. The temperature begins to rise by the end of the month of February.
(ii) **The hot weather season**

Summer season or the hot weather season starts around the month of April and continues till June, until the onset of southwest monsoon winds which reach the north India by the month of July. This season is characterized by an increase in temperature and a decrease in pressure. The maximum and minimum temperatures are recorded as 38 °C and 27 °C. The maximum temperature in the months of May and June touches to 44 °C and sometimes reaches up to 46 °C for a few days. The days are characterized by scorching heat and, hot-dry winds locally known as ‘loo’ blow during the day hours with a relative humidity of 24 per cent. These winds reduce the relative humidity to 2 to 3 percent during afternoon hours.

During summers, the air pressure becomes low and strong, a very peculiar phenomenon occurs in the form of dry dusty winds which blow often accompanying gale speed and raising huge amount of dust. These dust storms are called as ‘*andhi*’ and usually occur in afternoon with strong air movement. The warm air ascending upward is chilled up and its moisture is condensed, hence *andhi* is usually accompanied by light showers and thunderstorms. This storm didn’t dissipated before reaching the ground causing a pleasant and welcome fall in temperature and a slight rise in relative humidity.

(iii) **The season of general rains**

In Aligarh rain occurs with the onset of southwest monsoon, in the last week of June or the first week of July and continues till the end of September or early October. The season of general rain coincides with the humid oceanic currents reaching northern parts of India during the months of July and August, because of excessive heat over the land causes a creation of low pressure. As a result, moisture laden winds come from the Indian Ocean towards land and cause rainfall by the end of June. About 70 to 90 per cent of annual rain in Aligarh is received during this season.
A peculiar characteristic of the rainy season is that, the rains does not occur continuously, after two or three days of continue rainfall, there may be a break or a period of dry spell which may last for a week or ten days. The annual rainfall received at Aligarh is measured on an average about 64 cm. This season is characterized with cool air and frequent occurrence of rainfall. The temperature comes down from 40°C to 27°C in June and 34°C to 25°C in July. The relative humidity increases from 30 per cent in the month of May to 74 per cent by the end of June, and 84 per cent by the months of July and August. The sky remains overcast. By the month of September rainfall starts dwindling and at the end of October it is almost completely ceases and winter conditions get start.

(iv) The season of retreating monsoon

During this season weather is associated with warm winds resulting in an increase in temperature but a fall in temperature is experienced by the end of the month of October month. The maximum and minimum temperatures, recorded during the month of September are 33 °C and 24 °C respectively. This season is marked by clear sky, low relative humidity to the tune of 47 per cent and marked with a little rainfall. The temperatures remain high during the day hours and low during the night.

e) Soils

Soils of Aligarh district are alluvial in nature and similar in composition and appearance to those of the doab region. This is due to a shallow trough formed by the relief formed by the Ganga and the Yamuna flowing on relatively highland peripheries, and in a central low lying tract. The alluvium brought by the Ganga is spread over three-fourth area, while that of the river Yamuna spreads over one-fourth area of the district. Thus, the soils of Aligarh district are mainly made up of alluvium brought by these two rivers.
Accumulation of bhangar is restricted to elevated grounds above the flood level of the rivers, whereas the khadar occupies the flood plains formed by the rivers and their tributaries. Within these broad groups a wide range of soil types are found. The older alluvium occupies the leveled plains above the general flood limits of the main rivers and their tributaries where as the newer alluvium occupies the flood plain of the rivers and their tributaries, as a result of the constituents of such lands are renewed every year. In the Ganga khadar area, sandy loam is dominant which is fertile but some places are marred by the presence of salt efflorescence. In the Yamuna khadar, clay soils and loamy to good quality loam are the chief type but in large tracts of land they suffer from salt efflorescence.

The alluvium chiefly consists of various grades of sand, silt and clay. Beds of coarse sand and gravel are commonly found. As shown in Fig. 1.5, the soils differ very much in texture and consistency ranging from the sands through loams and silts to heavy clays that are ill drained, and are sometimes charged with injurious accumulation of sodium salts produce a sterile deflocculated condition, locally called ‘usar’ lands. The soils are known by different names according to the proportion of sand present in them. The major types of soils found in Aligarh are domat (clay), balui-domat (sandy-clay), bhur (sandy), reh (alkaline) and loamy soils.


i. Older alluvial soils

This soil covers a large area in Aligarh. The texture of soil varies from good quality loam to sandy loam. It has a colour from light to deep brown. This soil is very fertile and the highest yields of crops in the district come from these areas.
ii. Newer alluvial soils

These soils occupy a narrow belt in the eastern corner of the district along the course of the Ganga and in the western corner along the course of the Yamuna. These tracts receive every year new deposits of silt and sands due to the floods in the rivers of Ganga and Yamuna. The colour of these soils varies from light grey to dark grey. The texture of the soil is sandy to silt loam. The water table is usually high near the surface. The drainage is imperfect, restricted and poor.

iii. Calcareous alluvial soils

These soils occur in Iglas, Atrauli and Gangiri tehsils of Aligarh. They occupy mainly the Gonda development block. The colour of the soils varies from
brown to reddish brown and the texture from sandy to sandy loam. Due to the presence of poor inorganic matter, sandy nature and presence of insoluble salts they do not agricultural purposes.

iv. Saline and alkaline soils

Due to imperfect drainage, the district has vast areas of such soils which are either saline or alkaline. Unfortunately seasonal aridity, poor drainage and high ground water table are the main reasons for the salinity and alkalinity conditions. These soils are mainly occurring in Koil and in some parts of Khair and Iglas tehsils. The texture of soils varies from loam to clayey loam, and the colour from light grey to dark grey. The soils of Aligarh city belongs to this category of soils.

f) Natural Vegetation

As per the legends, the old name of Aligarh ‘Kol’ was named after a plant called ‘sage’ (a plant with grayish green leaves). There are about seventy two villages in the district that have nomenclature with the names of local trees or forests, suggest forest habitats in the area. It appears that the district was fairly covered by forests, thickets of babul (Acacia arabicana) and dhak (Butea frondosa), and groves of fruits like mango, guava, jamun, phalsa and jujube etc. These large forests and groves were vanished with the spread of agricultural activities, and now only secondary growth of bushes mainly jhau or canes are visible. Besides, clusters of tall thatch grasses (about 4 meters), locally called as sentha, is a very peculiar vegetal characteristic of the riverside stretches. There are several tree species like date palm, neem, semal, karanj, bakaim, scrubs, arjun, small bamboos, and short grasses like doob, moonj, khas etc. Aquatic vegetation also adds a good share in landscaping the ecosystem of the area. The common species found in the Lentic aqua systems of the region are water hyacinth, water lilies, sacred lotus, water chestnuts, ferns, lettuce, reeds, sarkanda etc., and a numerous other floating and submerged varieties of flora.
Apart from all, the Aligarh Muslim University campus covering an area of 514 hectares is marked with lush green prints on the urban landscape of Aligarh city. A great diversity of plants and trees seen belonging to different biogeographical regions, numerous species and varieties, can be seen here. Panoramic views through satellite images of the city presents a distinct picturesque of the, Aligarh district amidst the doab region, Aligarh city and the university campus area (Figs. 1.6, 1.7 and 1.8).

Fig. 1.6 Aligarh in Doab Region between the Yamuna and the Ganga Rivers.
Fig. 1.7 A Panoramic View of Aligarh in the Horizons

Fig. 1.8 Aligarh city and University Campus Area
B. EVOLUTION OF URBAN SETTLEMENT AND LEGENDS
– A HISTORICAL PANORAMA

The city of Aligarh has originated from an ancient settlement known as Kol which has also been spelt as Koil or Kol. Aligarh, which originated in the long hazy past, is very much more ancient than it is thought to be. And it has happened with other ancient settlements, its name and sometimes the mere spelling changed from time to time. The earliest name which place known is ‘Kol’. This name of Aligarh used before 18th century which not only covered the city but the entire district, though its geographical limits kept changing with time.

The origin of the name ‘Kol’ is obscure, which is debatable as there are various views on it. In Puranas Kol was malecha (dirty, mean) tribe, or a mixed caste, or aboriginal caste. In some historical texts and legends, the meaning of Kol has variously referred to in the sense of a tribe or a caste, name of a place or mountain and name of a sage (a plant with grayish green leaves) or jheel (a shallow lake). In the past, the area was abound by many jheels and depressions, which have silted up during the course of time, and a settlement come up in the bank or in the vicinity of a Kol (jheel), that could have given the place its name - Aligarh. From the study of the place names of the district, it appears that the district was once fairly well covered by forest, thickets of babul (Acacia arabicana) and tree groves.

Kolis were the professional weavers belonged to a tribal community. It is possible that a settlement of these tribes, before Turkish conquest gave Kol its name, for in the Census of 1872 there were some 35,000 Kolis in the district. The fact that this area was known for cotton cultivation throughout the recorded history, lends credibility to the view that the Kol was named after the name of a weaver tribe.

Name of Koil is also mentioned in Ibn Batuta's Travel Account, who along with 15 ambassadors representing Ukhaantu Khan, the Mongol Emperor of
the Yuan dynasty in China, traveled to Kol city en-route to the coast at Cambay (in Gujarat) in 1341. According to Ibn Batuta, it would appear that, the district was then in a very disturbed state since the escort of the Emperor's embassy had to assist in relieving Jalali from an attacking body of Hindus and lost one of their officers in the fight. Ibn Batuta described Kol "a fine town surrounded by mango groves". From these same groves the environs of Kol would appear to have acquired the name of ‘Sabzabad’ or ‘the green country’.

From medieval times onwards the name Kol or Koil has stayed and even today one of the tehsil (administrative unit) of Aligarh District is called Koil. In medieval period it was renamed many a time as Muhammadgarh, Sabitgarh, Ramgarh and Aligarh, though in some case it referred to change of name of the fort only and the town retained the name of Koil. The last three in fact referred to the fort in the north. Present Aligarh takes its name from the Prophet Mohammad’s (PBUH) cousin and son in law “Ali”. Since Afrasyab Khan and his master Mirza Najaf Khan were ‘shia’, they named the fort as Aligarh. It was generally spelt as Aligarh but British authorities some time spelt it as Alygarh.

Origin of Aligarh goes back to the pre-historic times. This is borne by the legends and folklore of the area, by the presence of a large number of mounds and more convincingly by the archaeological excavations. The legend has it that, Aligarh district was a part of the Pandav Kingdom (Mahabharata) who moved to Ahar in Bulandshahar district after the destruction of Hastinapur. Atkinson is predisposed to regard Aligarh as a Buddhist settlement and has referred to the discovery of Buddhist remains at Balai Qila. Nevill is also of the view that, certain towns in the region were inhabited during the time of Bhudha, and makes mention of the Budhist remains that are found in Balai Qila at Koil and in a mound called Gohankhera east of Sasni and in mounds west and south of Gonda.

There were a number of mounds in the district known as khera, tikri, kat, pahar etc., which suggest ancient character of settlements. Explorations
undertaken so far suggest that settlement of this region had begun around 1500 B.C. Painted Grey Ware, with its association with Mahabharata, found at many sites and these together with carbon dating of some remains make one to believe that, culture was established in the area around 1000 B.C., and by 600 B.C. the area was extensively inhabited. Later it was successively under the sway of Mauryas, Sakas, Kushanas (2nd cent. A.D.) and Naga rulers.

**Fig. 1.9** Map Showing Rural and Urban Settlements and Habitation in Five Tehsils of Aligarh District.

An area whose history and continuity of settlement, such as that of Aligarh, spans over three thousand years can be reasonably expected to have been the scene where transformation of some villages into urban centers would have taken place. Existence of urban settlements is attested by remains of brick structures and several circular mounds in the district (Fig. 1.9). Burnt bricks of Sunga-Kushan
and latter periods are found in plenty. Siddiqi, has located ancient remains and archaeological mounds in at least two hundred villages of the area.

This area in ancient times was important not merely for its long history of settlement, and for being a place where urbanization took place but it was one whose commercial and political penumbra spread to foreign lands. From a few sites in the region figurines bearing foreign ethnic features and Indo-Scythian coins have been found by Cunningham.

Archaeological remains of Gupta period ranging from 5th to 9th Century A.D. have come to light suggesting that Kol was under Gupta and later under Harsha Empire. Besides this several ancient Hindu sites are found at Jalali, Khera and Bajhera west of Akrabad, at Khera near Hathras (now a new district called Mahamayanagar) and at Tappal. From 9th century A.D. the Kol region was under the domain of Gujar-Pratiharas.

There is a gap and unconformity between the ancient and medieval period when nothing definite is known about Kol till the 12th century. Mahmud Ghaznavi, in 1018 A.D., made no mention of Kol while the capture of Baran (now Bulandshahar) which was held by Har Datta, father of Vikrarmaditya is mentioned at length.

With the beginning of 12th century Tomar, a Rajput Clan had established its kingdom in Delhi and Dhor Rajputs who were vassals of Tomars held sway over the town and fort of Kol. Later Bargujars, who are said to have fought on the side of Prithvi Raj against Chandels of Mahoba, and had assisted his (Prithvi Raj’s) grandfather in driving out Tomars from Delhi and establishing Chauhan Dynasty, were rewarded by him and allowed to hold sway over the Kol district.

The end of the 12th century A.D. marks the beginning of muslim invasions and the tilting of military balance. Dhors and Bargujars were uprooted and the fortress of Kol was taken by Qutubuddin Aiybak in 1194, and Hisamuddin
Ghulbak was appointed its first governor. Koil at that time was considered to be the most celebrated fortress in India. Qutubuddin Aiybak established what is known as the Slave Dynasty of Delhi which had Koil in its fold. Balban one of the kings of this dynasty, while he was Governor, constructed a minar (tower) in 1253 A.D. at Kol to commemorate the victory of Sultan Nasiruddin. The minar stood on a high ground of Balai Qila.

From 1194 till 1526 Kol region was ruled by Turks or Afghan kings of Delhi through their governors. Slave Dynasty's hegemony over this area spanned from 1194 to 1290 A.D. that of Khilji’s from 1290 to 1320 A.D., of Tughlaq’s from 1320 to 1414 A.D. and of Lodi’s from 1451 to 1526 A.D. During this period Kol continued to be an important place and figured again and again in contemporary narratives of late 12th to early 16th century A.D.

It was in this period that Umar Khan who was given Kol by Sikandar Lodi built the fort of Muhammadgarh in 1525, which was afterwards known as Aligarh. Kol appears to be an important centre of wine making (around 1288 A.D.), as its wines were good enough to be served to the kings. The place also emerged as an important centre of Muslim learning and one of its scholars was picked by Allauddin Khilji for imparting education in Delhi. The mosque of Balai Qila was built during this period and renovated four-five times by successive rulers. Ibne-Batuta who strayed at Kol in 1342 A.D., described it as a fine town surrounded by mango groves and noticed cotton cultivation, green plantations and castor oil trees in its hinterland. During the Lodi period (mid 15th to early 16th century) fortifications were built round the fortress at Balai Qila and were provided with four gates in it, whose names survive to this day, i.e., Delhi Gate, Madar Gate (originally Budaun Gate), Turkman Gate and Sasni Gate. The portions of the wall and a Gate can still be seen. A moat circumscribed the rampart and the name of locality called Khai Dora (ditch) reminds of its existence.
Throughout the early medieval period Kol appears as an important city. The term *Khitta* was used for Kol, a term which is commonly used for a large city or metropolis. An inscription of Mohammad-bin-Tughlaq mentioned Kol as holding an important place among cities of northern India. The size of the main mosque, Jama Masjid, also reflects the large and metropolitan dimensions that the city might have attained.

The second quarter of 16th century marks the Mughal Empire which continued till the middle of the 19th century. Kol remained an important place throughout the Mughal period and almost all Mughal Kings visited it. During Babar’s period many buildings must have been built, for which stones were cut daily for the purpose. However there are no traces of these buildings except Babri Mandi (market) which is the only reminder of the tile period. During Akbar’s time Kol was the capital of an administrative sarkar which was divided into four dasturs (revenue circles) and twenty one mahals (parganas). Its importance is testified by the fact that it had 4,000 cavalries and 79,000 infantrymen and the District was in a high state of tillage. Indigo cultivation had reached a high level of production which made Kol an important commercial centre. Indigo was exported to Samarkand, Kashghar and Armenia. Pelsaert reported that Armenian, Kabuli and Lahori merchants came here to purchase Indigo. Peter Mundy who visited Kol in 1631 described it as a fair town with a cattle and an important centre of Saltpetre (potassium nitrate) industry. Saltpetre of this place was considered the best and was exported out of India to Christendome.

Three monuments of Akbar’s period are situated in Bagh-i-Gesu Khan, now a general grave yard in Kol, one being the tomb of Mir Gesu Khan, a Shia who had built the Idgah Mosque. The region was agriculturally important and was very thickly populated. It produced food grains and cash crops particularly indigo and cotton. There was dominance of Rajput zamindars (landlords) during Akbar's time. Parts of the environs were forested and seem to have contained rich fauna
and flora. Akbar and Jehangir are on record to have come to Kol forests on hunting expeditions.

The district during Akbar’s successors, Jehangir and Shahjehan retained the characteristics of Akbar’s period. Towards the beginning of 18th century, after the death of Aurangzeb, Mughal power started dwindling in Aligarh, and Jats (caste of peasants) started emerging as a powerful zamindars. The Jats of Aligarh trace their arrival in the area in about 1646 A.D. when their ancestor Bikram Thakur drove out Janghara Rajputs and Kalara who inhabited the tract. In fact Jats were already on the political and social scene during Aurangzeb’s time who had appointed Nund Ram Jat as the faujdar (an army commander) of Aligarh District. Nund Ram died in 1695 leaving fourteen sons and Jats of today are mostly their descendants. During the 18th century Jats emerged as powerful caste displacing and dispossessing Rajputs from the area. The rise of Jats was at the expense of Rajputs and there was bitter enmity between them as noted by Smith.

In the earlier half of eighteenth century, Sabit Khan was appointed Governor of Kol by Muhammad Shah. Sabit Khan took great interest in the construction of buildings in Aligarh. He constructed a fort known as Sabitgarh (1717 AD), the present Aligarh Fort, and repaired the old fort of Kol, reconstructed the Jama Masjid (1724 AD), constructed a tank for water supply linked with Jama Masjid through an underground channel. He also constructed a market at Harduaganj. Kol during his time was a prosperous and flourishing place, yielding revenue of about Rupees 20 million annually. In 1740, ten years after his death, a contemporary account mentions Kol as a town have circumference of 1.25 mile, with abundance of mango trees around it. The fort was a strong one with high battlement and bulk of the population lived inside it and the rest outside. A tribe of Bani-Israel also lived in the fort, who had settled here since Bahlul Lodi’s time and who was engaged in teaching. There is a residential neighbourhood (‘mohalla’ or inns) in the city named after them – Bani Israelan. During 17th and 18th centuries Kol was a very important centre of learning and education. There
were scholars specialized in different branches of learning and students from other places used came to Kol.

The later half of 18th century was a period of military and political inequilibrium. In 1738 Bangash, a *nawab* (landlords) of Farrukhabad, ruled over a part of the district but his successor, who ruled, had to surrender a part of his domain including parts of Kol to Marathas. In 1753, Surajmal Jat strengthened his position by ousting Bahadur Singh Bargujar faujdar from Kol. Surajmal’s rule was eventful. He renamed Sabitgarh fort, as Ramgarh and greatly enlarged it. He also improved the famous Shiva temple of Aligarh city and the Achleshwar temple near Achal tank, which is considered to be very old temple.

**Fig. 1.10  Morphological Growth of Aligarh City**
(Ancient, Medieval and Recent Periods)
In 1760 A.D. Ahmad Shah Abdali captured Ramgarh fort. During his tenure, as a result of his oppressive rule, the town of Kol was ruined. Abdali who had secured the neutrality of Surajmal defeated Marathas at Panipat and in return to their neutrality recognized Surajmal’s sovereignty over Kol territory.

Marathas after the death of Surajmal in 1763 were making their existence felt. In 1769 they marched to Kol and wanted to capture Ramgarh fort but obtained Rupees six lakh from Jats in lieu of it. Maratha's temporarily returned to Deccan. The collapsing Mughal Empire coupled with the exit of Marathas from the region created conditions of insecurity and uncertainty. The area was parceled out between various chieftains mostly Jats, who in their territories constructed fortresses commonly, made of mud. During this period Marathas also captured various Jat forts in the district in alliance with Najibuddaula. In 1715 Najaf Khan, a mughal commander, established his rule in the district and sent his lieutenant, Afrasiyab who laid a siege of Ramgarh fort and got it vacated after a few months, for a few thousand rupees. He renamed it as Aligarh. In 1783 Sikhs or Sirhind raided and plundered the area. In 1785 Maratha Chief Mahadji Sindhia besieged the Aligarh fort and finally occupied it. It exchanged hands once again with Ghulam Qadir but was finally taken by Marathas in 1788.

Marathas appointed Count De Biogne, French as their commander in the region. De Boigne made Aligarh his headquarters in 1791 with a view to look after his own and that of Mahadji Sindhia’s interests. During his administration Aligarh, in contrast to neighbouring regions, enjoyed a period of comparative peace and stability. While villages of doab were deserted under condition of anarchy, villages under De Boigne were engaged in cultivation. Princes of surrounding states paid respect to him to get favours of the victorious General. De Boigne strengthened the bastions of Aligarh Fort and established a cantonment. In order to improve the economic conditions of the district he allowed European indigo cultivators to settle in his jagirs. Jourdan, French settled at Khair, Orr at Mendu, Thornton at Kol and Machhua, Long Croft at Kol and Jalali and Roberston and
Steward at Maloi and Allahdadpur. Indigo was the chief export and was sent down the Ganges from Farrukhabad to Calcutta.

After De Biogne, his trusted general Cullier Perron was sent by Marathas to take his place. Perron reached the climax of his career in 1801 and received tributes from various Rajput chiefs. Perron strengthened the Aligarh Fort and fortifications of Kol city and also enlarged the cantonment. He also built a garden for his residence, known as Saheb Bagh in 1802. He previously lived in a huge house outside the walls of the Kol, on a site now occupied by Danpur house, Chhattari compound, Aligarh District Hospital and Malaviya Library.

Aligarh Fort as it stands today is mainly the work of French engineers under De Boigne and Perron. It had ten sides with a bastion at each angle, and a moat 30-60 metres wide, 10 metre deep and having permanent 4 metre deep water surrounding the fort. It was situated in the midst of a plain interspersed with swamps and marshes getting water-logged during monsoons making it completely inaccessible.

By the beginning of 19th century British influence and hegemony was spreading in the area notwithstanding the strong and obstinate resistance by local zamindars (landlords) and rajas (local kings). Under General Lake, the fort of Sasni, and Bijaigarh, were the first to be attacked by the British. Raja Bhagwant Singh of Mursan held these forts and fought valiantly but could not stand the British onslaught. Kachaura (now Sikandra Rao), mud fort was the next to be taken by the British after a well fought battle. In August 1803, General Lake advanced towards Aligarh and after occupying the town of Kol advanced towards Saheb Bagh and made it as his headquarters. On 4th September in 1803 British army attacked Aligarh Fort. Pedron and Bajee Rao commanded the Indian forces consisting of a batallion of 800 under the charge of Sadut Ali, 1000 Bhadourea Rajputs, 500 Mewatis and 200 Golundaz. After a dogged battle fought inch by inch, the Marathas lost the fort”? British captured the Aligarh fort but could not
crush the dalliance and stubbornness of the people. Local leaders such as that of Pitambarpur, Chandaus, Atraulli, Dibai, Hathras and Mursan remained defiant. In 1857 there was one last attempt to throw the British yoke and at the district level Narayan, Rasul Khan, and Mir Khan organized the revolt. The attempts failed.

After British occupation in 1804 the present district of Aligarh was formed and was divided into six tehsils namely, Koil, Atrauli, Sikandra Rao (now in Mahamayanagar), Iglas and Hathras (now Mahamayanagar). Agriculture was the mainstay, Atkinson writing in 1875 states that, the proportion of cultivated area to culturable area was as high as 88 per cent and in some parganas as much as 96 per cent, producing a wide range of food and cash crops. At the commencement of British rule there were large tracts of jungle mainly of dhak (Butea frondosa), but they have given way to cultivation. Inspite of political stability on the one hand and increase in cultivated area, droughts and vagaries of weather took their toll throughout the 19th century leaving behind deserted villages. This situation must have led to occasional periods of lawlessness and banditry.

The population during the second half of the 19th century grew waywardly from about 7.5 lakhs in 1847 to about 12 lakhs in 1901 and the density fluctuated from 186 to 241 persons per square kilometer. The district during the 19th century was dotted with 1,799 settlements towns and villages, (in 1865), of which eight exceeded 5,000 populations. The number of settlements dwindled till 1881 touching the low point at 1743 and with only four places exceeding 5,000 populations. By the beginning of the 29th century there were 1,776 towns and villages of which seven were large enough to cross the 5,000 mark.

Industry had appeared as a recognized activity though a bit trifling in the first quarter of 19th century. Pottery was introduced by Henderson in 1823 and he also made improvements in the manufacture of cotton, indigo and fine gunpowder. There were numerous indigo factories in the district but none in the town. By the beginning of 20th century industrial activity had firmly established and had
diversified. Nevill writes that, the most important industry is that of cotton. Spinning and weaving from locally grown cotton is an old practice. Cotton industry got a fillip after the development of export trade. Ginning and pressing developed leading to the establishment of numerous steamed run factories. He recorded thirty four cotton factories run by steam employing about 3,000 workers and large amount of hand ginning throughout the district. Hand weaving not only withstood the competition from factory made cloth but flourished. Fabric woven in various colours and a good deal of calico printing distinguished the District. Aligarh was also a celebrated place for its cotton rugs and carpets and some 300 looms were at work.

There were other industries also by the beginning of 20th century. Crude glass, glass bangles, blow glass phials and bottles were made in various parts of the district. There were European style factories also a steam flour mill and a lime factory at Hathras, and a saltpeter refinery at Sikandra Rao. Wood carving of a good standard at Barla and stone carving at Aligarh and Hathras deserves mention. Ordinary terracotta pottery was also made. By 1907 brass and iron lock industry was firmly established and there were twenty seven lock works in Aligarh, Hathras, Iglas and other places. High quality locks were exported throughout India. Indigo industry which had flourished a great deal from late 16th century had lost its importance by this time.

An event of far reaching importance was the establishment of a post office workshop, around 1842 by Dr. Paton, Post Master General, who turned out to be the fore runner of lock and other present day metal industries. The practice of sending mail by runners was suspended and wheeled carriages, mail carts and bullock wagons were pressed into service for sending mail. These carriages as well as mail bags and their brass eyelets were manufactured and supplied all over India. In addition, scales, locks, letter boxes, badges and belts, scissors, stamp and seals, knives, lamps, lanterns, metal notice boards, mail and hand carts, wallets, tarpaulins and furniture were also made. Workshop with its ancillary printing press
supplied printed forms. The postal workshop proved to be the training ground for workers—mainly carpenters, iron workers, die-sinkers stamp cutters and leather workers which provided the basic stock of skills necessary for later day industries.

Trading activity close on the heels of industrial and agricultural development, flourished. Prior to British occupation, cotton, grain, indigo and indigo seeds were exported. Trade developed rapidly after construction of canals and metalled roads, the later contributed much to the growth of Hathras. Influence of railway was still great and bulk of export of grains, oil seeds, raw cotton, ghee (cooking fat), indigo, wrought metal, sugar, hides and Indian piece gods were made through it. Development of markets was inevitable. Hathras developed as an emporium of cotton, sugar and grain and became the most important market in the district. On the lower commercial hierarchical level local markets such as that of Harduaganj, Atrauli, Khair, Sikandra Rao, Sasni etc., contributed their mite to the trading activity. Numerous small country bazaars (local rural markets) together with periodic fairs completed the commercial hierarchy of the District.

Introduction of railway was an important hall mark in the District in the 19th century. The first line to open lip was from Tundla to Aligarh, in March 1863 which was extended and completed in 1864. Aligarh-Bareilly line was opened in 1872, Aligarh-Mathura (via Sikandra Rao) metre gauge rail line in 1875 and Hathras-Kasganj rail line in 1884.

Economic wellbeing reflected in the townscape of Koil, which Atkinson described as handsome in general appearance. The centre of the town is a high site (Balai Qila) near which is placed the new tehsil office and a number of fine shops. There are two arterial roads one going from central part of Railway station and the other crossing it north-south. Other roads and lanes are well made, drained, and paved with kankar (limestone conglomerate).

Aligarh town had expanded considerably by adding sarains (inns). Aligarh being a central halting place for travelers to and from Delhi, Agra, Mathura etc.,
sarains developed on the periphery of the Koil town, along entrance roads and when city expanded it took these sarains in its web. An altogether new area was built by Claude Russell now called Russellganj market. Atkinson noted nearly hundred Imambaras (place for rituals of shia muslims) all over the town and many Hindu temples including Achaleshwar in the southern portion of the town, bordering Achal tank which was supplied with water from Ganga canal. A large masonry tank, now in ruins constructed by Jadu Rai Kayasth sometimes in later half of 17th century along the Delhi Road, was also noted by Atkinson.

British developed the city in the north, between old Koil town and the Aligarh Fort and designated it as Civil Lines. It was here that railway station, judges’ court, clock tower, collectorate, post office, government press, government school, jail and a church were built. Private and government houses of the administrative elite were also situated in Civil Lines, Building of Aligarh Institute and Scientific Society founded by Sir Syed Ahmad Khan, founder of the Aligarh Muslim University, were also situated in civil lines, in the area which now houses the Tibbiya College pharmacy. In Russellganj, which was not in civil lines and well outside the Koil town, the Britishers constructed two hospitals.

Aligarh has become one of the important cities of the state of Uttar Pradesh province. The Aligarh Division includes the districts of Aligarh, Etah, Hathras, and Kasganj. Being a breeding ground of various national movements, Aligarh has been remained an important center for several movements, that helped in re-shaping the Indian subcontinent. This city of the state dots the doab, the land between two important rivers of the country, the Ganga and the Yamuna. It is also known as a ‘university town’ where the famous Aligarh Muslim University is located in the city’s heart and is popularly known as the ‘Mecca of Education’.
C. SOCIO-ECONOMIC AND CULTURAL SETTINGS

The fusion of historical and geographical elements in Aligarh district, within an area of about 5000 sq. km., has given it a distinct personality. The land of the district, under agricultural occupation for centuries, has witnessed the emergence of over 1,765 human settlements of which 6, winding their way through history, have attained the status of town, and one namely, Aligarh the status of large city with 8.64 lakhs population, and 15 the status of a large village exceeding a population of above 10,000. Over 3 million people live in these settlements giving the district a density of 420 persons per sq. km.

Source: Based on National Informatics Centre Maps

Fig. 1.11 Map Showing Prospects of Water Availability in Aligarh District
Fig. 1.12 Map Showing Irrigation Lands (in per cent) in Aligarh District

The Figs. 1.11, 1.12 and 1.13 reveals that, the interaction of all the environmental elements has produced a certain pattern of activities and human occupations. Agriculture practiced since centuries have come to stay as the main activity both in terms of the area and the number of people engaged. Nearly 82 per cent population of the district is thriving over 6 lakh hectares of agricultural land. Many soil types and socio-economic imperatives have produced variety in agriculture. The northeastern and central parts of the district in Khair and Sikandra Rao tehsils are comparatively more productive whereas the northeastern part in Atrauli tehsil is less productive. Cereals cultivation with more than 80 per cent
area under double cropping system dominates the scene of cropping pattern in the district (Fig. 1.13).

The principle crops grown in the district are wheat, barley, maize, rice and coarse grains. Among cash crops, sugarcane and potatoes are grown extensively surpassing cotton in importance. Cotton which had been grown for centuries is a frost sensitive and pest susceptible crop and therefore farmers having alternative opportunities have opted for other food and other cash crops. Cultivation of pulses and oilseeds, particularly mustard and arhar (pigeon pea), and potatoes occupy an important place in crop pattern. Tobacco cultivation has also gained certain

Source: Based on National Informatics Centre Maps

Fig. 1.13 Map Showing Pattern of Agricultural Cropping in Aligarh District.
acreage. The productivity level of Aligarh district and the multiplicity of crops grown here have made it a choice area for Intensive Agricultural Programme initiated by the Government. The district provides raw material and ingredients for certain industries which are flourished here and other towns.

a) Urban Morphology

The Aligarh city covers an area of 34.98 sq km of which only 61 per cent is developed. Of the developed area 49.1 per cent is used for residential purposes, 28.1 per cent for transport, 9.4 per cent for industrial and commercial purposes, 7 per cent for public utility, 2.1 per cent is under parks and open spaces and only 0.4 per cent is used for recreational purposes. The city is divided into 70 wards which spread over 158 residential localities (mohallas). On the basis of morphology, Aligarh city has been divided into four parts:

i. Achal Tal Area

The Achal Taal area is the oldest settled part of the city. There are few remains of that period except Achal Tal (tank), of masonry and a temple known as Achaleshwar whose antiquity is beyond doubt. Evidences of full-fledged settlement are lacking but the presence of a large tank cannot be conceived otherwise. This is a site inhabited predominantly by Hindu population. In later periods development of this area took place between the Manik Chowk and the Madar Gate. This area is also dominated by Hindus, where the settlement dates back to the 10th century. This part of the city is well described by Ibne Batuta in his travelogue.

ii. The Upper Kot Area

The growth pattern and consequent morphological components of Aligarh city are rather distinct and are woven round the Upper Kot (Balai Qila) which historically and texturally represents the core and centre of the city. This core area
as mentioned earlier is superimposed on the site which dates back to pre-Christian era and where debris of various cultures, layer after layer in a vertical sequence, has given the area its height and antiquity. For most of its medieval history, it was a walled city with gates opening towards Delhi, Agra, Budaun etc. The antiquity of sequential occupation, contained within the wall has produced a high level of congestion and a very high population density. With the passage of time the interstices that must have existed once got filled up and then vertical growth took place. Most of the buildings are double storied and high. Larger havelis (mansions) were compartmentalized by succeeding generations adding to residential congestion. Over crowded residential areas are stacked within the framework of narrow circuitous lanes, by lanes and blind alleys.

This area has acquired its basic form in the medieval period which is continuing. Generally concentric but occasionally sectoral growth has taken place in this area. Noteworthy fact is that, the numerous Sarains (inns) which were lying outside the limits of the city, along the roads leading to the city have become full-fledged mohallas and were drawn into the city matrix. Mohallas with pre-fix sarain, like Rahman, Hakim, Qazi, Kaba, Qutub, Mansingh, Virindaban, Narottam and Mian are all well known sarains.

This older part of the city is largely inhabited by Muslims these families mostly belong to the working class and middle class people. Some of the families living here since the medieval period and represent the social elites of the area. This area is mostly dominated by business class people, who own household industries like locks, biscuits, mutery, building; fitting and other hardware industries are very common. This has improved the well being of the people, but on the other hand it has polluted the whole environment and also led to the congestion in the area, which has affected the health of the people.
iii. Civil Lines Area

A British period constructed zone is a completely segregated zone from the first two zones. Its remoteness from earlier areas of ancient and medieval sentiments speaks of the British intentions of keeping a distance from commoners and from the people to be governed. Development of railway line in the latter halves of the 19th century, dividing the city into a western and eastern half, made the segregation of this area more pronounced. This segregation, however, was overwhelmed by the post-independence development of the city.

The principle lines of development were along the Marris road, University road, Anupshahr road and Ramghat road. All the aforesaid roads have a north-south orientation and seem to have been oriented with reference to the railway station. This area has large spacious houses with lawns in front, kitchen and gardens in the backyard. It represents a refreshing contrast to the congested area of the old city. But now it is getting too congested very fastely.

The Civil Lines area as the third zone, developed after the British hegemony over the city, was established in the early nineteenth century and though much enlarged now, its basic layout is that which was established during the British period, in the 19th century. This area was developed by the Britishers in early 19th century. It has a completely segregation in from the first two. The principal lines of development were the Marris road, University road, Anupshahar road and the Russellganj (now Rasalganj). The grain of this zone has a linear north-south bias. All the aforesaid roads have a north-south trend and seem to have been oriented with reference to the railway station.

The British brought to bear upon Indian scene their experience of town building and made straight broad roads, buildings were set well back on them. Clock-Tower, Press, Church, Collectorate bear the imprints of the British period. This area is sparsely built. Large spacious houses with lawns in fronts and kitchen
gardens in the backyard, present a refreshing contrast to the congested and dilapidated areas of old city.

Some areas in a well demarcated zone but appear in the form of small clusters which have developed in the post-independence period. Most of them are residential but some are industrial. These areas were are well laid out on rectangular patterns. Many of these areas were, till recent past, villages, well outside the city limits and its infrastructure but then the sprawling city swapped their lands and occupations. Villages like Kishanpur, Dodhpur, Begpur, Jamalpur, Bhamola and Nagla Baraula witnessed in mute silence their transformation. New industrial and residential colonies have developed in many of them, in post-independence period, like the Industrial colony, Tube-well. Loco, Medical, Begpur, Kela Nagar, Dodhpur and Jamalpur Colonies. They have developed on the northern circumference of the city. On the southern, Jawalapuri, Mahendranagar, Saheb Singhnagar and Nagla Masani colonies have developed.

During 1970s and 1980s, Aligarh city got more importance with the installation of Narora Atomic Power Station on the bank of Ganga, Radio Transmission Center, Television Relay Center and Harduaganj Thermal Power Station. Afterwards there was a long chain of constructions like F.C.I. Godowns, Provincial Armed Constabulary (PAC) head quarters, CRPF and RAF head quarters, Qasimpur colony, police colony, Dhanipur agricultural Market, Sarsol Fruit Market etc. All these projects have swallowed thousands of hectares of productive lands in the outskirts of Aligarh city.

iv. Peripheral Ring Area

Lastly are the most recently developed areas of the city lying on its peripheral ring. Many of these areas are still with the villages. These are the areas marked with dominance of one or the other functions. These areas are developing at a very fast rate. Some of the new colonies developed are Dhorra, Hamdard Nagar, Maulana Azad Nagar, Manzoorgarhi, Nagla Patwari, Firduas Nagar and Sarsol in
the northern fringe. Ramghat road in the eastern fringe, G.T. Road and Agra Road in the southern fringe Mathura road and Khair Road in the western fringe of the Aligarh city.

Like other cities of the state, Aligarh too has a distinct demarcation between the old and the new parts. Delhi-Kolkata Railway Line separates the old and the new parts of the city. The old part of the city comprises 48 wards and the new part 22 wards. The old city presents the picture of decadence having narrow lanes and roads, old and congested houses with improper educational and health facilities, and no open spaces. The new area is much clean than the old part, which comprises of Aligarh Muslim University, which spreads over thousands of hectares of land. But new residential colonies and innumerable shopping centers have sprung up making this part as congested. Gradually the outskirts of the city are expanding encroaching upon rural areas and therefore, slums have emerged at a rapid rate.

The interaction between various social and economic factors, precipitating through history has created the present functional pattern of the city. The weight of history has kept the city at a lower level of functional specialisation and accounts for mixed land uses and for unlike activities being carried at one and the same place. On the other hand, the thrust of social and economic forces have pushed the process of functional segregation a step further. There is no compact zoning in the city, but there are areas with dominance of one or the other functions. Among such dominant functions areas, are the educational, commercial, industrial, administrative and residential even.

b) Urban Land use

Urban uses of land in Aligarh city shows that, the city covers an area of 68.97 sq km, of which only 67.48 per cent has been developed, and the rest of the area lies least developed. The urban land use pattern shows that, there is no clear-cut demarcation of land use, and the functions in the city are mixed.
Table 1.1 shows that, of the total developed area of Aligarh city comprises 62.91 per cent and undeveloped 37.08 per cent. It is further seen from table that out of the total developed area, 77.87 per cent under residential purposes, 8.55 per cent for educational, 1.42 per cent recreational, and 3.6 and 3.18 per cent for transport and industries, respectively. In most of the areas industrial and business activities are mixed with both residential and business activities in various proportions. Some household industries are located in old parts of the city and piecemeal production is carried out in houses extensively. There are exclusively residential areas which have developed on the peripheral zones.

**Table 1.1 Developed and Undeveloped Area of Land Use In Aligarh City**

<table>
<thead>
<tr>
<th>Urban Land Use</th>
<th>Area (in ha.)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Developed area</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td>3625</td>
<td>77.87</td>
</tr>
<tr>
<td>Educational institutions</td>
<td>398</td>
<td>8.55</td>
</tr>
<tr>
<td>Commercial</td>
<td>190</td>
<td>4</td>
</tr>
<tr>
<td>Transport</td>
<td>169</td>
<td>3.60</td>
</tr>
<tr>
<td>Industrial areas</td>
<td>156</td>
<td>3.18</td>
</tr>
<tr>
<td>Recreational areas</td>
<td>89</td>
<td>1.42</td>
</tr>
<tr>
<td>Play grounds</td>
<td>27</td>
<td>0.08</td>
</tr>
<tr>
<td><strong>B. Undeveloped area</strong></td>
<td>2743</td>
<td>37.08</td>
</tr>
<tr>
<td><strong>Total area</strong></td>
<td>7397</td>
<td>100.00</td>
</tr>
</tbody>
</table>

*Source: Office of the Aligarh Development Authority (ADA)*

c) Education

Educational activity in Aligarh city is better segregated than other activities. There are two areas under it, beside which few are compact but are
small in size under various institutions. A major educational area in terms of territory in terms of importance is the Aligarh Muslim University and its allied institutions. Its area spreads over an area of 4.3 sq km. The campus of the university has developed in the northeastern part of the city, east of the railway line and fairly demarcated by the Anupshahr road, University Road and the Medical College road and by Jawahar Park which lies in the south. Some areas of the university campus are not contiguous and lie outside it.

The core of the campus was founded as Mohammaden Anglo Oriental College (M.A.O.) in 1877 on an elevated land, on the site where Sir Syed Hall is now located. The College was established in 1875 but its foundation stone was laid in 1877.

A liberal grant of money and land came from *nawabs* (nobles), *zamindars* (landlords) and charities of common people, and the university campus expanded northwards and eastwards. Today, the university possesses a very large campus having a number of faculties with different departments namely, Science, Life Sciences, Arts, Theology, Social Sciences, Agriculture, Engineering, Commerce, Law, Management and Medicine. Having a distinction of being the largest residential universities in India, it draws students from the nook and corner of the country and from abroad. The university has a chain of residential hostels for both boys and girls, and a chain of play-grounds, parks, open spaces, lawns, and wide streets, interspersed in the campus. Residential complexes to accommodate the staff of the university have a separate space, in several numbers. The oldest of them are the Nazeer Ahmad Road and Tar Bungalow colonies, and the Medical Colony is the largest one. Faculty buildings are mainly centered on the main building of the Maulana Azad Library, which is the central library of the university.

The entire campus is enormously spacious and neat, and contains a number of beautiful lawns and gardens, and these together with tree lined roads and
avenues make it look like a garden city, mutely but profusely pay tributes to the
founder of the university, Sir Syed Ahmad Khan.

Another fairly segregated educational area is seen in a semi-circular form
in the south central part of the city along the railway line. Here are two old and
important postgraduate degree colleges - Dharam Samaj and Shri Varshneya
College and two intermediate colleges. There is large number of other educational
institutions but they are scattered over the city and do not make a clear cut area of
urban land use. However, two of them occupy considerable areas and form a small
campus of their own on the eastern side of the city. These are the Muslim
University maintained Womens’ College and the Tika Ram Girls’ College, the
former on the Marris Road and the latter on the Ramghat Road.

d) Residential Areas

Residential areas of the city though occupy a large part of the urban land
but they do not do not make separate zones, for nowhere, except in small new
colonies, they can be described as hundred per cent residential. They pulverize a
great deal of trading and industrial activities. At places they co-exist with
residential pupose and at other places they menacingly encroach upon it.

Residential areas can be broadly separated into two, the eastern and the
western, with railway line making a divide. The western area consists of the old
city where houses are old to very old and by virtue of their age are not in
dilapidated condition. Adding insult to injuries they have been arbitrarily
fragmented from father to son and from medieval to modern times. Narrow lanes
more often with dead ends are lined with petty shops. Rooms of houses are used as
workshops. There are no open spaces in such localities and if people are leading a
normal life it is a tribute to their heroic fibre. In the outer parts of the old city, few
colonies have come up which are texturally and chronologically incongruous with
them.
East of the railway line the civil lines and contiguous areas have become residential areas of the urban elites. Elegant compact colonies with high quality spacious houses have come up. Residential areas along the Marris Road Tika Ram Temple road up to Kela Nagar are the examples of par excellence, where some of the best houses with full amenities have been built.

Final picture of the residential Aligarh is made complete with the description hutment settlements and slum. These settlements are comprised of the socially and economically down trodden populace, are situated on the southern and southwestern edge of the city. They are also seen interspaced between the central built-up areas of the city.

e) Commercial and Industrial

Commercial activity in the city is of high order, and there are wholesale, retail and specialized markets. Wholesale markets are clustered round the Baradari (city clock tower), in the northern part of the old city. Here, there are wholesale markets of food grains, gur (jaggery), spices, herbs, chuna (lime), bamboo, ghee (hydrogenated cooking oil), khandsari (raw sugar), vegetables and fruits. These markets generate heavy traffic in congested parts of the city, specifically at the intersection of busy thoroughfares and pose great problems to the people.

Retail trade of commodities does not occupy compact areas, but like in most Indian cities it is in a ribbon pattern, crawling along the traffic arteries and lanes. A commercial hierarchy that has evolved is clearly seen in the city. Subhash Road, Mahavirganj and Rasalganj are on top of the hierarchical order. They possess a high quality merchandise with a large trade turns over. Lower in hierarchy are the district (neighbourhood) shopping centres which cater local shopping demands. Some of them are the Marris Road, Naurangabad, Vishnupuri, Shamshad, Dodhpur and Nai Basti shopping centers. Still lower on the scale are the shopping establishments found in different lanes of residential wards, providing the items of immediate daily needs of the residents.
There are few specialized retail markets such as the paper and stationery, gold smithy, cloth, shoes and hardware. They fulfill the needs of the entire city population and as also of the people residing in the fringe of the city.

Industrial activity occupies a large area in old city, though they are not exclusively industrial. Aligarh district and the city have a tradition of industrial activity from medieval times when cotton, indigo, saltpeter, glass and pottery industries were developed. During the British period, the establishment of postal workshop laid the bases and provided the technical skills which provided a base subsequently to lock and other metal and fitting industries in Aligarh city. During the Second World War, industrial activity got a fillip and manufactured badges, buckles, monograms, whistles, locks etc. were manufactured for the armymen. After independence a spate of industries developed in the Aligarh city as well as in the entire district. Presently there are over 3,400 industrial establishments in the district, employing over 21,000 workers. Most of the establishments and work force are in the city itself. Hathras and Sasni are two other important industrial places.

Distribution of industrial establishment exhibits, two types of location pattern. Location in old city is characterized with a dispersed pattern. Almost in all parts of old city, in different mohallas generally small establishments are located. They are commonly found in residential houses, in outer rooms opening on lanes. The Buildings in which these household industries are located functionally unfit for workers and are dark and damp.

Lock industry is the most important industry of the town. One of the largest concentrations of this industry is in the Upperkot area. Here power run factories, employing a large work force have also come up. Locks of various types and materials -iron, brass, spring and padlocks are made here and exported throughout India and abroad to Pakistan, Burma and southeast and southwest Asian countries.
Besides lock, a host of other industries have developed in the course of time, and most of them are widely spread in the old city. There is a large number of iron foundries and other metal industries, and industries of insulated non-ferrous wires, electrical goods, cutlery, building fittings, car door handles, steel furniture, iron safe, geometrical instruments, knives, hair clips, decoration pieces, durrets and carpets. A large number of agro industries are also to be found located in old city namely mills of flour, pulses and a number of dairy, bread and biscuit factories.

There are three areas which can be labeled as industrial. One is the newly developed industrial area ITI Road, occupying an area of about 150,000 sq. meters in the northwest of the city. This is the only compact industrial zone. Here large, power run factories are situated. The other fairly segregated industrial area is on the Gular Road on the north western fringe of the Old City. Here there are a few large factories of hydrogenated and other vegetable oils. G.T. Road is third industrial area where there is a distinct concentration of industries.

f) Administration

Administrative area of the city does not make a compact functional zone even its boundaries are clear cut. It is situated in Civil Lines in northeastern part of the city, bounded in the east by the Anupshahr road and in the west, roughly by the Bareilly Railway Line. Here are the Judges’ court, Collectorate, District Jail, Police Line Club, Public Works Department and its Inspection House, District Election Office (Jawahar Bhawan) and Employment Exchange office are situated. Other offices are scattered widely and defy any locational pattern. The reason why administrative offices are situated in the Civil Lines, away from the Old City, that the present location is a continuation of the British tradition, when they wanted to keep their administrators away from 'natives' and in proximity to cantonment and in open areas.
All the aforesaid functional areas put together in the morphological framework deck the Aligarh city, a city which has existed since the Buddhist times, finding its way through the corridors of history and enduring the whims and fancies of the rulers, is today surging ahead with its educational and industrial paraphernalia which is finding recognition on a national and inter-national plane, and a city which has some of the finest specimens of Indian manhood and womanhood.

g) Population

The total population of the city was estimated as 6,69,087 persons as per the Census of 2001. There is an increase in population to the tune of 6 per cent which doubles in every twelve years. Of this 2 per cent seems to be due to the natural growth, and 4 per cent is made up by the migrants coming to the city from surrounding villages and other cities. The population of Aligarh city increases nearly 36,000 persons annually.

Source: Census of India 2001 and 2011, Geopolis Geodatabase

Fig. 1.14 Emerging Agglomerates Around Delhi Including Aligarh

Fig. 1.15 Map of Aligarh District Headquarters and Other Urban Centres.

**Table 1.2 Population Growth in Aligarh City (1971-2001)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Population</th>
<th>Number of Males</th>
<th>Number of Females</th>
<th>Decennial Growth (in per cent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971</td>
<td>252314</td>
<td>126650</td>
<td>125664</td>
<td>27.16</td>
</tr>
<tr>
<td>1981</td>
<td>320861</td>
<td>161475</td>
<td>159386</td>
<td>49.75</td>
</tr>
<tr>
<td>1991</td>
<td>480520</td>
<td>257391</td>
<td>231300</td>
<td>38.96</td>
</tr>
<tr>
<td>2001</td>
<td>669067</td>
<td>356725</td>
<td>312362</td>
<td>164.96</td>
</tr>
</tbody>
</table>


According to 1971 census, total population of the city was 2,52,314 persons with the increase of 27.16 per cent upto 1981. It is estimated that it was to
be 3,20,861 persons in last one decade, which increased substantially with the growth rate of 49.75 per cent. In 1991, the growth was 38.96 per cent but in 2001 it shows a substantial increase to the tune of 164.96 per cent.

It is observed that during the past few decades the rate of growth has been within the range of 35-40 per cent. During the 2001 Census, there has been the highest growth rate as 50 per cent. The socio-economic compulsions have lead the rural landless labourers to migrate to the city. The migration of the labourers has also affected the sex ratio to be as 868 females per thousand of males.

References


District Statistical Diary, Aligarh 2001 and 2011, Economics and Statistical Division, Lucknow, Uttar Pradesh.

Google Earth Software Programme

Krishnan, M.S., 1956. Geology of India and Burma, Madras.


National Informatics Centre, Aligarh Division.


Royal Geographical Society, London. www.rgs.org


