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## **GENERAL CHARACTERISTICS OF THE MICRO- LEVEL STUDY OF PHAPHAMAU ENVIRONS**

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### **ABSTRACT**

The study area Phaphamau environs is the part of north Allahabad district. The study about Phaphamau environs is a micro-level study. The study deals with the finding of physical features like; relief, geology and mineral, soil pattern, drainage, climate, vegetation and administrative division of the Phaphamau environs. The people have no more information about micro-level area due to lack of research in this field. The present study effort to describe the general characteristics of the Phaphamau environs. The all information about the environs is based on primary data collection.

Keywords: Phaphamau environs, primary data, information, study-area.

### **INTROFUCTION**

There is a majority of researchers whose work based on secondary data. In this digital world no one likes to go in field for primary data collection. The secondary is incapable to define the all characteristics of a small area. Mainly secondary data is a data of macro and micro area. Few secondary data is based on micro area like; the population data. Hence, there is a great need to micro-level research in a small area. For micro-level research government and people should conscious. Government should promote the micro-level research in universities and colleges.

The micro-level research is a research of small unit in a particular region. This research is the inclusion of the people of backward area. The micro-level research is research for local and poor people. It finds out the characteristics of the living places of local people like; physical and cultural characteristics. The physical characteristics like; what is the relief, structure, soil, drainage, climate and vegetation and the cultural characteristics like; settlement, agriculture, industry, culture, society and business. After all these findings, it may know that what factor is responsible in backwardness of the region. Then with the recognition of factors responsible for

backwardness, it's easy to solve problems of the people in the region. By solving the problems of the local people, it is possible to make India a developed country.

## **OBJECTIVE**

The following objective of this study;

- To find out the location of this small area and make a map of this area with the help of toposheet of the area i. e. 63G/14.
- To find the relief of the environs.
- To search geology and mineral of the area.
- To describe the soil pattern of the of the Phapahamu environs.
- To find out the climatic condition, vegetation and administrative division of the study area.

## **DATA SOURCES AND RESEARCH METHODOLOGY**

Data sources and methodology is the life of research. Without data sources cannot be justify the research. Methodology is a tool for good research. It provides better understanding about research and proves the best uses of related research.

There are two important data sources:

1. Primary data
2. Secondary data

Primary data is a direct data collection by researcher from the field. In this method researcher go to the field and collect data by their own survey, observation, knowledge and perception. Observation, interview, schedule and questionnaire method are some popular method of primary data collection.

There are two types of secondary data, published and unpublished. Textbook, journal, magazines, gazetteer are example of published data sources. Official data, unpublished thesis are example of unpublished data.

In the present study the primary data have more important than the secondary data.

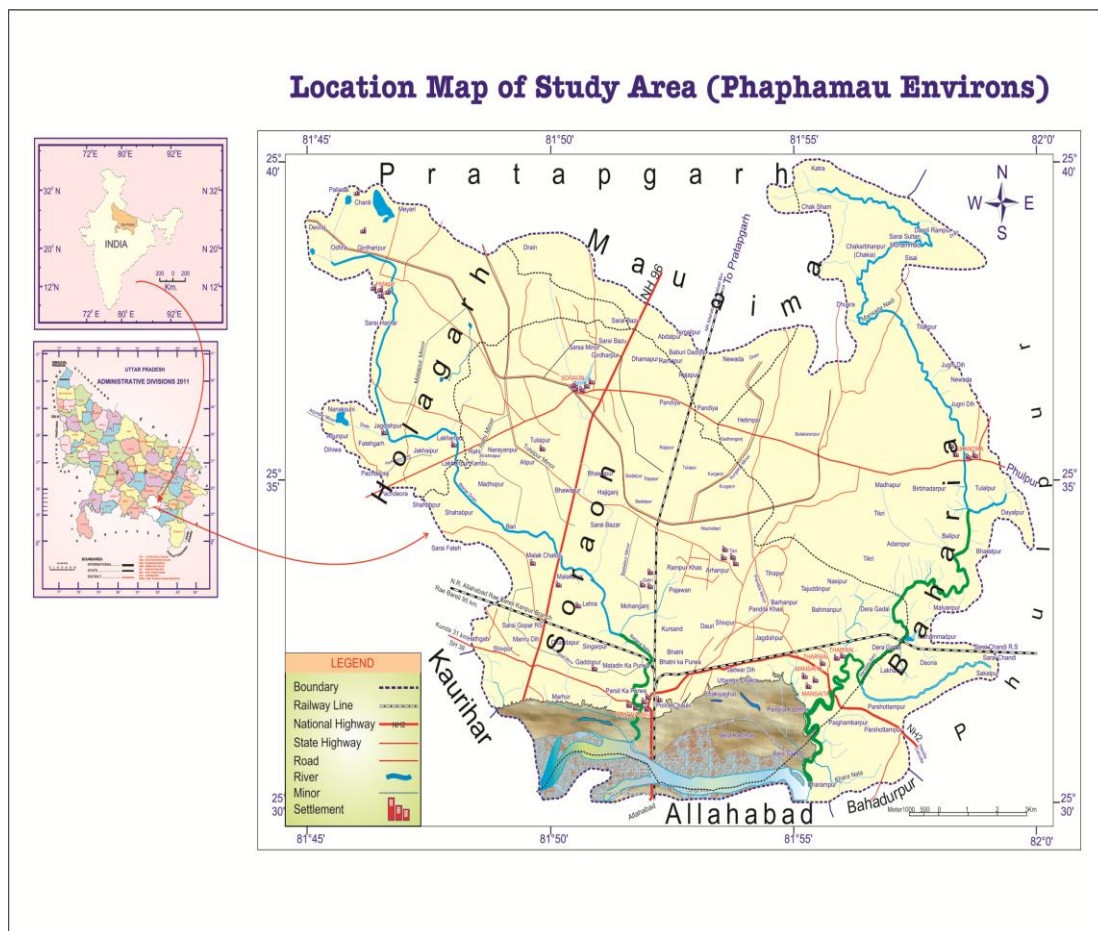
## **LOCATION**

The study-area is located in three blocks (Soraon, Holagarh and Bahariya) of Allahabad district. This study-area is the part of middle Ganga plain. There is two tributary of river Ganga, Basna drain and Mansaita River. These two are the main topic of my study with relation to settlement and agriculture. The study-area is extends from 25°30' N to 25°40' N latitude and 81°45' E to 82°00' E longitude.

Basna drain is the tributary of holy river Ganga. The drain extends from 25°30' N to 25°40' N latitude and 81° 45' E to 81°55' E longitude in Holagarh and Soraon block of Soraon Tehsil. It originates from a big pond near Holagarh. Basna drain is named in the name of a great

person Mr. Basna. It has three major sources of channel flow; minors of Sharada Canal, rainwater, waste water of villages and towns. Basna drain passes through Phaphamau suburban area with 25 kilometer length and 15.5 meter average width. The average depth of the drain is 2.97 meter and area of catchment of the drain is 1273.8 hectare in Phaphamau suburban area. This spreads over Malak-Chaturi, Malakiya, Mohanganj, Singarpur, Gaddopur, Mata Din Ka Pura, Prasiddh Ka Pura, Shantipuram, Phaphamau Bazaar and Ganganagar. From the above villages, some villages like Ganga Nagar, Mata Din Ka Pura, Singarpur, Lehra, and Malak Chaturi are interfering the drain's basin by spreading agricultural area in the basin of the drain. Another side some towns/villages like Phaphamau Bazaar, Shantipuram, Prasiddh Ka Pura, Mohanganj are interfering the drain's basin by building houses.

Mansaita River is the tributary of holy River Ganga .It meets river Ganga along left bank. It extends from 25°30' N to 25°40' N latitude and 81°53' E to 82°00' E longitude. It flows in Soraon and Bahariya blocks of Allahabad district. It is a seasonal river. It has three major sources of channel flow (1-Minors of Sharada Canal 2-Rainwater 3-Waste water of villages and towns.). Villages like Mansaita, Tharwai, Jinsi, Dera Gaddai, Adampur, Balipur, Kheorajpur, Bharatpur, Rahera, Tulsipur, Saifkhanpur, Tulapur, Sikandra, Jugni Dih, Newada, Nari, Tilokpur, Sarai Sultan Muhammad and Chak Sham are situated along the river.

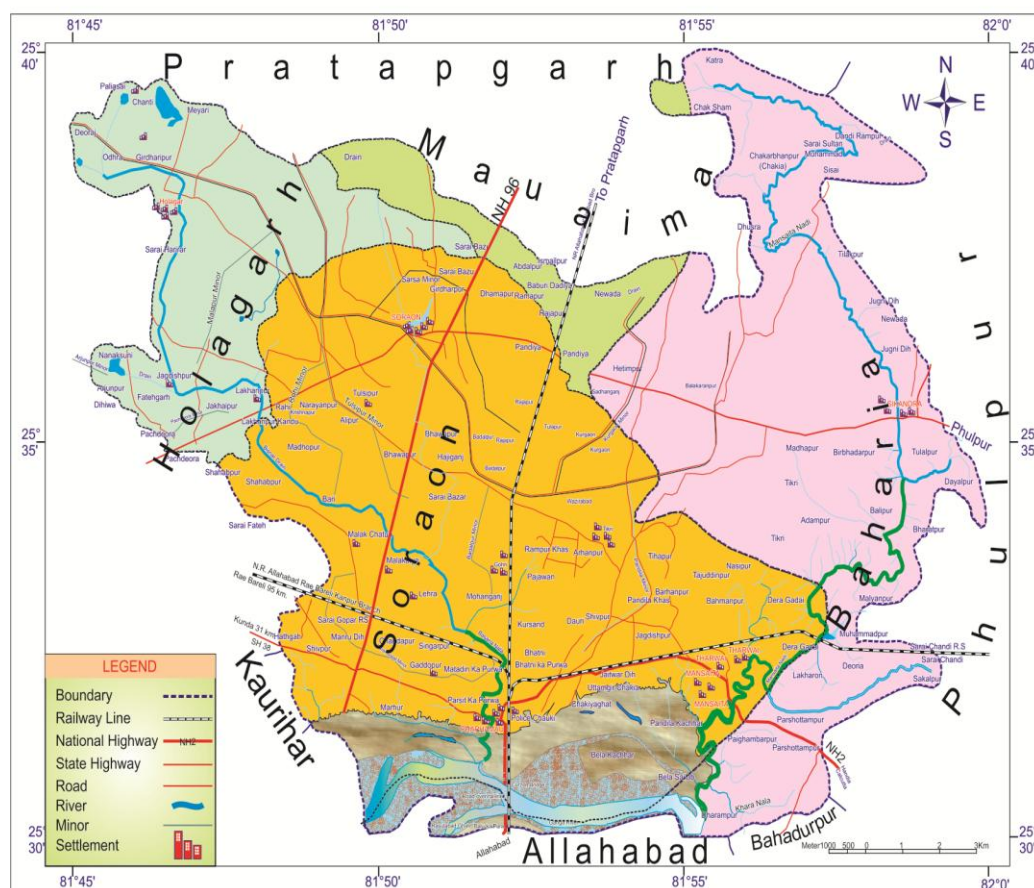


Map-1

## ADMINISTRATIVE DIVISION OF THE STUDY REGION

The study region is the northern part of Allahabad district across Ganga River. This region spread over four blocks of two Tehsil. First three blocks are Soraon, Holagarh and Mauaima in Soraon Tehsil. Other one is Bahariya in Phulpur Tehsil. About 45% area of Phaphamau environs is covered by Soraon block of Soraon Tehsil. About 35% area is covered by Bahariya block of Phulpur Tehsil. The Holagarh block spread over 15% area of the study region. Minimum 5% area is covered by Mauaima block of Soraon Tehsil.

### Administrative map of Phaphamau Environs



**Map-2**

Basna drain spread over Holagarh and Soraon blocks of Soraon Tehsil. Its total flow distance in two blocks is 25 kilometers. It flows about 9.6 kilometers distance from Chanti to Lakhanpur Kundu in Holagarh block. After this it flows 15.4 kilometers distance in Soraon block from Lakhanpur Kundu to Phaphamau town till its mouth. Its origin place is north-west part of Holagarh block near Meyari village. Holagarh is only one important town settled near the right bank of Basna drain in Holagarh block. Some villages settled near the drain in Holagarh block are; Paliasai, Chanti, Deoraj, Odhra, Girdharipur, Sarai Hrihar, Jagdishpur, Fatehgarh, Jakhaipur, Lakhanpur and Lakhanpur Kandu. Basna drain enters in Soraon block near Lakhanpur Kandu village. Phaphamau settled on left bank of the drain near its mouth. Some important villages settled near Basna drain in Soraon block are; Rahi, Madhopur, Sahabpur, Bari, Malak Chaturi,

Malakiya, Lehra, Mohanganj, Singarpur, Gaddopur, Mata Din Ka Purwa, Bhatni, Bhatni Ka Purwa, and Parsit Ka Purwa.

Mansaita River spread over Bahariya, Soraon and Mauaima block. Its total flow distance in three blocks is 29 kilometers. It flows about 21.50 kilometers in Bahariya block from Chak Sham to Tikri and from Paighambarpur to Dharampur village. In Soraon block it flows about 7 kilometers from Dera Gadai to Paighamberpur. Very little about .50 kilometers flow distance of the river is in Mauaima block. Sikandra, Tharwai and Mansaita are the important town settled on the bank of river Mansaita. Some village like Mansaita, Tharwai, Dera Gadai, Bahmanpur, Tajuddinpur, and Nasipur are settled near Mansaita River in Soraon block. In Bahariya block village settled near the bank of river Mansaita are; Katra, Chak Sham, Dandi Rampur, Sarai Sultan, Muhammada, Chakarbhampur (Chakia), Sisai, Dhusra, Tilakpur, Jugni Dih, Newada, Tulapur, Birbhadarpur, Dayalpur, Balipur, Bharatpur, Adampur, Malyanpur, Dera Gadai and Muhammadpur.

## **CLIMATIC CONDITION**

The important of a climate as geographical control is so marked, and reaches into so many aspects of human life, that would be difficult to overemphasize (Strahler). Climate plays a vital role in determining the distribution, quality, growth and performance of human life. The use of land vegetation crop cultivation, forest pasture etc. everything is determining by the prevailing climate in a region. Climate together with topography determines the capacity of land to support a population.

The climate of the study region is sub-humid moderate temperate, long hot summer but only little amount of rainfall during the winter season are some the characteristics of the climate in the Phaphamau Environs. The seasonal variations in the region are well marked. The winter season starts from middle of October and continues to the end of February. The continuation of summer season is from March to May.

## **TEMPERATURE**

There is an extensive variation of temperature during the year. The temperature begins to fall gradually after the middle of October. January records the lowest temperature in the region. The minimum temperature goes down to about 8.6° c by table no-1 during January. But, sometimes owing to spell of cold wave is a result from heavy snow-fall over the north-west Himalayas, the temperature fall as low as 5° c.

Temperature begins to rise rapidly from the beginning of March month. The maximum temperature occurs in the month of May. The mean monthly temperature occurs in the month of May. The mean monthly temperature in March is about 24° c and in May 34° c. The area becomes hottest during May and June, when the maximum temperature rises to 48° c. The dust storm or thunder storms are more frequent in the hot weather season. The dry and hot wind is locally known as “Loo”.

**Table-1****Temperature (in degree centigrade)**

Months	Max.	Min.	Ave.	Highest Ever Recorded with Date	Lowest ever recorded with date
January	23.7	8.6	16.15	31.1 January 29, 1934	2.2 January 20, 1926
February	26.3	10.7	18.5	36.1 February 27, 1896	1.1 February 02, 1905
March	33.2	16.3	24.75	41.7 March 30, 1931	7.2 March 02, 1906
April	39.1	21.6	30.35	45.0 April 26, 1931	12.8 April 03, 1905
May	41.8	26.8	34.3	47.2 May 21, 1922	17.2 May 11, 1924
June	39.4	28.4	33.9	47.8 June 12, 1901	19.4 June 21, 1930
July	33.4	26.6	30.0	45.6 July 01, 1901	22.2 July 22, 1955
August	31.9	25.9	28.9	40.0 August 01, 1903	21.8 August 23, 1953
September	33.0	24.8	28.9	39.4 September 02, 1928	18.3 September 12, 1912
October	32.4	19.6	26.0	40.6 October 03, 1896	11.7 October 31, 1898
November	28.6	12.6	20.6	35.6 November 04, 1918	5.6 November 30, 1941
December	24.3	8.6	16.45	31.1 December 02, 1946	2.2 December 28, 1902
Annual	32.3	19.2	25.75	.....	.....

*Source: Allahabad Meteorological Observatory, Bamrauly*

There is a welcome relief from the humid heat, although temporarily, when thunder shower occur. The season of north-west monsoon is commonly in the middle of June. The temperature of the day shows considerable decrease from the maximum of 42° c during the month May and June to less than 33° c in the month of July and August. The maximum range of temperature is about 17° c observed in the month of April. The lowest range of temperature is 6° c noticed in the month of August due to high moisture in the atmosphere. The variation in the range of temperature indicates the changing nature of the season. This can be seen in the above figure.

### ***HUMIDITY***

The details of relative humidity have been given in the table no-2.2. During the period of monsoon the air is very moist and at the time of relative humidity remains 70 to 75 percent. After the end of the rainy season the relative humidity gradually declines. During the summer air becomes very dry and particularly in the afternoon the humidity declines down to twenty percent less than 20 percent.

**Table-2****Relative Humidity in Phaphamau Environs (in %) According to Indian Standard Time (IST)**

Months	8:30 A. M.	5:30 A. M.
Annual	64	49
April	32	18
August	84	78
December	76	47
February	67	35
January	80	51
July	79	72
June	55	39
March	44	21
May	36	20
November	67	42
October	68	49
September	80	71

*Source: Allahabad Meteorological Observatory, Bamrauly*

***RAINFALL***

Records of rainfall are obtained from Allahabad Meteorological Observatory, Bamrauly. The Basna drain and Mansaita river in Phaphamau Environs has three rain gauge stations. The three rain gauge station is Allahabad, Soraon and Phulpur. Which keep the records of rainfall data ranging from 62 to 96 years? The details of the rainfall at rain gauge stations are presented in table-2.3. Average annual rainfall of the region are 975.4 mm. (38.40"), but the rainfall variation is very large. Sometimes results in draught condition. Table no-2.3 discloses that the mean of annual rainfall for Allahabad, Soraon and Phulpur is 980.1 mm. 895.6 mm. and 974.8 mm. respectively.



Stations	Jan.	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	
<b>Allahabad</b>	a	17.0	21.3	9.7	5.3	7.1	80.3	307.6	293.1	182.6	40.4	8.6	7.1	980.1
	b	1.6	2.0	1.0	0.6	0.7	4.6	14.1	14.2	8.5	2.0	0.7	0.7	50.7
<b>Sorsan</b>	a	19.8	18.8	7.9	5.6	7.4	60.7	273.6	185.7	166.6	35.8	6.3	7.4	895.6
	B	1.6	1.7	0.7	0.6	0.7	3.4	13.4	13.6	7.9	1.8	0.5	0.8	46.7
<b>Phulpur</b>	a	16.0	18.3	8.4	5.3	8.6	68.6	300.2	312.9	186.2	36.3	5.6	8.4	974.8
	b	1.5	1.6	0.8	0.5	0.8	3.8	12.9	13.4	8.0	1.7	0.5	0.7	46.2
<b>Allahabad</b>	a	17.1	18.9	8.0	5.4	8.5	81.5	301.6	300.5	181.7	38.8	7.1	6.3	975.4
	b	1.5	1.8	0.8	0.5	0.7	4.1	13.6	13.7	8.0	1.9	0.6	0.6	47.8
<b>a- Normal rainfall in mm.</b>														
<b>b- Average number of rainy days (days with rain of 2.5 mm or more)</b>														

*Source: Allahabad Meteorological Observatory, Bannau.*

The major proportion of the rainfall in the region is recorded during the end of the September. The season is called as the period of the south-west monsoon. About 70% rainfalls occurs during July and August. The distribution of rainy days is directly co-related to the distribution of rainfall. The maximum rain has been recorded 13.6 and 13.7 days in July and August respectively. This concentration of rainy days in these months is not useful for the cultivation of the crops or ground water table. Hence, the maximum run-off occurs in short duration. This month possesses the surplus water balance and rest of the months get scanty rainfall resulting into deficit of water balance. In the lower southern part of Basna drain and Mansaita river basin have soil erosion due to large amount of rain water.

The distribution of rainy days also varies corresponding to the distribution of rainfall. The average total rainy days in the year are 48 days. The highest mean annual rainfall occurred in



1948 in Phulpur (171% of normal rainfall). The lowest rainfall was recorded in 1928 in Soraon (57% of normal rainfall).

**Table-4**

**Extreme Rainfall (in mm.)**

<b>Stations</b>	Hottest Annual Rainfall (in % of normal rainfall and year)	Lowest Annual Rainfall (in % of normal rainfall and year)	Heaviest Amount of Rainfall (in mm.)	Rainfall in a 24 hour a day.
<b>Allahabad</b>	162 (1916)	62 (1941)	393,2	1875, 30 July
<b>Phulpur</b>	171 (1948)	57 (1918)	290.1	1902, 21 July
<b>Soraon</b>	44 (1942)	57 (1928)	249.7	1894, 2 October
<b>Allahabad District</b>	173 (1948)	59 (1918)	.....	.....

*Source: Allahabad Meteorological Observatory, Bamrauly.*

The continuous rainfall for three or four days is not uncommon in the region. The gap of rainy days increases during the month of September. In this region the spatial distribution of rainfall records a different of only about 5 centimeters from east to west. The western part of the region records the lowest rainfall. The retreating of south-west Monsoon begins after the middle of September and extends upto month of November. This period is not altogether dry. The number of days receiving rainfall is reduced to two or three days only in the month of October. The average number of rainy days during any month of the winter season does not exceed more than two days. The rainfall in the winter month is negligible. The cyclonic storms and depressions from the Mediterranean Sea often bring a few rainfall showers. Which are advantageous for the Rabi crops?

**CLOUDINESS**

During winter season the sky is covered with thick clouds. In the remaining period of the sky remain either clear or covered with light clouds. In the winters for a short period of a day or two day the sky is surrounded by blacks' clouds with the advent of westerly thunder storms.

**WINDS**

Generally the wind flows with slow speed throughout the year. It is only in the summer seasons particularly in the noon and during the south-western monsoon the speed of the wind increases to some extent. From November to April the wind flows mainly from west or from north-west. Easterly and north easterly wind blow upto May. In the rainy season the direction of the wind is either from south west to east or from north east to west. The blowing of wind from north-east and from east is declining considerable October. In this region the average speed of the

wind per hour is 4.2 Km. in January, 5 Km. in February, 6 Km. in March, 6.6 Km. in April, 7.6 Km. in May, 8.7 Km. in June, 7.7 Km. in July, 6.9 Km. in August, 6 Km. in September, 3.7 Km. in October, 2.7 Km. in November and 3.2 Km. in December. The annual average of the speed of the wind is 5.7 Km. per hour.

**SPECIAL WEATHER PHENOMENA:** From middle to the end of June Monsoon season starts. Monsoon depressions originate in the Bay of Bengal and moves across the country causing wide spread and heavy rains affecting also the region under study. Thunderstorms accompanied by squalls occasionally occur in the summer and during the monsoon months as well. In the winter season the mornings are after foggy and thunder storms and dust storms occurs sometimes due to disturbance caused by westerly wind. The area faces hail storm. The frequencies of this weather phenomenon of the region under study have been depicted in table.

**Table-5**

**Frequency of Special Weather Phenomenon**

Months	Thunder	Hail	Dust-Storm	Squall	Fog
January	2.0	0.0	0.0	0.5	1.7
February	3.0	0.5	0.0	0.5	0.9
March	2.0	0.1	0.2	0.7	0.3
April	2.0	0.0	0.7	1.0	0.0
May	3.0	0.1	2.0	0.7	0.0
June	8.0	0.0	0.3	0.6	0.0
July	11.0	0.0	0.3	0.6	0.0
August	7.0	0.0	0.0	1.6	0.0
September	8.0	0.0	0.0	1.1	0.1
October	0.6	0.0	0.1	0.1	0.1
November	0.0	0.0	0.0	0.0	0.0
December	0.7	0.1	0.0	0.0	0.0
Annual	47.3	0.8	5.1	9.8	4.7

*Source: Allahabad Meteorological Observatory, Bamraully.*

**GEOLOGY AND MINERAL**

In the geographical study of a region the knowledge of geological structure is fundamental requirement. The structure of rocks directly influences the soil and mineral resources of a region. The agriculture, settlement and economic development of the country also depend indirectly on the geological structure. The alluvial soil brought forth by sedimentary rocks is very useful for agriculture.

Geological formation of the study region can be described on the basis of structural characteristics during the period of its formation and reconstruction. The formation consists of alluvial deposits of Aryan group formed during quaternary epoch of recent and Pleistocene ages (Wadia-1957). The entire study region is composed of Gangetic alluvia. The deposition of this

alluvium started in the Pleistocene period after the final upheaval of the Himalayas and is still continuing (Auden, 1933)

### ***SILT CLAY AND FINE TO MEDIUM GREY SAND***

It covers very little area of the region. Its accurate location is along the side of Basna drain and Mansaita River. The river plays an important role to form this type of geology. It covers more area along Mansaita River than Basna drain. This geological structure has continuity along lower basin of Basna drain and Mansaita River. The upper basin of the drain and river have scattered structure of the geology.

### ***CLAY AND FINE SAND***

This is the second important geological structure of the region. It is the resultant geology of Basna drain and Mansaita river in Phaphamau Environs. It covers more area than first type of geological structure. It cover broad geological area along lower river basin in continuous structure. The upper river basin have narrow strip of geology in continuous structure. There is somewhere break in its continuity by first type of geological structure.

### ***SAND SILT AND CLAY WITH KANKAR***

The third and most important geological structure is sand silt and clay with kankar. It covers about 85% geological structure of the region. It has some mix of old and recent alluvial structure. It is also the resultant geology of river in Phaphamau Environs. It has four mix part of geological structure like sand, silt, clay and kankar.

### **MINERAL**

Allahabad district is rich in mineral in Uttar Pradesh. Sand and silica are the important mineral of the region. There are two major mineral in the region:

#### ***SAND***

Sand is an important mineral of the region. River Ganga is the main source of sand near mouth of Basna drain and Mansaita river in Phaphamau Environs. There is two point of sand mining in the region near the mouth of Basna drain and Mansaita river. There is a heavy demand of sand in the region due to large number of constructional work in the region. Heavy demand of mining is the result of over and illegal mining. So there is a imbalance in the basin structure of the stream.

#### ***REH***

Reh is the second important mineral of the region. Minor irrigation is the main source of the mineral. Malapur, Rohi, Tulsipur, Sarsa, Badalpur, Kurgaon, and Pandila are some minor of the region. The irrigated area of these minor are the area of Reh in Phaphamau Environs. Reh is a white colour small sand like part.. It is the result of heavy irrigation in the region. Reh is the sheet small sand particle spread over irrigated land of Phaphamau Environs.

## **DRAINAGE PATTERN**

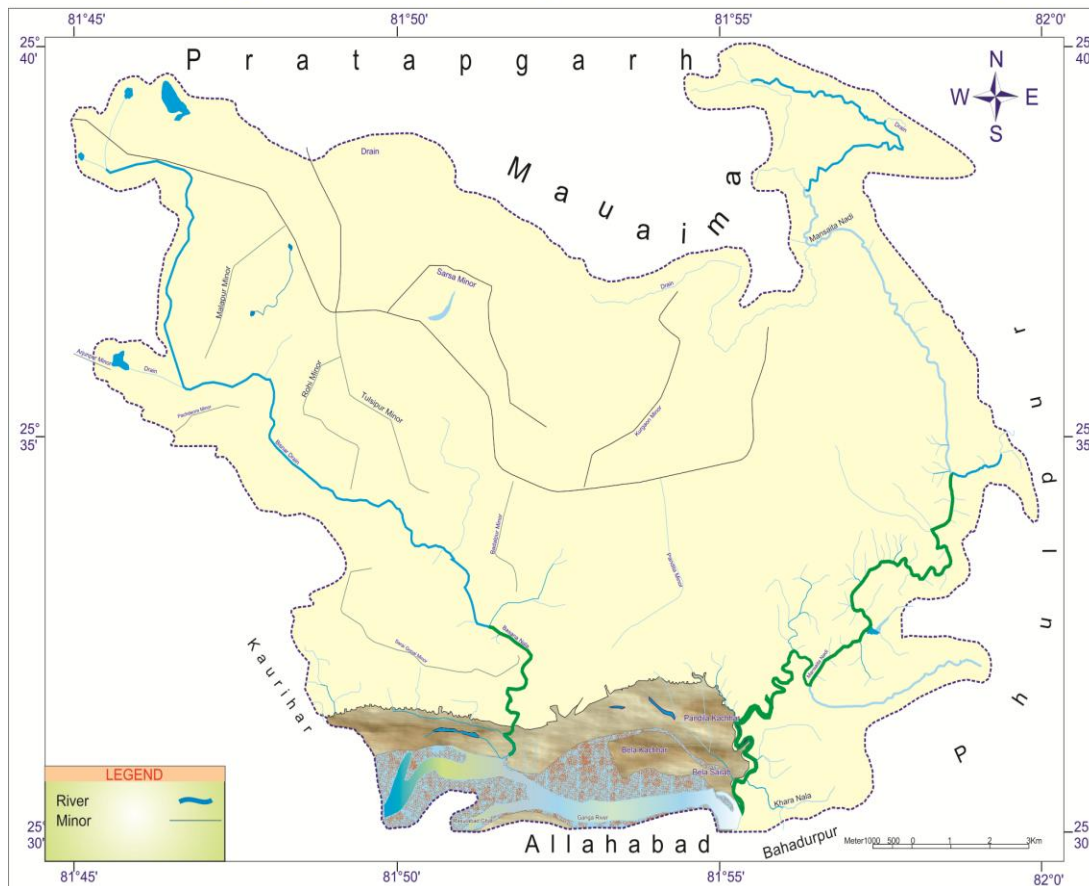
Basna drain and Mansaita River is two important tributary of river Gnaga in Phaphamau Environs. Basna drain, Mansaita River, its tributary and river Ganga are defines the drainage pattern of Phaphamau Environs.

Basna drain drains from north-west to south-east direction in Holagarh and Soraon blocks of Soraon. The course of the stream is longitudinal to that of the Ganga River in lower middle Gangetic plain in Phaphamau Environs. The drain originates from a big pond near Chanti village in Holagarh block of Soraon Tehsil. This drain is a seasonal stream. It has only seasonal flow of water during and immediately after the rains. It three sources of water flow rains, minor of Sharada canal and severe of villages and towns in Phaphamau Environs.

Basna drain spread over Holagarh and Soraon blocks of Soraon Tehsil. Its total flow distance in two blocks is 29 kilometers. It flows about 11.6 kilometers distance from Chanti to Lakhanpur Kundu in Holagarh block. After this it flows 17.4 kilometers distance in Soraon block from Lakhanpur Kundu to Phaphamau town till it mouth. Its origin place is north-west part of Holagarh block near Meyari village. Holagarh is only one important town settled near the right bank of Basna drain in Holagarh block. Some villages settled near the drain in Holagarh block are; Paliasai, Chanti, Deoraj, Odhra, Girdharipur, Sarai Hrihar, Jagdishpur, Fatehgarh, Jakhaipur, Lakhanpur and Lakhanpur Kandu. Basna drain enters in Soraon block near Lakhanpur Kandu village. Phaphamau settled on left bank of the drain near its mouth. Some important villages settled near Basna drain in Soraon block are; Rahi, Madhopur, Sahabpur, Bari, Malak Chaturi, Malakiya, Lehra, Mohanganj, Singarpur, Gaddopur, Mata Din Ka Purwa, Bhatni, Bhatni Ka Purwa, and Parsit Ka Purwa.

Mansaita River is the second important river of the Phaphamau Environs. It originates from a big tank near Chak Sham and Katra villages. It has also three major sources of water rains, minor of Sharada canal and severe of some villages and towns. The course of the Mansaita River is longitudinal to that of river Ganga.

## Drainage Pattern (Phaphamau Environs 2015)



**Map-4**

Mansaita River spread over Bahariya, Soraon and Mauaima block. Its total flow distance in three blocks is 34 kilometers. It flows about 25.50 kilometers in Bahariya block from Chak Sham to Tikri and from Paighambarpur to Dharampur village. In Soraon block it flows about 8 kilometers from Dera Gadai to Paighambarpur. Very little about .50 kilometers flow distance of the river is in Mauaima block. Sikandra, Tharwai and Mansaita are the important town settled on the bank of river Mansaita. Some village like Mansaita, Tharwai, Dera Gadai, Bahmanpur, Tajuddinpur, and Nasipur are settled near Mansaita river in Soraon block. In Bahariya block village settled near the bank of river Mansaita are; Katra, Chak Sham, Dandi Rampur, Sarai Sultan, Muhammada, Chakarbhampur (Chakia), Sisai, Dhusra, Tilakpur, Jugni Dih, Newada, Tulapur, Birbhadarpur, Dayalpur, Balipur, Bharatpur, Adampur, Malyanpur, Dera Gadai and Muhammadpur.

### SOIL PATTERN

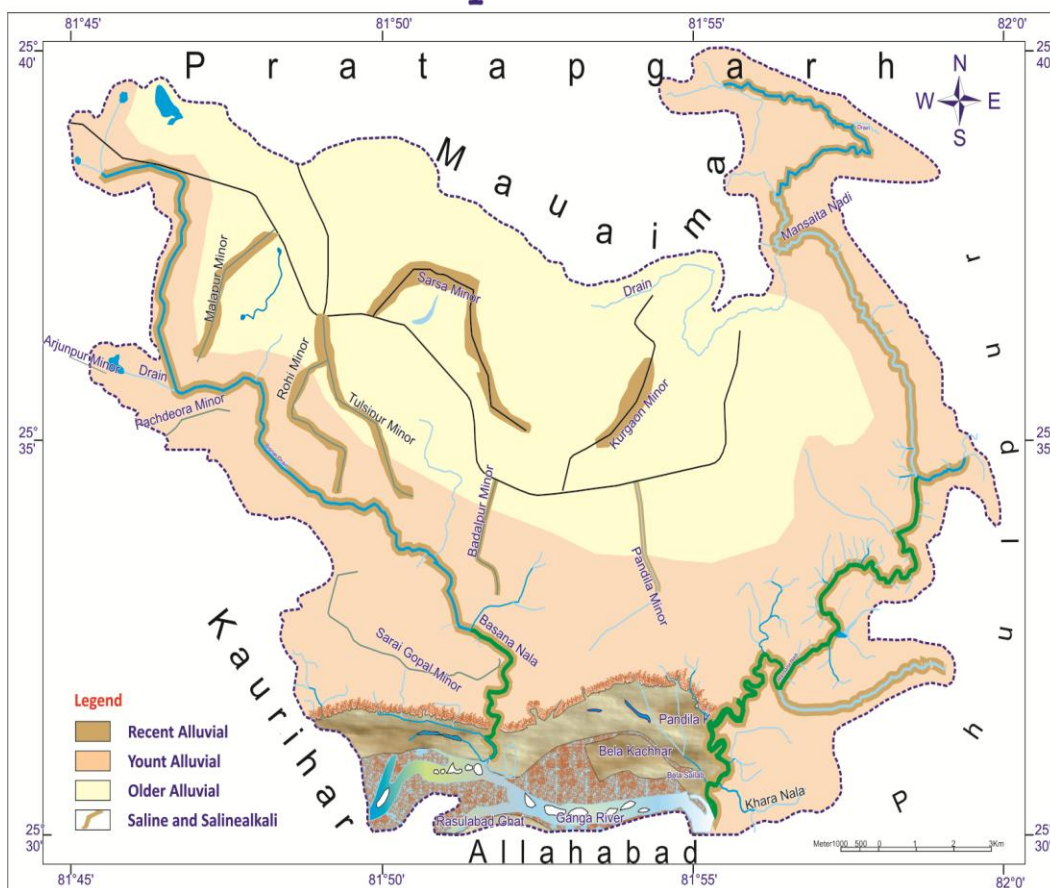
Soil plays a very crucial role for a country like India, where over 70 percent of the people earn their livelihood either directly or indirectly from agriculture. The distribution and density population always depend on the existing pattern of soil fertility and productivity.

Soil is that part of the regolith that support rooted plants (Chaster r. Longwell and Rchard f. Flint). Climate and topography are controlling factors of soil. A systematic study of

soils logically follows a study climate and landforms because both are essential factors in soil making (a. N. Strahler). Fertility of the soil depends upon its physical and chemical properties and also the processes that make the soil. The need of soil study in the field is essential as plays an important role in the distribution of crops, better crops and higher yields. The physical and chemical properties of soil are the major determinants of water retentivity and fertility.

Influence of physiographic and climatic environment on the soil formation is reflected and it suggests the type of soil present in a region. Many geomorphologists have studied the interrelationship of soil formation and physiography in different environment.

### Soil in Phaphamau Environs



**Map-5**

The Phaphamau Environs is the part of Gangapar plain in Allahabad district. The study area is the part of lower Middle Ganga plain and upper Lower Ganga plain. The 99% area of the region is covered by alluvial soil. Only 1% area is covered by saline and saline alkali.

Four major soil types in the region are:

#### **RECENT ALLUVIAL**

This soil is newly formed soil by Basna drain and Mansaita River in Phaphamau Environs. The soil spread along both side of Basna drain and Mansaita River from mouth to

the place of origin in a narrow strip. The density of the soil is high in lower river basin side than upper basin side. It covers about 4% area of the study region.

### ***YOUNG ALLUVIAL***

This type of soil is not more recent than recent alluvial and not older than older alluvial. This soil is an important soil of the region. It covers maximum area of the region about 51%. It spread along both side of the river after the strip of recent alluvial soil. Young alluvial soil have broader strip than recent alluvial soil. It spread over lower basin of the region.

### ***OLDER ALLUVIAL***

This type of soil is the second major soil of the region. It cover about 44% area in Phaphamau Environs. This is Bangar type soil. It spread over upper basin of Basna drain and Mansaita river in Phaphamau Environs. This soil is a alluvial soil. But the formation of the soil is older than recent alluvial and younger alluvial soil.

### ***SALINE AND SALINE ALKALI***

This soil is some different type of soil formation in the region. It formed due to heavy minor and canal irrigation in the region. It spread along both side of the minor like; Malapur minor, Rohi minor, Tulsipur minor, Sarsa minor, Badalpur minor, Kurgaon minor and Pandila minor in Phaphamau Environs.

### **VEGETATION**

The natural vegetation is closely related to relief, soil and climatic condition in the region. Thus, it is necessary to consider its role in the study area.

Natural vegetation plays a leading role in the process of soil formation. It has been necessity to preserve the soil and fertility of land. The life-fall make soil rich in mineral constituents.

Ground vegetation is the source of organic matter in the soil. The upper layer contains most of the organic material. Subsoil is poor in organic content. The natural vegetation expresses the summation of the climatic factors under which it grows. Though there is plant association whose occurrence is determined mainly by soil condition. While in other cases the operation of climatic factor may be modified by the character of the soil. Even in a region of typical forest climate, local factors, topography and drainage may lead to the in the extreme humid condition. The forest in the region extends over an area of about 0.015% of the total area. It is very area than 33% in plain area and 60% in hilly region recommended by national forest policy. The natural vegetation is distributed more or less evenly throughout the region except the mouth portion of the Basna drain and Mansaita River due to social forestry. Figure no. 2.6 shows the block wise distribution.



## **CONCLUSION**

This study is information based micro-level study. In this study there is information of relief, geology and mineral, soil, drainage, climatic condition, administrative division and vegetation. These physical features are helpful in the study of other physical, cultural and economic features. The above general study makes people informative about their living place. Thus the all study is information based study.

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## **WEBSITES**

- 1- [www.allahabad.nic.in](http://www.allahabad.nic.in).
- 2- [www.allahabad.wikipedia.in](http://www.allahabad.wikipedia.in).

## **NEWSPAPER**

- 1- Dainik jagaran
- 2- Amar ujala